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Job Satisfaction of Nurses – Components of the Working Environment with Regard to Forms of Employment

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Abstract

Objective: *The aim of the research was to compare the level of job satisfaction of nurses with two forms of employment: a civil law agreement (CA) and an employment agreement (EA).*

Material and methods: *The research was conducted in a group of 266 nurses (age: 45.4±8.8) employed in hospital wards in lubelskie voivodship. The WDI questionnaire was used. The test results at the level of p≤0.05 were considered statistically significant.*

Results: *Significantly higher level of job satisfaction was indicated in the group of nurses employed under a civil law agreement ($\overline{X}$CE=5.49 point, $\overline{X}$EA=4.68 point). The level of job satisfaction significantly determined the age, remuneration and seniority of nurses (p<0.05).*

Conclusion: *Job satisfaction depends on the conditions included in the agreement for the provision of medical services, as well as is related to peer relations, contacts with the supervisor and the amount of obtained remuneration.*

Key words: *nurse, job satisfaction, employment.*

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Introduction

The nurse profession is highly appreciated by the public. This also applies to the quantity and quality of medical services provided, which increases the social prestige of the profession [1]. The essence of the efficiency of health care institutions is the job satisfaction of employed medical personnel [2].

The work of the medical team requires participation of the individual in mutual interpersonal relations, which often contributes to the occurrence of negative emotional tensions. Working under time pressure, stress or workload contributes to lower satisfaction with one's performance [3]. Only the integrity and competence of the medical team, in which the atmosphere of mutual trust is noticed, confirms its proper cooperation and effectiveness in conducting healing process in the patient. These factors also increase the efficiency and quality of work on the organisational grounds, which increases the level of job satisfaction [4].

The hypothesis whether the form of employment significantly influences the level of job satisfaction of nurses working in hospital wards was verified.

Material and methods

Questionnaire

The research used the Work Description Inventory (WDI) by Oswald Neuberger and Mechthild Allerbeck in the Polish adaptation of A. Zalewska (2001).

The WDI standardized tool contains 83 questions characterizing the working environment using 7 components. Among them we distinguish: Colleagues, Superiors, Contents of work, Conditions, Organisation and Management, Development and Salary. The 4-step scale was used to describe individual components (1 – yes, 2 – rather yes, 3 – rather not, 4 – no). According to the key, some inverted scores were used in some of the questions. Each component describing individual spheres of work

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ends with a question about the overall satisfaction with the given component. These questions are marked on a 7-step schematic scale of face symbols. Value 1 is assigned to a very dissatisfied face and rises to 7 (very happy face). The questionnaire ends with two questions regarding overall job satisfaction and life marked on the 7-point scale described [5].

The sheet was accompanied by an additional part of the technique – the importance of the components of the working environment, in which one should indicate the most important sphere from among the eight, having the greatest impact on the decision to start work. For this reason, a total of 80 points should be allocated to individual factors in order to underline their own preferences regarding the choice of place of work and its character [5].

Respondents

The research was conducted in a group of 266 nurses working in hospital wards in Poland. The average age of the respondents was 45.5±8.8 years old. Among the nurses' average age, it was significantly lower in people working based on contracts (EA: 45.8±8.8; CA: 44.2±9.2; Z=1.990, p=0.046). The average length of seniority was 22.9±10.4. Significantly longer seniority noted in nurses employed under an employment agreement (EA: 23.3±10.4; CA: 21.2±10.7; Z=2.201, p=0.028) (Table 1).

The respondents were informed about the possibility of resigning from participation in the research at any stage. The research did not bear any risk.

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Table 1. General characteristics of the researched group

Characteristic	n	%
Gender (n – 266) - female/male	266/0	100.0/0.0
Education (n – 266) - bachelor/master/PhD	154/80/32	57.9/30.1/12.0
Employment (n – 266) Employment agreement (EA)/contract agreement (CA)	217/49	81.6/18.4
Salary (n – 266) - up to 1600 PLN /1700–2500 PLN / 2600–3500 PLN /above 3500 PLN	25/140/ 76/25	9.4/52.6/ 28.6/9.4

Variable	$\bar{x}$	SD	Reference [min–max]	Me	Q_1	Q_3
Age (n – 266) [years]	45.5	8.8	23.0–62.0	48.0	41.0	51.0
Practice (n – 266) [years]	22.9	10.4	1.0–43.0	25.0	17.0	31.0

* – mean, SD – standard deviation, Me – median, Q1 – lower quartile, Q3 – upper quartile

Data collection

To ensure the representativeness of the sample, targeted selection was applied to the hospital facility. Individual inquiries were sent to hospitals about the employment structure of nurses in hospital wards. In order to ensure the assessment of job satisfaction of nurses, the nature of the work was considered only in hospital wards, which differs from the nature of the work of a nurse providing medical care in the field of specialist counselling.

Criterion for including the hospital in the research:

- entity entered in the Register of Entities performing therapeutic activity in Poland,
- employment of nurses in hospital wards based on an employment agreement and a civil law agreement in a given medical facility,
- consent of the director of the hospital facility to conduct the research.

Finally, 7 hospitals in the lubelskie voivodship (Poland) were included in the research.

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The final result of the assignment of the researched group of nurses to two comparison groups involved the following criteria. **Selection criterion of group I (EA)**: female gender, employment in a hospital ward, form of employment – employment agreement (n=217). **Selection criterion of group II (CE)**: female gender, employment in a hospital ward, form of employment – civil law agreement (n=49).

Statistical analysis

In the structure of nurses' employment, a civil law agreement is a rarer preferred form of employment. The sample size was estimated with the Z test: H_0 hypothesis: $Mi_1=Mi_2$ assessing the average level of job satisfaction in the compared nurses groups and a test power of 0.9 was assumed. Assuming an error of $\alpha=0.05$, the representativeness of the sample included in the research was confirmed.

The basic descriptive statistics were used to present the data. Questions with a 7-point schematic scale were considered as a quasi-continuous variable. The distribution of measurable variables was evaluated using the Shapiro-Wilk test. The Pearson Chi^2 test was used to analyse non-measurable variables. For the comparison of 2 independent groups, the Mann-Whitney U test was used. The analysis of the WDI 82 vs Age relationship was made using the post-hoc Tukey test, while the post-hoc NIR test was used in the WDI 82 vs Practice comparisons. The test results at the level of $p\leq0.05$ were considered statistically significant. The statistical analyses were performed with STATISTICA 13.0.

Results

In each of the analysed components affecting the overall level of job satisfaction, there were statistically significant differences between the compared groups ($p\leq0.05$). The largest difference in the average level of job satisfaction was noted in the aspect of remuneration. Nurses employed based on an employment agreement indicated an average level of satisfaction at the level of $\overline{X}EA=2,7\pm1,47$. On the other hand, nurses employed

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based on the contract rated the level of job satisfaction in the aspect of the remuneration $\overline{X}$CE=4.9±1.69 almost twice as much. The exact data is contained in the table (Table 2).

Table 2. Difference in the average degree of satisfaction with individual job components, taking into account the form of employment

Overall satisfaction with:	CE		EA		p
	$\bar{x}$	SD	$\bar{x}$	SD	
Colleagues	6.0	1.02	5.7	1.02	0.049
Superiors	6.3	0.97	5.7	1.16	0.000
Contents	5.2	1.01	5.3	1.01	0.000
Conditions	5.8	1.14	4.9	1.12	0.000
Organisation and Management	5.1	1.29	4.0	1.40	0.000
Development	5.3	1.15	4.5	1.18	0.000
Salary	4.9	1.69	2.7	1.47	0.000

*EA – employment agreement; CE – contract employment; $\bar{x}$ – mean; SD – standard deviation; p – value

Based on the general question from the WDI questionnaire (no. 82), a significantly higher level of job satisfaction was confirmed in the group of nurses employed based on civil law agreements $\overline{X}$CE=5.49 in comparison to nurses employed based on employment agreements ($\overline{X}$EA=4.68) ($p<0.001$).

Analysing the level of satisfaction with the age of nurses, there were statistically significant differences between the compared groups (Age: group 1 vs 4, $p=0.032$). The older a nurse is, the lower overall job satisfaction is. The youngest nurses presented the highest average level of job satisfaction $\overline{X}$=5.52 points. With age, the level of satisfaction decreased and in the case of women over 50, the average level of job satisfaction was $\overline{X}$=4.65 points.

The youngest nurses experienced a subjective perceived level of satisfaction on the WDI 82 scale with higher values compared to women working for a longer period of time ($p<0.05$). The longer the nurse's seniority is, the overall job satisfaction proportionally decreases (Practice: group 1

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vs 3, p=0.006, group 1 vs 4, p=0.001). Nurses with the shortest seniority showed a significantly higher average job satisfaction at the level of $\overline{X}$=5.5 points, compared to nurses working over 30 years ($\overline{X}$=4.6) (Table 3).

Table 3. Average level of nurse job satisfaction considering employment, age and practise

Overall satisfaction (WDI 82) vs:	$\bar{x}$				p
Form of employment	CE		EA		0.000
	5.49		4.68		
Age Years (number of group)	<30 (1)	31–40 (2)	41–50 (3)	>50 (4)	0.004
	5.52	5.05	4.71	4.65	
Seniority date Years (number of group)	<5 (1)	6–15 (2)	16–30 (3)	>30 (4)	0.010
	5.5	4.9	4.8	4.6	

*EA – employment agreement; CE – contract employment; $\bar{x}$ – mean; p – value; Age: (1): until 30 years; (2): 31–40 years; (3): 41–50 years; (4): over 50 years; Seniority date: (1): until 5 years; (2): 6–15 years; (3): 16–30 years; 4: over 30 years

The areas impacting the choice of the workplace, which are significantly different in the compared groups in relation to the form of employment, involved friendships in the workplace (p=0.032), as well as the work nature (p=0.027). Interpersonal contacts with co-workers had a higher point value in the group of nurses working based on an employment agreement. The maximum number of points assigned to this sphere was EA_{Max}=40 and the average point value was $\overline{X}$EA=12.42. However, among contract nurses, this value was lower (CE_{Max}=20 points; $\overline{X}$CE=9.80). Average point values assigned to the component – performed work – in the compared groups were respectively: $\overline{X}$EA=10.00 and $\overline{X}$CE=11.57. Nurses working based on an employment agreement pointed out the highest validity of remuneration and guarantee of employment in the workplace, assigning to these factors the maximum value of points equal to EA_{Max}=50. In the group of contract nurses, the same situation is seen in the assessment of remuneration as a component determining the choice of the workplace – CE_{Max}=50. Both groups obtained an average point value above 15 ($\overline{X}$EA=15.44; $\overline{X}$CE=15.65). This indicates a significant

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importance of this factor in the process of choosing a future workplace in the researched group. The provided workplace as a fourth factor largely shapes the decision to accept or reject a new workplace proposal. The average value of points assigned to this aspect in the group of nurses employed based on an employment agreement was $\overline{X}$EA=10.43, while among contract nurses it was slightly higher ($\overline{X}$CE=10.80). Remuneration and job security were factors independent of the form of employment, but equally often indicated in both groups as important factors in the decision-making process regarding the future occupation (Table 4).

Table 4. Differences in the assessment of the importance of work environment components, based on the point value, determining the comfort of the nurses' work, taking into account the form of employment

Domain	Employment		P
	EA* $\overline{X}$ (min–max)	CA* $\overline{X}$ (min–max)	
Colleagues	12.42 (0–40)	9.80 (0–20)	0.031
Superiors	9.44 (0–30)	8.22 (0–20)	0.184
Contents	10.00 (0–40)	11.57 (0–30)	0.027
Conditions	8.36 (0–20)	9.37 (0–30)	0.291
Organisation and Management	6.55 (0–20)	6.96 (0–20)	0.698
Development	7.53 (0–30)	7.63 (0–15)	0.647
Salary	15.44 (0–50)	15.65 (5–50)	0.516
Assured workplace	10.43 (0–50)	10.80 (0–30)	0.416

*EA – employment agreement; CE – contract employment; $\overline{X}$ – mean; Z – U Mann–Whitney test; p – value

Discussion

Popularization of flexible forms of employment in the world has been observed since the 1980s. The problem involves positive and negative consequences of their application, which determine the employment decisions made by employing organisations [6]. The employment agreement is further specified by the Labour Code in the scope of rights and obligations and provides the employee with employee benefits, i.e. paid leave. In the case of a civil law agreement, the employment relationship

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between the hospital and the nurse is determined by parties signing an agreement. This is the most important element of this form of employment because the flexible nature of the agreement specified by the Civil Code and the lack of employee status in a person cooperating with the hospital does not provide a nurse with benefits that result from the previously mentioned employment agreement. In this case the system of remuneration, which differentiates the method of calculating the hourly rate, the remuneration for a patient (per capita) or other solutions, may be flexible. As a result, the remuneration of nurses employed based on a civil law agreement is often higher, which is a motivating factor [7].

The research aimed at comparing job satisfaction of nurses employed in hospital wards based on two different employee agreements. Among the researched group of nurses, only 18.4% were employed based on a civil law agreement. A similar frequency of this form of employment is observed in the research of D. Kunecka (2010) [8]. It is worth mentioning that the introduction of civil law agreements in Poland was met with many negative opinions. Significant changes resulting from the application of this form of profession were presented by the Polish Nursing Association on July 21, 2011 [9].

Components of the work environment that determine the satisfaction of nurses

Matthews and MacDonald-Rencz emphasise the need for a friendly environment in the workplace and the effective cooperation of medical teams [10]. The reward system and recognition among cooperating medical staff were direct and indirect factors shaping satisfaction in developing countries such as Iran. However, this dependency may not be generalised and sought for confirmation in developed countries such as Canada [11]. Poland, according to the *Human Development Index (HDI)*, is also in the group of highly developed countries (item 33, HDI= 0.865) [12].

Factors that increases job satisfaction often involves a friendly environment, contact with the supervisor and the importance of work and recognition among medical staff. The obtained results were compared with

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the data of the American Society for Human Resources Management (SHRM). It was proven that the largest differences in the level of satisfaction concern non-financial benefits, career advancement opportunities, as well as a friendly environment at the workplace [13]. Other authors, on the other hand, emphasised high degree of satisfaction with friendships [14]. In the author's research, nurses rarely indicated interpersonal problems in a friendly environment and in relations with the supervisor.

The success of the medical team is a success of the entire organisation [15]. Most of nurses believed that they could always rely on co-workers (52.7%) and most often observe mutual agreement of opinions (mostly – 56.8%) [16].

In the author's research, 52.25% of the total indicated the scale of job satisfaction equal to 5 and 6, which is confirmed by the research of other authors [17]. Therefore, the empirical evidence brought to the literature by a series of researches confirms that the image of unsatisfied nursing staff with a strong sense of professional frustration is unjustified, but one may find the research confirming a very low level of satisfaction [18]. Furthermore, more than half of the nurses change the form of employment into a civil law agreement with an increase in overall job satisfaction in this group. It is worth mentioning that employment transformation to a contract was most often related to the financial aspect (90%), the secondary role was played by the nurse's autonomy while providing medical services (10%) [19]. A different degree of dissatisfaction with work may be found in the research conducted by other authors. These data indicate approximately 50% dissatisfaction among Polish nurses and slightly lower among the population of nurses living in the United States (41%), Scotland (38%), England (36%), Canada (33%) and Germany (17%) [20].

In determining job satisfaction, remuneration is important, the amount of which may generate the appearance of negative emotions and frustration [21]. The analyses available in the literature confirm the greatest importance of employment stability in the group of women working based on an employment agreement. However, in the group of nurses employed based on civil law agreements the remuneration and organisation

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of the workplace were the largest determinants [22]. Comparing Polish and American nurses, it is confirmed that, in the group of Polish nurses, the factors that allow a higher level of satisfaction are: trust among doctors, co-financing the health education process conducted in a group of patients, the possibility of raising professional qualifications [23], and for 62.2% respondents – higher remuneration. American nurses are better paid, most do not need financial motivation. Communication with doctors and improving professional qualifications becomes more important for them [24]. Nurses show greater ability to distance themselves, which facilitates the process of treatment and saving the patient's life. Indeed, they show a lower sense of professional success and are less satisfied with their lives [25]. Contract nurses more often emphasised their satisfaction with professional development. The seniority and its importance in professional involvement are not without significance. In the group of nurses, the greatest dispersion of the results in the pursuit of professional advancement is observed among women working for 16 to 25 years, the index in this group is the lowest [26].

The highest satisfaction of nurses is most often noted in the aspect of a friendly environment ($\overline{X}$=5.41), a work content ($\overline{X}$=5.45) and the conditions present at the place of providing medical services ($\overline{X}$=4.96) [9]. The author's research confirms these relationships. The reports of Asferid A. et al. confirm almost equal percentage of satisfied (52.5%) and dissatisfied nurses (47.5%) with the general aspect of the work. The overall level of women's satisfaction showed a strong correlation with the recognition among colleagues (r=0.59), interpersonal relations with management, conditions in the work environment and with appreciation in increasing the satisfaction of nurses working in South Ethiopia. In the group of factors lowering job satisfaction, similarly as in the case of own research, medical personnel mentioned: lack of opportunities for career advancement and conducting vocational training, remuneration and other aspects of the work [27].

The average level of satisfaction with the nurses' life was $\overline{X}$=4.92 ($\overline{X}$CA=5.41; $\overline{X}$EA=4.81). According to the analysis of the degree of satis-

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faction of Polish, professionally active nurses living in three provinces (Mazowieckie, Lubelskie and Kujawsko-Pomorskie voivodeships), nurses from Lublin were placed in the middle position of the ranking in terms of average satisfaction with life [28]. These results are not confirmed in the author's research; indeed, the tendency is reversed. The Kruskal-Wallis ANOVA at the level of p=0.039 rejects the hypothesis of independence, indicating a statistically significant difference. The subjectively determined higher degree of satisfaction became the domain of younger nurses, with the increase of the age the level of satisfaction with life decreased. A similar situation is observed in the analysis of the degree of satisfaction with the length of the nurse profession, which is confirmed by other authors [29]. In contrast, on the WDI scale used in this research, Lublin nurses showed satisfaction with life at the level of X=4.92 on average. Comparing the degree of satisfaction with the world literature, Korean nurses also rated it at the average level [30]. In the group of American nurses researched using the 7-point Likert scale, the value of life satisfaction was achieved at the average level of 4.56±0.14 [31].

Managing of nurses' employment

Having verified the surveys carried out by PTP among the Member States of the European Federation of Nursing Societies in 2011, it was confirmed that the most common form of employment is an employment agreement. In a low percentage (0.01%), the Czech Republic, Luxemburg, Denmark and Germany practice contracting with nursing staff. In Hungary, Ireland, the percentage does not exceed several percent of the total nurses' population. It should be emphasised that the standards of nursing services are respected. These countries monitoring the working time ensure safety not only of a nurse or the employer, but above all a patient [9]. Monitoring working time is also the domain of Polish management of nurses employed based on civil law agreements [32]. The authors' research, illustrating the Lublin medical services market, also indicates the dominance of the employment agreement as a standard. Non-working employment is still one of the less frequently used forms of employment.

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Motivating nursing staff by managers of medical facilities determines the intensive development of medical procedures, systems and technologies that, by improving the quality of services provided, build customer loyalty and the future of healthcare facilities. Numerous restrictions on the economic aspects of the functioning and financing of medical care change significantly the standard working day for nurses [33]. Introduced new flexible forms of employment are one of the possibilities of taking up work by people who, for some reasons, may not remain in full-time employment [34]. In the case of nurses, a contractual agreement may lead to professional activation, especially when job satisfaction in this employee group is significantly higher. Higher work efficiency is the result of job satisfaction.

However, each of the signed contractual agreements is based on individual rules and defines different working conditions, which is why the research of job satisfaction in the group of nurses employed based on a civil law agreement is an extraordinarily complex phenomenon. Differences in the contractual agreements signed in Poland and abroad involve factors that significantly determine the perception of civil law agreements, as well as determine the level of job satisfaction based on these agreements.

Conclusion

- The form of employment of nurses in health facilities differentiates the level of job satisfaction. A civil law – contractual agreement compared to a standard employee agreement is a more satisfactory form of employment.
- Interpersonal contacts at work significantly impact on the level of job satisfaction, so care should be taken to ensure mutual relations of employees and take corrective actions.
- Remuneration and a friendly environment are the two most important reasons for choosing a future job in the group of researched nurses.

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Implications for Nursing Management:

- systematic assessment of the quality and accessibility of services provided and compliance with nursing care standards and procedures, implementation of activities that motivate nursing staff to improve the quality of work, improve working conditions and remuneration, and
- systematic training and specialised courses of nursing staff enabling personal development and improving professional qualifications, which increase the level of job satisfaction and the quality of services provided.

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Opinions of the Nursing Staff Employed in Selected Medical Facilities in Lodz about the Healthcare System in Poland and the Functioning of Nurses in This System

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Abstract

Introduction: *The functioning of the healthcare system in Poland is perceived negatively by both patients and healthcare professionals. What is particularly worrying, the changes implemented by the legislator, aimed at improving the functioning of medical facilities are also perceived by medical staff as unsatisfactory.*

Objective: *The main objective of the paper was to learn about opinions of the nursing staff employed in selected medical facilities in Lodz about the healthcare system in Poland and the functioning of nurses in this system*

Material and methods: *The survey was conducted from March to September 2019 in two selected medical facilities providing hospitalisation services in Lodz. When collecting empirical material, the author's own questionnaire containing 22 questions was used. 188 respondents filled in the surveys.*

Results: *The vast majority of the total number of respondents (188 people), i.e. 81.4% of respondents (153 people) assessed the functioning of the healthcare system in Poland definitely bad or rather bad. Among all respondents, the vast majority, i.e. 79.3% (149 people), were not satisfied with the changes taking place in the healthcare system regarding nursing staff.*

Conclusions: *Immediate measures should be taken to improve the opinion of nursing staff on the functioning of the healthcare system in Poland. Bad opinion on the functioning of the healthcare system may lead to a decrease in the level of job satisfaction and, consequently, to a decrease in the quality of medical services offered to patients.*

Key words: *nurse, medical staff, health care system, job satisfaction.*

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Introduction

The healthcare system in Poland struggles with a number of challenges and issues which are generated by many independent factors. Undoubtedly, one of the main factors directly shaping healthcare in our country is the level of financing of the system. Unfortunately, expenditure on healthcare in Poland is lower than in most European countries. According to the data in the Health at a Glance report: Europe 2018 of the Organization for Economic Cooperation and Development, our country in 2017 spent 2,773 Euro per year on healthcare per capita. In the discussed comparison, Switzerland (5,799 Euro) and Norway (4,653 Euro) are among the countries spending the most on healthcare, while in further positions are the Netherlands, Sweden, Ireland, Austria, Denmark and Belgium. Poland took the infamous fifth place from the end – ahead of Croatia, Latvia, Bulgaria and Romania [1].

Another challenge that undoubtedly puts a strain on the healthcare system is the ageing of Polish society. According to the reports prepared by the Central Statistical Office, the share of older people, i.e. over 65 in our society will double by 2030 and reach over 23%. The problem of the ageing population is undoubtedly a phenomenon that requires special attention, because it directly burdens the state finances, with particular regard to the sphere of expenditure on hospital management. The current system is not adapted to the growing medical needs of people aged 65 and over. This entails the problem of poverty among the elderly, which leads to saving on medicines, which in turn increases the costs of subsequent hospital treatment [2].

This situation is an additional burden for medical staff, including nurses, which in turn translates to a worse perception of the entire healthcare system and the functioning of individual professional groups in it.

The functioning of the healthcare system in Poland is perceived negatively by both patients and healthcare professionals. According to the research carried out by the Public Opinion Research Centre (CBOS), currently less than every fourth respondent (23%) is satisfied with the

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functioning and positively assesses the healthcare system in our country. From the patient's point of view, the worst assessed element of the healthcare system in Poland is the availability of visits to specialists (only 8% of positive assessments) [3]. Similarly, negative opinions about the functioning of healthcare are expressed by medical workers. What is particularly worrying, the changes implemented by the legislator, aimed at improving the functioning of medical facilities are also perceived by medical staff as unsatisfactory [4].

The perception and assessment of the functioning of the healthcare system translates into a level of satisfaction with the work of medical staff. On the other hand, job satisfaction of medical professionals is an important element in the healthcare system because it has a direct impact on the quality and safety of patient care. In addition, it was observed that low satisfaction with the work of nurses increases the risk of them leaving their professional work and changing their profession [5,6].

Research also indicates more advanced relationships between the satisfaction of nurses and such factors as: delegating tasks at work, mental support, as well as identification with the workplace [7,8,9,10,11,12]. There were also significant correlations between the organization's culture and the level of satisfaction with the work of medical staff. Work organisation and employee-oriented internal marketing have a positive impact on the level of satisfaction with the work of nurses [13].

Objective

The main objective of the paper was to learn about opinions of the nursing staff employed in selected medical facilities in Lodz about the healthcare system in Poland and the functioning of nurses in this system The purpose of the study was also to find out the differences in the opinions of nursing staff of different ages on selected elements of the healthcare system.

Material and methods

The survey was conducted from March to September 2019 in two selected medical facilities providing hospitalisation services in Lodz.

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When collecting empirical material, the author's own questionnaire was used, containing 22 questions, including 16 substantive questions and 6 metric questions. The questionnaire was intended for self-completion by respondents. The survey was voluntary and anonymous. 188 respondents submitted the surveys. The data contained in the surveys were entered in the MS Excel spreadsheet. In order to develop the collected empirical material, descriptive methods and methods of statistical inference were used. For the description of the whole group of examined and subgroups distinguished on the basis of qualitative features, structure indicators were calculated, which were expressed as a percentage [%]. To compare the incidence of particular categories of quantitative features in the analysed groups, the chi-square independence test or chi-square independence test with Yates's coefficient was used. The results for which the values of the statistics obtained in the conducted tests belonged to the critical area of the relevant distribution at the significance level p=0.05 were considered significant.

Results

In the group of 188 respondents, almost all respondents, i.e. 186 people (98.9%) were women (Table 1).

Among the total number of respondents, the most numerous group, i.e. 42.6% (80 people) were respondents aged 50 and over. Nursing staff under the age of 40 constituted 30.3% of respondents (57 people) (Table 1).

Among all respondents, almost every fifth respondent (19.7%, 37 people) declared having a master's degree. 30.3% of respondents (57 people) declared completion of additional qualification courses, while 26.1% (49 people) of respondents had a specialisation (Table 1).

The most numerous group among all respondents, i.e. 39.9% (75 people) were people with a seniority of nursing over 25 years (Table 1).

Among all respondents (188 people), the vast majority, i.e. 81.4% (153 people) assessed the functioning of the healthcare system in Poland definitely bad or rather bad (Table 2).

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Table 1. Respondents' characteristics

Gender	N	%
Woman	186	98.9
Man	2	1.1
Total	188	100.0
Age	**N**	**%**
18–29	12	6.4
30–39	45	23.9
40–49	51	27.1
50–59	60	31.9
60 years and more	20	10.7
Total	188	100.0
Education (multiple choice question)	**N**	**% of responses**
Nursing High School	41	21.8
Bachelor's degree studies	44	23.4
Master's degree studies	37	19.7
Additional qualification courses	57	30.3
Specialisations	49	26.1
Seniority	**N**	**%**
Up to 5 years	8	4.2
6–10 years	4	2.1
11–15 years	15	8.0
16–20 years	37	19.7
21–25 years	49	26.1
Over 25 years	75	39.9
Total	188	100.0

In the group of respondents up to 39 years old, the percentage of people assessing the functioning of the healthcare system as definitely bad was higher than in the group of nurses aged 40 or more, however, the observed differences in the assessment of the healthcare system functioning by age turned out to be statistically insignificant ($p>0.05$) (Table 3).

People who assessed the functioning of the healthcare system in Poland as bad (153 people) were asked to indicate the main reasons for the malfunctioning of the system. The most numerous group, i.e. 28.1% (43 people) were nurses, who indicated the low remuneration of the

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staff as the main reason. The second most frequently indicated reason for the system malfunctioning were staff shortages – this was the answer given by 24.8% of respondents (38 people) (Table 2).

Table 2. Opinions of respondents about the healthcare system in Poland

Healthcare system functioning evaluation	N	%
Definitely bad	60	31.9
Rather bad	93	49.5
Rather good	19	10.1
Definitely good	0	0.0
No opinion	16	8.5
Total	188	100.0
Main reasons for the system malfunctioning	**N**	**%**
Low staff remuneration	43	28.1
Staff shortage	38	24.8
Poor working conditions	22	14.5
Bearing the costs of self-education	21	13.7
Unclear legal regulations	14	9.1
Poor preparation for the job	6	3.9
Other	9	5.9
Total	153	100.0
Satisfaction with changes in the healthcare system regarding nursing staff	**N**	**%**
Definitely unsatisfying	47	25.0
Rather unsatisfying	102	54.3
Rather satisfying	20	10.6
Definitely satisfying	0	0.0
No opinion	19	10.1
Total	188	100.0
Opinions about personnel shortage in the healthcare system	**N**	**%**
Definitely not occurring	9	4.8
Rather not occurring	44	23.4
Rather occurring	86	45.7
Definitely occurring	27	14.4
No opinion	22	11.7
Total	188	100.0

Table 3. Evaluation of healthcare system functioning by respondents by age

Healthcare system functioning evaluation	Age of respondents									
	18–29		30–39		40–49		50–59		60 years and more	
	N	%	N	%	N	%	N	%	N	%
Definitely bad	7	58.3	20	44.4	14	27.5	13	21.7	6	30
Rather bad	2	16.7	16	35.6	29	56.9	38	63.3	8	40
Rather good	3	25	6	13.3	2	3.9	5	8.3	3	15
Definitely good	0	0	0	0.0	0	0.0	0	0.0	0	0
No opinion	0	0	3	6.7	6	11.8	4	6.7	3	15
Total	12	100	45	100	51	100	60	100	20	100
Chi^2=23,536; p>0,05										

Table 4. Satisfaction with changes in the healthcare system regarding nursing staff by age

Satisfaction with changes in the healthcare system regarding nursing staff	Age of respondents									
	18–29 years		30–39 years		40–49 years		50–59 years		60 years and more	
	N	%	N	%	N	%	N	%	N	%
Definitely unsatisfying	4	33.4	18	40.0	14	27.5	9	15.0	2	10.0
Rather unsatisfying	3	25.0	25	55.6	26	51.0	41	68.3	7	35.0
Rather satisfying	4	33.3	2	4.4	4	7.8	7	11.7	3	15.0
Definitely satisfying	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
No opinion	1	8.3	0	0.0	7	13.7	3	5.0	8	40.0
Total	12	100	45	100	51	100	60	100	20	100
Chi^2=43.51; p>0.01										

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Among all respondents, the vast majority, i.e. 79.3% (149 people), were not satisfied with the changes taking place in the healthcare system regarding nursing staff (table 2). The highest percentage (95.6%) of people who were not satisfied with the changes in the healthcare system regarding nursing staff was observed among nurses aged 30-39. The differences in the assessment of satisfaction with changes in the health care system regarding nursing staff by age turned out to be statistically significant – $p<0.001$ (Table 4).

Among all respondents (188 people), the largest group, i.e. 45.7% (86 people) were respondents who claimed that staff shortages rather occur in the health care system in Poland, while 14.4% of respondents said that the mentioned shortage definitely occurs (Table 2).

The vast majority, i.e. 80.0% (152 people) of nurses surveyed said that they were rather interested in the changes taking place in the health care system in Poland. Lack of interest was declared by 3.3% of respondents (6 people) (Table 5).

The respondents most often mentioned the Internet as the main source of information on changes in the healthcare system – this was the answer given by 30.9% of respondents (58 people) (Table 5).

In the group of all respondents (188 people), the vast majority of respondents, i.e. 72.9% (137 people) were dissatisfied with the amount of remuneration received (Table 6).

Satisfaction with the received remuneration was higher among older respondents. Among the respondents aged 50 and over (80 people), the percentage of satisfied with the remuneration was 47.5% (38 people), while among younger respondents the percentage of satisfied with the received salary was 4.6% (5 people). The differences turned out to be statistically significant – $p>0.0001$ (Table 7).

When asked about the level of satisfaction with the nursing staff education system, the majority (52.7%, i.e. 99 people) answered that they were not satisfied with the nursing staff education process. A significant proportion of respondents, i.e. 22.3% (42 people) had no opinion on the system of nurse education in Poland (Table 6).

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Table 5. Respondents' interest in changes in healthcare

Respondents' interest in changes in healthcare system	N	%
I am definitely not interested	2	1.1
I am rather not interested	4	2.1
I am rather interested	152	80.8
I am definitely interested	24	12.8
No opinion	6	3.2
Total	188	100.0
Respondents' main sources of obtaining information about changes in the healthcare system	**N**	**%**
Workplace	47	25.0
Press, radio, TV	54	28.7
Internet	58	30.9
Family, friends	29	15.4
Total	188	100.0

Table 6. Respondents' satisfaction with selected elements of work as a nurse

Respondents' satisfaction with remuneration	N	%
Definitely unsatisfied	62	33.0
Rather unsatisfied	75	39.9
Rather satisfied	36	19.1
Definitely satisfied	2	1.1
No opinion	13	6.9
Total	188	100.0
Respondents' satisfaction with education system for nursing staff	**N**	**%**
Definitely unsatisfied	39	20.8
Rather unsatisfied	60	31.9
Rather satisfied	45	23.9
Definitely satisfied	2	1.1
No opinion	42	22.3
Total	188	100.0

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Table 7. Evaluation of respondents' satisfaction with remuneration by age

Respondents' satisfaction with remuneration	Age of respondents									
	18–29		30–39		40–49		50–59		60 years and more	
	N	%	N	%	N	%	N	%	N	%
Definitely satisfied	5	41.7	26	57.8	15	29.4	15	25.0	1	5
Rather unsatisfied	2	16.7	17	37.8	30	58.8	23	38.3	3	15
Rather satisfied	2	16.7	0	0.0	3	5.9	20	33.3	11	55
Definitely satisfied	0	0	0	0.0	0	0.0	0	0.0	2	10
No opinion	3	25	2	4.4	3	5.9	2	3.3	3	15
Total	12	100	45	100	51	100	60	100	20	100
Chi^2= 83,193; p<0,0001										

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Discussion

Nursing staff opinions on the functioning of the healthcare system in Poland were mostly negative. Nurses' main reason for dissatisfaction is too low remuneration. What is particularly worrying, respondents were also not satisfied with the changes taking place in the healthcare system in recent years. Lack of satisfaction with the introduced changes was significantly higher among younger nurses. The observed dependencies are extremely worrying because a bad assessment of the functioning of the health care system and dissatisfaction with the received remuneration are significant risk factors for low job satisfaction, which in turn can affect the quality of medical care and patient safety. As shown by studies conducted by other authors, a high level of satisfaction of nurses from work correlates with a higher quality of services provided, especially in the assessment of patients. On the other hand, low job satisfaction reduces the safety and satisfaction of patients with medical care [14,15]. Scientific evidence also indicates that higher levels of occupational burnout among nurses due to work stress are associated with lower levels of job satisfaction [16]. It has also been observed that nurses with a high level of job satisfaction are more effective in providing high quality medical care because they more often take patient satisfaction as the main goal of care [17]. The presented situation indicates the need to take immediate action to increase the satisfaction of nurses with their work. As the research results and experience of other countries show that internal organisational solutions, such as ensuring the possibility of personal development, introduction of clear management methods, division of responsibilities and scopes of responsibilities have a positive impact on job satisfaction and can be a counterweight to negative factors that can be modified only at the central level [18].

Another problem that the Polish healthcare system is facing is staff shortages, which was also observed by the nurses participating in this study. Half of the respondents declared that they meet at work with a shortage of staff. In addition, we are observing a regular increase in the

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average age of nurses in Poland. Currently, the average age has exceeded 52 years, which clearly indicates the lack of replacement of generations in this professional group. Failure to take action to make the nursing profession more attractive may lead to radical staff shortages and limit the possibility of providing adequate care to patients. Implementation of solutions aimed at counteracting these adverse trends should be undertaken already at the stage of nursing studies. It is true that the process of educating nurses in Poland in the recent years has positively evolved. We observe the expansion of the scope of competence of nurses by the legislator, which aims to increase autonomy of this professional group among medical professions [19]. However, despite the above arguments, most of the respondents participating in this study were dissatisfied with the processes of training nursing staff in our country.

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Conclusions

1. Immediate measures should be taken to improve the opinion of nursing staff on the functioning of the healthcare system in Poland. Bad opinion on the functioning of the healthcare system may lead to a decrease in the level of job satisfaction and, consequently, to a decrease in the quality of medical services offered to patients.
2. The low satisfaction with remuneration, observed among the majority of respondents, suggests that actions taken in the first place in this area may significantly contribute to a better assessment of the health care system functioning and the increase of satisfaction with the work of nursing staff.
3. Over half of the respondents poorly assessed the nursing staff education system, which suggests the need to take actions to improve this process by adapting it to the real needs of this group of medical personnel.
4. There is a need to conduct further, systematic research monitoring the opinions of nursing staff about the healthcare system and the functioning of nurses in this system in order to take appropriate actions to increase job satisfaction of this professional group.

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Knowledge of Social Workers in the Field of Smoking and Anti-smoking Counseling in Social Assistance Centers

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Abstract

Introduction: *Tobacco in any form causes death and disease to millions of people. Cigarette smoking causes 8 million deaths worldwide every year, of which 7 million related to active smoking and 1.2 million to passive smoking. The prevalence of smoking varies in socioeconomic groups, as well as among different professions. People with low socioeconomic status have a higher incidence of smoking than the average in the general population. At the same time, socioeconomically disadvantaged populations may have difficulties in accessing health care and getting anti-smoking counseling.*

Aim: *The aim of the study was to assess the prevalence of active and passive smoking among social workers. The knowledge of social workers about harmful effects of tobacco products was also examined, and the frequency of undertaking tobacco control measures by employees of municipal social assistance centers among their pupils was assessed.*

Material and methods: *The study covered employees of social welfare centers in the Piotrków county. The survey was carried out between October 2015 and February 2016. The research tool was a questionnaire.*

Results: *The study involved 39 female social workers from communal social assistance centers of the Piotrków poviat. It was found that 36% of respondents have ever smoked, 64% have never smoked, and 21% have continued smoking. Over 51% of respondents were exposed to secondhand smoke, most often in a public place. Most respondents believe that they have knowledge about the possibilities of support and advice for social assistance clients planning to quit smoking, at an average level (69.2%). Over a half (54%) say they have the knowledge and skills to support clients in giving up smoking and give advice. 87% of social workers do not receive support from the employer and haven't been trained in tobacco control counseling. The majority of respondents (62%) indicated the lack of anti-smoking policy in the social assistance center in which they work.*

Conclusions: *Smoking, as well as exposure to passive smoking, is still a significant problem, also among social workers. Social workers are a special professional group, their attitudes towards smoking can significantly shape*

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health behaviors among those under their care. However, this potential is not used.

Key words: *social workers, social assistance, smoking tobacco, tobacco control.*

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Introduction

Tobacco in any form causes death and diseases to millions of people. Tobacco use as well as exposure to environmental tobacco smoke are one of the most possible causes of death and disability in the world [1]. Most smoking-related deaths are caused by cancer (including lung cancer), cardiovascular disease (including coronary heart disease), and respiratory disease (including chronic obstructive pulmonary disease – COPD) [2]. Cigarette smoking causes 8 million deaths worldwide every year, of which 1.2 million related to passive smoking and 7 million to active smoking. The WHO (World Health Organization) estimates that in 2018 around 26% of women and around 37% of men smoked cigarettes in Poland, WHO forecasts that in 2025 it will be around 16% of women and 26% of men [3]. In 2019 over one-fifth of Poles admitted to habitual (daily) smoking, there is a downward trend in the number of people who smoke heavily. Studies show that heavy smokers are more often men than women (24% versus 18%) [4]. Estimated data on tobacco smokers put Poland slightly above the average European level. It is worrying that the downward trend in the percentage of smokers observed over the past few years has been halted [5].

Tobacco-related diseases generate high health and economic costs in Poland, contributing to the reduction of the country's development potential. The prevalence of smoking varies in socioeconomic groups, as well as among employees of various professions [6]. In addition, a high percentage of heavy smokers was observed among disadvantaged people [7]. Populations at a disadvantageous socioeconomic situation may have difficulties in accessing health care and getting anti-smoking counseling.

Social welfare centers in Poland as institutions of social policy of the state, are to meet basic social needs, enabling individuals and families to overcome difficult life situations that they are unable to overcome by using their own powers, resources, and possibilities. These tasks are carried out by two and a half thousand centers operating in Poland [8]. The

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knowledge, skills, and above all, authority and frequent contacts with social charges held by social workers may play an important role in tobacco control counseling.

The aim of the study was to assess the prevalence of active and passive smoking among social workers. The knowledge about the harmfulness of smoking was also examined and the frequency of undertaking tobacco control measures by employees of communal social assistance centers among their pupils was assessed.

Materials and methods

A detailed description of the study area was published elsewhere [9,10]. This cross-sectional study was conducted between October 2015 and February 2016. The study covered all social workers of communal social assistance centers from the Piotrków poviat who expressed written consent to participate in the study. The study was approved by the Bioethics Committee of the Medical University of Lodz (identification code: RNN/243/15/KE) and received the consent of the head of this unit.

The research tool was a questionnaire that was adapted from the multicenter national population health study (WOBASZ) [11]. Direct interviews were conducted by qualified interviewers in communal social assistance centers of the Piotrków poviat.

The questionnaire included the following socio-demographic data: age, gender, years of employment in the current position of a social worker. The questionnaire consisted of three sections: section A – smoking behavior, section B – knowledge and beliefs about smoking, section C – organizational policy regarding smoking cessation. The analysis created two categories of smoking status: smokers (current daily smokers – smokers of one or more cigarettes a day during the last 30 days and occasional smokers – smokers less frequently than daily) and non-smokers. The category of non-smokers included non-smokers and former smokers.

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Results

The study involved 39 social workers from communal social assistance centers of Piotrków poviat. The most numerous (49%) group were social workers in the 31–40 age group, while the least numerous (15%) aged 41–50. 100% of the surveyed population were women, most of them (59%) worked as a social worker for 10 years and more, the working group up to one year was 12.8%. The detailed characteristics of the subjects are given in Table 1.

It was found that 36% of women surveyed had ever smoked, 64% had never smoked, and 21% continued smoking. Most social workers surveyed (37.5%) have been smoking cigarettes for less than 10 years. Most respondents (37.5%) smoke 2–5 cigarettes a day, every fourth person reported that they smoke one cigarette a day. No person smokes more than 21 cigarettes a day. Half of the current smokers light their first cigarette of the day just after waking up (up to 30 minutes). Half of the current smokers have tried to quit smoking in the last 12 months. To the question: "please estimate what percentage of employees of your facility smokes cigarettes" most often (59%) the respondents gave up to 20% of social workers smoking cigarettes, none of them indicated 75% or more.

Over 51.3% of respondents have been exposed to secondhand smoke in the last 30 days, most often in a public place – restaurant, pub, bus stop (25.6%). Only 15.4% indicated exposure to secondhand smoke in the workplace. As much as 89.8% of respondents expressed support for the ban on smoking in public places (Table 1).

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Table 1. Characteristics of the studied population of women (N=39)

Variable	N	%
Age (years)		
20–30	0	0.0
31–40	19	49.0
41–50	6	15.0
51–60	13	33.0
≥61	0	0.0
No data	1	3.0
Years of work in the current position		
≤1 year	5	12.8
2–9	10	25.6
≥10	23	59.0
No data	1	2.6
Currently smoking cigarettes		
Yes	8	21.0
No	31	79.0
People who have ever smoked cigarettes		
Yes	14	36.0
No	25	64.0
Number of cigarettes smoked during the day		
1 cigarette a day	2	25.0
2–5 cigarettes a day	3	37.5
6–10 cigarettes a day	1	12.5
11–20 cigarettes a day	1	12.5
More than 21 cigarettes a day	0	0.0
No data	1	12.5
Years of smoking, for current smokers		
≤10	3	37.5
11–20	1	12.5
21–30	1	12.5
≥30	1	12.5
No data	2	25.0
Lighting up the first cigarette after waking up (to 30 minutes)		
Never smoked	25	64.0
Doesn't smoke at present	6	15.0
Yes	1	12.5
No	4	50.0
No data	3	37.5
She's been trying to quit smoking in the last 12 months		
Never smoked	25	64.0
Doesn't smoke at present	6	15.0
Yes	4	50.0
No	3	37.5
No data	1	12.5

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Exposure to environmental tobacco smoke during the last month		
Yes, at home	4	10.3
Yes, in the workplace	6	15.4
Yes, in a public place	10	25.6
No	19	48.7
Percentage of social workers smoking cigarettes		
≤20%	23	59.0
21%–50%	4	10.2
51%–74%	1	2.6
≥75%	0	0.0
I don't know	7	18.0
Nobody smokes	4	10.2
Support for no smoking in public places		
Yes	35	89.8
No	2	5.1
No opinion	2	5.1
The number of clients visiting 1 social worker during the working week		
≤19 people	8	20.5
20–40 people	25	64.1
≥41 people	2	5.1
No data	4	10.3
Average length of clients supervised by a social worker		
≤1 year	6	15.4
2–10 years	16	41.0
>10 years	7	18.0
Depending on the customer's situation	3	7.7
No data	7	17.9
The frequency of employee meetings with clients		
Daily	17	43.6
A few times a week	3	7.7
Several times a month	10	25.6
Depending on the needs	6	15.4
No data	3	7.7

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The analysis taking into account smoking status showed that in the group of social workers who declared their support for smoking bans in public places, the majority were non-smokers (93%). Smokers accounted for only 78%.

Most of the respondents answered questions about knowledge about smoking, confirming their knowledge of the subject (Table 2). 61.5% of respondents agreed that tobacco smoke has over 4000 different chemical compounds, of which several dozen are carcinogenic, 41% indicated that nicotine is the only addictive substance in tobacco smoke. Most (82.1%) believe that smoking is one of the more serious risk factors for coronary heart disease with more severe complications, including fatal myocardial infarction, and 64.1% for chronic obstructive pulmonary disease.

Table 2. Knowledge and beliefs of social workers about smoking (N=39)

Answer indicated	N	%
There is over 4000 different chemical compounds in tobacco smoke, of which several dozen are carcinogenic		
Yes	24	61.5
No	0	0.0
I don't know	15	38.5
Nicotine is the only addictive substance in tobacco smoke		
Yes	16	41.0
No	8	20.5
I don't know	15	38.5
Passive smokers are exposed to higher levels of harmful substances		
Yes	26	66.7
No	3	7.7
I don't know	10	25.6
Lung cancer occurs almost exclusively in smokers and people exposed to passive smoking		
Yes	5	12.8
No	27	69.2
I don't know	7	18.0

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Smoking is one of the more serious risk factors for coronary heart disease with more serious complications, including fatal heart attack		
Yes	32	82.1
No	0	0.0
I don't know	7	17.9
„Tobacco face" is a gray, earthy face, with numerous broken vessels, thin, dry and wrinkled		
Yes	26	66.7
No	5	12.8
I don't know	8	20.5
The most common tobacco disease is chronic obstructive pulmonary disease		
Yes	25	64.1
No	2	5.1
I don't know	12	30.8
In men, smoking can cause potency problems. In women, smoking reduces fertility and speeds up menopause		
Yes	21	53.8
No	2	5.1
I don't know	16	41.1
Smoking causes more deaths than: AIDS, accidents, drugs, killings and suicides combined		
Yes	7	18.0
No	10	25.6
I don't know	22	56.4
Even staying in a room with a smoker for a short time can cause symptoms similar to those of allergies		
Yes	17	43.6
No	1	2.6
I don't know	21	53.8
Assessment of the level of knowledge about the harmfulness of smoking		
Very low	0	0.0
Low	0	0.0
Average	29	74.4
High	7	17.9
Very high	3	7.7
Assessment of the level of knowledge on the possibilities of support and advice for social assistance clients planning to quit smoking		
Very low	0	0.0
Low	6	15.4
Average	27	69.2
High	6	15.4
Very high	0	0.0

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Problem areas about smoking that I want to expand		
Harm of smoking – Yes	6	15.4
Support for people addicted to nicotine (emotional support, counseling) – Yes	16	41.0
Methods of treatment, nicotine replacement therapy – Yes	19	48.7
I wouldn't like to broaden my knowledge on this subject	8	20.5
Attitude to being in the presence of smokers		
Yes	8	20.5
No	31	79.5

Also, more than half (53.8%) of the respondents agreed with the statement that smoking may cause potency disorders in men, while in women may reduce fertility and accelerate menopause. As many as 66.7% of respondents thought that passive smokers are exposed to a higher concentration of harmful substances.

In the group of social workers, 74.4% assessed their level of knowledge about the harmfulness of smoking as average, while as high and very high 17.9% and 7.7% respectively. The majority of respondents believe that they have knowledge of the possibility of support and advice of social assistance clients planning to quit smoking, the average level (69.2%), at a high level (15.4%). Almost half (48.7%) would like to broaden their knowledge about treatment methods and nicotine replacement therapy, 41% about the support of nicotine addicts (emotional support, counseling). Only 20.5% would not like to broaden their knowledge about smoking.

In the group of social workers, 79.5% of respondents admitted a negative attitude to being in the presence of smokers (both smokers and non-smokers). When asked about the organizational policy on smoking cessation, the majority (61.5%) said that welfare institutions should not pay much attention to cigarette smoking because they have more important priorities (Table 3). 46.2% of respondents believe that smoking is an individual matter and the fact of whether clients smoke or not should not interest social workers. Almost half (48.7%) of social workers are in favor of offering smoking cessation to clients should be part of the standard

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care of any social welfare institution. 43.6% supported that the social assistance program should have more space devoted to quitting nicotine addiction.

Table 3. Opinions of social workers on organizational policy regarding smoking cessation (N=39)

Answer indicated	N	%
Social welfare clients who are addicted to nicotine should receive help and support in stopping smoking from the Social Welfare Center		
Yes	16	41.0
No	16	41.0
I don't know	7	18.0
Smoking is an individual matter and the fact whether our clients smoke or not should not interest us		
Yes	18	46.2
No	16	41.0
I don't know	5	12.8
My clients who smoke are not interested in quitting		
Yes	21	53.9
No	8	20.5
I don't know	10	25.6
Offering support to clients in stopping smoking should be part of the standard care of every Welfare Center		
Yes	19	48.7
No	15	38.5
I don't know	5	12.8
My clients are not able to quit smoking		
Yes	14	35.9
No	9	23.1
I don't know	16	41.0
There should be more room in the social welfare program for quitting nicotine addiction		
Yes	17	43.6
No	15	38.5
I don't know	7	17.9
I'm happy to provide advice and support to clients regarding smoking cessation		
Yes	21	53.8
No	11	28.2
I don't know	7	18.0

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Sometimes it is useful when an employee smokes with his client to build trust and relationship		
Yes	0	0.0
No	35	89.7
I don't know	4	10.3
I have the knowledge and skills to support clients in giving up smoking and give them advice		
Yes	21	53.8
No	7	18.0
I don't know	11	28.2
My clients believe that the advantages of smoking are more than its disadvantages		
Yes	8	20.5
No	18	46.2
I don't know	13	33.3
The number of smokers among my clients is increasing		
Yes	7	17.9
No	20	51.3
I don't know	12	30.8
Social Welfare facilities should not pay much attention to cigarette smoking because they have more important priorities		
Yes	24	61.5
No	10	25.7
I don't know	5	12.8
I receive support and have been trained in providing help and advice to smokers		
Yes	0	0.0
No	34	87.2
I don't know	5	12.8

The majority (53.8%) say they have the knowledge and skills to support clients in giving up smoking and to give them advice. 87.2% of social workers do not receive support from the employer and have not been trained in providing help and advice to smokers.

The majority of respondents (61.5%) indicated the lack of anti-smoking policy in the social assistance center in which they work (Table 4). All respondents indicated that they didn't keep a register (status) of smokers among the clients of the center. None of the respondents indicated that special areas for smokers were designated at the center, the majority (61.5%) indicated that the clients of the center smoke only outside

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the center. All smoking social workers have indicated that smoking is not allowed inside the rooms or facilities in the centers where they work.

Table 4. Characteristics of the organizational policy of the social assistance center in the area of smoking cessation

Variable	N	%
Conducting tobacco control policy in the center		
Yes	9	23.1
No	24	61.5
I don't know	6	15.4
No smoking inside the rooms and the facility		
Yes	9	100.0
No	0	0.0
Not applicable	30	-
No smoking in company cars		
Yes	2	22.2
No	7	77.8
Not applicable	30	-
No smoking employees with clients		
Yes	1	11.1
No	8	88.9
Not applicable	30	-
No smoking on home visits		
Yes	2	22.2
No	7	77.8
Not applicable	30	-
No smoking clients at meetings		
Yes	1	11.1
No	8	88.9
Not applicable	30	-
Customer support for smoking cessation		
Yes	0	0.0
No	9	100.0
Not applicable	30	-
Customer smoking areas at the resort		
Anywhere outside	15	38.5
Special areas designated for smokers	0	0.0
Only outside the resort	24	61.5
Keeping a register (status) of smokers among the clients of the center		
Yes	0	0.0
No	39	100.0

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Percentage of customers who smoke		
≤20%	8	20.5
21%–50%	18	46.2
51%–74%	10	25.6
≥75%	3	7.7
Nobody smokes	0	0.0
On-site training or other forms of assistance to employees regarding various forms of support that can be offered to social assistance clients		
Yes	7	17.9
No	29	74.4
I don't know	3	7.7
Providing support for employees smoking tobacco		
Yes	1	2.6
No	35	89.7
I don't know	3	7.7
Implementation of other health-promoting programs in the center		
Yes	15	38.5
No	18	46.1
I don't know	6	15.4

To the question: "please estimate what percentage of your facility's customers smoke cigarettes" most often (46.2%) the respondents gave 21–50% of customers smoking cigarettes. According to the respondents (89.7%), social welfare facilities don't provide support for employees smoking tobacco. As many as 74.4% of respondents claim that there is no training in the center or other forms of assistance for employees regarding various forms of support that can be offered to social assistance clients. All current smokers indicated that the anti-smoking activities in their facility do not relate to customer support in quitting smoking.

Only 38.5% of respondents indicated that other health-oriented programs are being implemented at the facilities, while 15.4% had no knowledge in this area.

The results of the survey showed that the number of clients visiting a social worker during a working week is usually 20 to 40 people (64.1%), the average duration of clients being in the care of a social worker is 2 to 10 years (41%), the frequency of employee meetings usually with clients every day (43.6% of respondents) (Table 1).

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Discussion

There are currently no epidemiological data regarding the prevalence of cigarette use among social workers in Poland. Our study showed that 21% of women surveyed currently smoke and 36% have ever smoked. 21% of the current smoking percentage was only slightly lower than the percentage for the general population in the WHO report for adults of 23.2% [12]. In the multicenter national population health study (WOBASZ, 2014), 29.9% of men and 20.5% of women reported regular smoking [13]. Our survey results are lower than GATS (Global Adult Tobacco Survey) results, which show that 30.3% of Poles are current smokers (daily or occasional) when it comes to smoking in rural areas, 25.4% of rural residents smoked tobacco every day (17.9% women and 32.5% men) [14,15]. The results also differ from the last Polish cross-sectional study from 2019, where 21.0% of participants declared daily smoking; but 1.3% of participants are occasional smokers and 10.7% are former smokers [16]. The latest results of National Institute of Public Health – National Institute of Hygiene (NIZP-PZH) regarding people regularly using only tobacco products – indicate no change in the prevalence of smoking in men (28.0% in 2014 and 27.8% in 2018) and a certain decrease in women (17.2% in 2014 and 15.4% in 2018) [5].

Discrepancies have been found in the number of cigarettes smoked per day. In our study, 37.5% of respondents smoke 2–5 cigarettes a day, every fourth person smokes one cigarette a day. In the GATS study, the average number of cigarettes smoked per day among everyday smokers was 18 pieces for men and 16 pieces for women [14], in other Polish studies, on average, about 16 cigarettes smoked daily by men and 13 by women [17]. In the latest cross-sectional study, participants who smoked daily smoked an average of 15 cigarettes a day, without significant differences ($p>0.05$) between men and women [16,18]. There are more “mild” smokers (up to 13 cigarettes smoked per day) among women than men [18]

The results of a survey among social workers in the Piotrków county indicate that only 12.5% of current smokers smoke their first ciga-

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rette during the day immediately after waking up (up to 30 minutes). The results are slightly lower than in the GATS study, where 60.1% of current daily smokers smoke their first cigarette within the first 30 minutes after waking up [14]. Our survey results show that 50% of current smokers have tried to quit smoking in the last 12 months. These results are divergent compared to GATS wherein a group of smokers over a third (35.1%) has attempted to quit smoking in the last 12 months. Only 15.4% of our respondents indicated exposure to secondhand smoke in the workplace.

This may be the result of respecting the ban on smoking in public places, including social welfare facilities [19]. These results are divergent with the GATS study where one in three respondents (33.6%) claimed that during the past 30 days they were exposed to secondhand smoke in a closed room where they work. Exposure to tobacco smoke was the rarest in state office buildings (10.0%) [14]. As much as 89.8% of respondents to our survey expressed support for the ban on smoking in public places. These results are higher than in the GATS survey, where the level of approval for the introduction of a smoking ban for state office buildings was 82.4% [14].

Social workers can play a role in reducing the incidence of smoking among those under their care. They have the opportunity to have a great impact on the clients of social welfare centers due to their proximity to the target population [20,21,22]. Research shows that social workers are seen as a trusted source of advice and support who can offer more personalized support [23,24,25,26]. However, social welfare facilities in Poland don't participate in tobacco control activities, and when they do, they do so only to a small extent, which was also confirmed by our study.

Almost half (48.7%) of respondents in our study are in favor of offering support to clients to stop smoking should be part of the standard care of every social welfare institution. In the study by Bonevski et al. 93% of employees of non-governmental social organizations, indicated that they had an organizational policy regarding smoking, but often it didn't include support in quitting smoking [27].

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The organization and working conditions of social workers in Poland do not fully allow effective implementation of their statutory tasks in the field of social assistance. The number of owners and commissioned tasks in this area exceeds the human and financial capabilities of social assistance centers, which results in the provision of assistance at the basic level [8]. Some programs in Australia and the United States have partnered with NGOs (non-governmental organizations) to reach disadvantaged smokers. Services for the homeless, people with drug and alcohol problems, and people with severe mental illness have a wide reach in disadvantaged populations [27].

In addition, there is a lack of data on the preparation of staff in social welfare institutions to join tobacco control programs. The results of our study showed that there are no trainings or other forms of support for employees regarding various forms of support (74.4%) that can be offered to those under social care. Similar results were obtained in Australia, where in most cases respondents indicated that in the 12 months preceding the survey, employees of their services were not trained in organizational care in quitting smoking (80%) or resources (53%) to help support clients in fight against smoking [27].

Every second respondent claims to have the knowledge and skills to support clients in giving up smoking and give them advice. It should be remembered that clients of social welfare centers are people in a disadvantaged socio-economic situation who may have difficulties in accessing health care and getting advice on smoking cessation. An important role in helping and supporting in quitting smoking could be played by social workers who often have contact with their clients every day.

To sum up, the results of this study are consistent with similar studies [27,28,29], which show that social welfare facilities have the potential as a place to reach a large number of smokers experiencing socio-economic problems.

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Conclusions

Smoking, as well as exposure to passive smoking, is still a significant problem, also among social workers. Employees of social assistance centers constitute a special professional group, their attitudes towards smoking can significantly shape the health behaviors of those under their care. Even minimal intervention or advice on the harmfulness of smoking and smoking cessation methods can result in attempts to quit smoking and lead to effective quitting among social welfare clients. There is a need to identify effective smoking cessation interventions in disadvantaged populations.

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Suicidal Behavior in the Opinion of Students of Lodz Universities

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Abstract

Introduction: *The phenomenon of suicide has evolved over the centuries. Motives and methods of suicidal acts have changed. However, disputes about the moral issue of suicide perception remain the same – from glorifying freedom to restrictive condemnation of suicidal acts.*

Aim: *The main purpose of the work was to assess the knowledge and perception of suicidal behavior among randomly selected students of Lodz universities.*

Material and methods: *The study involved 301 students of Lodz universities (53.2% students of non-medical universities; 46.8% students of medical universities). The survey was conducted in January 2019 using a survey questionnaire, which contained 20 relevant questions and 4 metric questions. The analysis of collected data was performed on the basis of statistical methods such as the Yule coefficient and independence Chi-Square test of independence.*

Results: *79.4% of respondents were women. The average age of respondents was 22.7 years. Most often, the respondents identified the suicide attempt with a cry for help (43.2%, more often women, $p<0.05$), while suicide with escape from problems (52.5%). 68.8% of respondents indicated mental illness and depression as the most common factor determining suicide. 52.8% (significantly more often students of non-medical universities) rightly stated that women commit suicide attempts more often. 85.0% of the respondents indicated men as perpetrators of suicide bombings that resulted in death. 74.8% of respondents believed that suicides committed people with low self-esteem and excessive self-criticism. The majority of respondents (79.1%) believed that everyone has the right to make a decision about taking their own life, and they were more often city residents. 89.7% of respondents declared that if they witnessed a suicide attempt, they would try to prevent it (more often women, $p<0.05$), and 82.7% also declared willingness to help a person who survived the suicide bombing. Most respondents (53.8%) expressed the view that information on suicide cases should not be publicized by the mass media.*

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Conclusions: *The level of knowledge of the respondents about suicidal behavior was not satisfactory. However, they showed a high level of sensitivity and acceptance towards potential suicides. There is a need for education regarding accessibility of help for people with suicidal thoughts.*
Key words: *suicidal behavior, suicide, students, Poland.*

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Introduction

Despite the fact that the phenomenon of suicide is studied mainly from the perspective of the present day, it is not a new phenomenon. It has evolved over the centuries – the motives or ways of carrying out suicidal acts, among other, have changed. However, disputes about the moral issue of perception of suicide remain unchanged, where on one side we are dealing with the glorification of freedom, and on the other the absolute and restrictive condemnation of suicidal acts [1].

Due to the fact that suicides are of interest to many scientific fields, it is very difficult to develop one, universal and coherent definition. The first attempt to define this phenomenon was made by the sociologist – Durkheim – who in 1979 described suicide as "any death case resulting from direct or indirect, negative or positive action carried out by the victim himself, who knows what the result will be" [2]. This definition, although most often cited, has its drawbacks. First of all, it is very broad and imprecise. One of the most important definitions presented in the literature on the subject can also include those developed by Stengel or Shneidman [3,4]. Regarding the very definition of the phenomenon, the World Health Organization (WHO) has tidied it up over the years and defined suicide as "a fatal act which the deceased, knowingly and expecting such effect, planned and carried out on their own in order to cause the changes desired" [5]. It should be emphasized, however, that suicide is not only an act of ending one's life, but a very complex process that can last for years [6]. The first link in this process is most often suicidal thoughts, i.e. any consideration of one's own death, imagining an act of suicide or attempted suicide, thinking and making plans about the circumstances (i.e. place, time, manner) accompanying such acts, as well as fantasizing about taking away life. The next links may be suicide and parasamicide gestures. These are usually demonstrative behaviors that do not lead to the end of life, but in most cases are aimed at causing pressure or a specific reaction of the environment. Characteristic of suicidal gestures and parasamicides is the choice of circumstances that provide many witnesses and allow

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quick help to the person making such a gesture. The next link leading to committing suicide may be self-harm excluding the certainty of survival – mainly a suicide attempt commonly known as "unsuccessful suicide" or "attempted suicide". An attempted suicide is a deliberate action taken to end one's life. It found its place in the International Statistical Classification of Diseases and Health Problems ICD-10 in the categories "paranormal encounters" (codes X60-X69) and "intentional self-harm" (codes X70-X84), depending on the self-injury method used [7]. The final link in the chain of self-destruction is self-harm that directly results in death – the so-called suicides committed [8].

There is a wide range of motives and factors influencing the act of suicide. We are not able to analyze all these factors and reconstruct the psychological profile of every suicide victim. This is connected with barriers regarding conducting psychological interviews with people after a suicide attempt and difficulties in obtaining information on the life of a person who died as a result of suicide. However, there are some leading factors. First of all, mental disorders and illnesses should be included. Suicides with multiple psychiatric disorders or their symptoms are in many cases undergoing psychiatric treatment, which has presumably been ineffective. Their inclination to such actions, however, does not focus only on psychiatric disorders such as depression and schizophrenia. Usually, factors overlap and emphasis should be placed on health and social problems in general [9].

In Poland, in the years 2007–2014 an upward trend in suicidal behavior is observed. Between 2014 and 2016, there is a slight decrease in the number of reported suicidal behaviors, which does not change the fact that the data are still disturbing [10]. According to the World Health Organization, in 2016 the severe suicide rate for European countries was on average 15.4 per 100.000 residents. Lithuania had the highest value (31.9) – more than double the index for all of Europe. High rates were also observed in Belarus (26.2), Ukraine (22.4) and Latvia (21.2). The lowest suicide rates were recorded in Greece (5.0), Albania (6.3) and Malta (7.5) [11].

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Suicidal behavior is a global problem, so it is desirable to take action to prevent suicidal attacks. Due to its complexity and diversity, it is an extremely difficult problem in the field of prevention planning. However, taken actions should be aimed at reducing risk factors and strengthening protective factors, which should constitute a very important element of prevention in this respect, especially in the population of young people, creating appropriate attitudes in them.

The aim of the study was to assess knowledge and perception of suicidal behavior by selected students of Lodz universities based on the results of own study.

Material and methods

The survey was conducted in January 2019 among students of universities in Lodz in the form of an online survey. The study involved 141 students of medical universities and 160 students of non-medical universities, i.e. a total of 301 people randomly selected for the study. The criterion for participation in the study was the student status of one of the universities in Lodz. Participation in the study was anonymous and voluntary. Each of the study participants was informed about the possibility of refusing to complete the questionnaire and withdrawing from completing it at any stage of the study. The respondents were also informed that the results obtained during the study will be used only for scientific purposes and will be presented in aggregate. For statistical analysis, measures were used in the field of descriptive statistics – arithmetic mean, standard deviation, median, modal and structure indicators as well as measures in the field of analytical statistics – independence test $\chi 2$ (Chi square), which is used to study the relationships between variables. The research hypotheses were verified at the significance level $p<0.05$.

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Results

301 respondents took part in the survey. All respondents were students of Lodz universities – 160 people (53.2%) studied at non-medical universities and 141 at medical universities. 79.4% of the respondents were women. The average age of respondents was 22.7 years with a deviation from the average of 2.5 years. The youngest respondent was 18 years old and the oldest 38 years old. At least half of the participants in the study were 22 years of age or older, which was also the most frequently recorded age in the study group. The survey also took into account the respondents' place of residence. City residents accounted for 72.1% of those surveyed. The study evaluated, inter alia, the respondents' knowledge of suicidal behavior as well as their perception. The obtained results are presented in Table 1.

Table 1. Distribution of respondents' responses according to selected variables

Characteristic	Men	Women	Total	p*
The perception of suicide attempts	(%)			
Cry for help	32.3	46.0	43.2	0.015
Desire to attract attention	19.4	15.1	15.9	
Escape from problems	12.9	20.1	18.6	
Satisfying curiosity	1.6	0.0	0.3	
Just a failed suicide	30.6	15.5	18.6	
Other	3.2	3.3	3.3	
Causes of suicide bombings (% do not add up to 100)	%			
Mental illness, depression	75.8	66.9	68.8	0.003
Chronic illness, disability	3.2	14.6	12.3	
Family problems	14.5	19.7	18.6	
Heartbreak	12.9	17.2	16.3	
Bad economic conditions, sudden job loss	29.0	13.4	16.6	
Problems at work / school	9.7	8.8	9.0	
Loneliness	19.4	18.8	18.9	
Lack of understanding from the surroundings	27.4	28.5	28.2	
Committing a crime or offense	1.6	0.4	0.7	

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Can people from around stop someone from making a suicidal decision?	%			
Yes	100.0	88.3	90.6	0.03
No	0.0	11.7	9.4	
Would the respondents try to prevent the suicide attempt if they were witnesses?	%			
Yes	83.9	91.2	89.7	0.02
No	16.1	8.8	10.3	
Do people have the right to a suicide attempt?	City	Village	Total	0.02
	%			
Yes	82.5	70.0	79.4	
No	17.5	30.0	20.6	
Where should people with suicidal thoughts seek help? (% does not add up to 100)	%			
Relatives	31.3	39.3	37.5	0.04
Helpline	10.6	3.6	5.3	
Psychologist / psychiatrist	57.1	52.4	53.2	
Cleric	4.8	0.9	1.7	

*statistically significant

The respondents were asked about how they understand the concept of imperfect suicide, and thus how they perceive people who decided to engage in such behavior. 43.2% of respondents (i.e. 130 people) replied that in their opinion a suicide attempt was a cry for help. 18.6% of respondents said that the suicide attempt was a failed suicide bombing that was ultimately to be fatal. The same percentage of respondents perceived suicide as an attempt to escape from the problems faced by those who committed attacks on their own life. 15.9% of respondents saw such an attempt as a desire to attract attention. (i.e. 48 people). There was a relationship between the type of answers given and the sex of respondents ($p<0.05$). Women more often indicated that undertaking a suicide attempt is the same as crying for help (46.0% vs 32.3%) and escaping from problems (20.1% vs 12.9%). However, men more often indicated that suicide was not only an unsuccessful attempt to take one's own life (30.6% vs 15.5%) or a desire to attract attention (19.4% vs 15.1%), which in some way proves male and female personality differences.

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Respondents were also asked about the perception of the suicide act. Over half of the respondents (52.5%) perceived suicide as a way to escape their problems. However, 21.6% of respondents said that it is a sign of a sincere desire to end their life. Every tenth respondent stated that a suicide bombing that ended in death was a sign of weakness and cowardice. Respondents were also asked to indicate the most common suicide committed in Poland. The study participants had a choice of 9 different response options based on the data of the Police Headquarters. The majority of respondents – 68.8% – agreed that mental illness and depression are among the most common causes of suicide with a fatal outcome in Poland. Other most frequently cited reasons were: lack of understanding from their environment (28.2%), loneliness (18.9%), family problems (18.6%), poor economic conditions and sudden loss of livelihood (16.6%), heartbreak (16.3%), chronic illness, disability (12.3%), problems at work or school (9.0%) and committing a crime or offense (0.7%). Men much more often than women indicated that an important reason for attempts to take their own life are poor economic conditions and sudden loss of livelihood, while women more often than men indicated chronic illness, disability ($p<0.05$).

The subjects were asked to indicate who is more likely to commit suicidal behavior – men or women. The answers regarding suicide attempts were very similar. Not much more than half of the students participating in the survey (52.8%) indicated that women are more likely to try to take their lives. Medical university students more often than non-medical university students rightly pointed out that women are more likely to commit imperfect suicide (64.5% vs 42.5%). For suicidologists, significant factors of suicidal behavior may be broadly understood traits of suicides. Therefore, respondents were asked to assign selected features to persons deciding to commit suicide. The subjects had a choice of 8 response variants and had the option to select no more than 2 of them. Most of the surveyed students (74.8%, or 225 people) indicated that people performing the suicidal act can be attributed with low self-esteem and excessive self-criticism. The second most frequently

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chosen answer by the respondents was a negative assessment of their own life (60.5%). Every third respondent indicated an inability to solve interpersonal problems that are key to proper functioning in society, establishing relationships and shaping assertive behavior. No statistically significant correlation was found in the responses to variables such as type of university, gender or place of residence. Respondents were also asked about how they assess the fact of suicide attempt by other people. Most respondents (79.1%) declared that everyone has the right to decide about their fate, and thus also has the right to decide to take their own lives. There was a statistical relationship ($p \leq 0.05$) between the type of answer given and the place of residence of the respondents. Respondents living in the village more often claimed that a person has no right to decide on targeting their own lives (every third respondent). 89.7% of all respondents said that if they witnessed a suicide attempt, they would try to prevent it. Women slightly more often than men declared providing such assistance ($p<0.05$). Most people declaring their willingness to help would call the emergency services in such a situation, while others would intervene on their own. Respondents were also asked about where people considering taking their lives should seek help first. Most indicated the advice of a psychologist or psychiatrist – 55.8% of respondents. 33.6% of them indicated the role of family, partner and friends. 8.6% indicated a helpline where you can get advice on how to proceed. None of the respondents chose the Internet as a source of seeking help in a crisis. Respondents living in rural areas more often answered that those at risk of committing a suicide bombing should first seek help among those closest to them (39.3% vs 31.3%) or the clergy of their religion (4.8% vs 0), 9%). City residents more often emphasized the role of the Helpline (10.6% vs 3.6%). Help from mental health professionals also found greater support among urban respondents (57.1% vs 52.4%). Mass media play a very important role in the prevention of suicidal behavior, as well as in the process of shaping knowledge on this subject. Therefore, the respondents were asked whether in their opinion the mass media should provide information on the committed suicides. 53.8% of students

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participating in the study (i.e. 162 people) expressed the opinion that information on cases of committed suicides should not be publicized by the mass media. There were no statistically significant relationships to socio-demographic variables. Respondents were also asked about the effects of publicizing suicide cases by the media. Respondents could choose one of six proposed answer options. Every third respondent indicated that publicizing suicidal behavior by mass media increases the interest of recipients in the problems of their loved ones. 22.6% of respondents said that such media content is only a sensation, and 18.6% that it prompts people to reflect on the meaning of life. Other respondents were of the opinion that the media could negatively influence society's behavior: 15.0% of respondents (i.e. 45 people) claimed that publicizing the problem of suicide could be a hint on how to effectively take one's life, 10.6% (i.e. 32 persons) that such information strengthens persons struggling with suicidal thoughts in the validity of their considerations, and 3.0% of respondents (9 persons) that it prompts people to commit suicide.

Discussion

The study determined the perception of suicidal behavior in the student population. In addition, information was obtained regarding the level of knowledge of the respondents about the scale of suicidological problems and the perception of people after suicidal experiences. Most respondents (52.5%) indicated that suicide can be equated with escaping from problems. Suicide attempt was most often understood as a call for help (43.2%). As much as 68.8% of the surveyed students considered mental illness and depression to be one of the main risk factors for suicide. 89.7% of respondents declared an attempt to prevent a suicide bombing if they witnessed such a situation, as well as a willingness to help a person after a suicide attempt (82.7%). Only 28.6% of respondents were aware of the negative effects that information in the media on suicidal behavior may have. It is worth comparing the results of own research with the results of other authors.

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In 2012, Markiewicz and Osińska-Zych conducted a study at the Medical University of Lublin "Opinions of selected social groups about people after suicide attempts" [12]. It was aimed at analyzing attitudes towards people who had attempted taking their own lives. The study was conducted among 50 nurses employed in one of the hospitals in Lublin and among 50 students of the Medical University in Lublin. 80.0% of respondents described people after a suicide attempt as those who are unable to cope with a difficult life situation, 13.0% said that they are mentally ill, and the remaining 7.0% of those surveyed that the suicide attempt is a result of desire to attract attention. The survey also asked about the respondents' behavior towards people who attempted suicide. 46.0% declared establishing close contact with such a person. When asked about where people after suicide attempts find help, 76.0% percent of the respondents pointed to their closest relatives. Comparing the results of this study with the results of the own study, it should be noted that students from Lodz more willingly declared their willingness to help people after a suicide attempt (82.7% vs 46.0%). A clear difference was also observed in identifying sources of assistance for would-be suicides. Students from Lodz more often indicated the need to seek help from a psychologist or psychiatrist (55.8% vs 15.0%), while respondents of the above-mentioned study indicated a greater percentage of help from family and friends (76.0% vs 33.6%). The differences were also visible in the way the suicide attempt was perceived. Finding yourself in a difficult life situation, and thus the desire to escape from problems is the most common way of securing a suicide attempt by the respondents from Lublin (80.0%) as opposed to Lodz respondents (18.6%).

It is also worth referring to the Manowska's "Youth attitudes towards suicide" study [13]. The study was carried out in Poland and France in the years 2006–2011 in the population of Polish and French youth. The study group consisted of 327 Poles and 220 French people, i.e. a total of 547 people in the age groups of 11–15 and 16–19. Teenagers' attitude to the phenomenon of suicide was examined – most of them declared a negative perception of suicide both in Poland (78.0%) and in France (87.8%). Polish junior high

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school students showed a negative perception of suicide to a lesser extent than French junior high school students (73.3% vs 90.0%). In addition, as much as 16.8% of Polish junior high school students were indifferent to suicidal behavior (in France the figure was 6.2%). The situation among high school students was very similar and most of them declared a negative attitude regardless of whether the subjects studied in Poland (82.2%) or France (84.9%). Although the vast majority of students surveyed had a negative attitude towards suicidal acts, there is a noticeable difference between the attitude of Polish and French junior high school students. The results of the study show that there is a clear need to educate and shape the attitudes of Polish youth in the field of suicidal behavior.

Another study that is worth referring to is "Analysis of youth opinions on suicide risk factors" [14]. It was conducted in 2015 among 1,358 students of randomly selected Warsaw high schools. As the main cause of suicide among young people, the respondents indicated: family problems, parents' lack of understanding (37.0%), and conflicts with peers (48.6%) regarding school failure. 59.1% of people taking part in the survey found that rejection by their loved ones is a factor causing loneliness, and thus may be the reason for making a decision about suicide, and 29.3% indicated that a negative assessment by the environment contributes to suicide. The respondents participating in the study "Suicidal behavior in the opinion of selected students of Lodz universities" also indicated a lack of understanding (28.2%) and loneliness (18.9%) as factors that could lead to committing suicide.

A factor that is considered to protect against suicidal acts is absolute well-being and a positive approach to life. How big resistance to stress, injury or traumatic life experiences is, to some extent is determined by one's personality traits. It is easier for people with high self-esteem and efficiency of their own actions to seek help in crisis situations. Leading a healthy lifestyle focused not only on the body, but also on the mind (physical activity, adequate sleep, developed social relationships, ability to cope with stress, avoidance of stimulants) can be an important element in the prevention of suicidal behavior [15,16].

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Conclusions

The level of knowledge of the respondents about suicidal behavior was not satisfactory. However, they showed a high level of sensitivity and acceptance towards potential suicides. There is a need for education regarding accessibility of help for people with suicidal thoughts. In addition, there is a lack of sufficient literature analyzing the knowledge and opinion of the public on suicidal behavior, and thus there is a lack of information on real public awareness of this phenomenon. The issue of suicides is a very important epidemiological problem and there is a clear need for research in this area, as this could enable the implementation of preventive programs and social campaigns in this area, which in turn will translate into an improvement in the aspect of suicidal behavior in the population.

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Anorexia Nervosa and Bulimia Nervosa – Aims and Tasks of the Therapeutic Team

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Abstract

Introduction and aim of the study: *The therapy of people with eating disorders should be multidirectional and include psychotherapy, treatment of somatic complications, nutritional treatment and sometimes pharmacotherapy. Therefore, the team of specialists conducting such therapy should include: psychotherapists, psychiatrists, internists, dieticians, nurses. The aim of this study is to present methods of treatment of eating disorders in an interdisciplinary perspective.*

Brief description of the state of knowledge: *Nutrition disorders are a diverse group of diseases, their treatment depends on the diagnosed disease entity. It is extremely important to quickly diagnose the disease, which allows for early introduction of therapy, and thus reduce the number of complications and their severity. Depending on the patient's condition, outpatient or hospital treatment may be advisable. The decision on the mode of treatment is made by the doctor on the basis of the medical history, test results, level of malnutrition and mental state. Also nutritional therapy is dependent on the kind of disease and the patient's condition. In people suffering from restrictive disorders, the main aim of nutritional therapy is to improve the nutritional status and normalize the patient's body weight. In the case of eating disorders with overeating, the main task of a nutritionist is to re-educate the patient in terms of recognizing physiological symptoms of hunger and satiety and to help in nutrition planning.*

Conclusions: *Due to the lack of clear causes of eating disorders, symptomatic treatment prevails, which should be based on constant contact with all members of the therapeutic team. Treatment is long and patients often interrupt the therapy to return to it after a while.*

Key words: *Eating disorders, anorexia nervosa, bulimia nervosa, therapy.*

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Introduction

Due to multi-faceted somatic and psychopathological conditions of eating disorders, the treatment of patients should be multidirectional and take into account all health needs of the patient. Properly managed therapy should include nutritional treatment, treatment of somatic complications, psychotherapy and sometimes pharmacotherapy [1,2]. Moreover, constant supervision of an internist and specialist consultations, including cardiological, gynaecological, endocrinological, gastroenterological and other consultations, are necessary [3]. The permanent team of specialists treating eating disorders should include: internists, psychiatrists, dieticians, psychotherapists and nurses [2,3]. Such teams are standard in the countries of Western Europe and North America, unfortunately, they are still rare in Poland [3,4,5].

The whole treatment process is difficult, as in the absence of clear reasons for the disease, the therapy includes mainly symptomatic treatment, which requires constant contact with all members of the team specialists and appropriate reaction to the existing health situation [3]. The recovery time is long, patients often discontinue the therapy and return to improper dietary behavior and compensation methods [1,3,6]. As a result, one patient even starts the therapy several times before it is successfully completed.

The aim of this study is to review the literature in the aspect of eating disorders, with particular emphasis on the interdisciplinary aspect of eating disorders and to present the tasks of the therapeutic team.

Eating disorders treatment standards

In the treatment of eating disorders, the standards developed by specialists from Europe and the United States of America are used [7]. The best known guidelines include the standards developed by the American Psychiatric Association (APA) and under the leadership of the National Institute of Health and Clinical Excellence (NICE) – standards of nutritional

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treatment and therapy, and the Management of Really Sick Patients with Anorexia Nervosa (MARSIPAN) – standards of comprehensive care [7,8].

The therapy of eating disorders depends on the diagnosed type of disease. In the case of anorexia nervosa, immediate hospital treatment is often necessary. This is due to the late arrival for help when serious somatic disorders occur, such as: arrhythmia, electrolyte disturbances, dehydration, severe malnutrition. Those may be associated with direct life-threatening events [9,10]. Patients mask the occurrence of symptoms by wearing larger clothes, providing food alone, willing to engage in preparing meals for the family [10].

The main therapeutic goals of anorexia nervosa include [3,9,10,11]:

1. restoration of proper body weight appropriate for age, height and gender;
2. treatment of somatic complications resulting from long-term malnutrition;
3. psychiatric treatment (mainly includes psychiatric supervision and introduction of pharmacotherapy);
4. psychotherapy (an attempt to eliminate untrue images, cognitive disorders and to regulate relationships with other people);
5. restoration of proper eating habits and stopping the use of food restrictions.

In the case of bulimia nervosa, an additional goal is to limit the use of compensatory methods in the initial period of treatment and to stop them completely with the therapeutic progress [12].

Medical and dental assistance

The research shows that people suffering from eating disorders during the first period of disease most often seek help from a dietician, general practitioner or internist, whereas they rarely contact a psychologist and psychiatrist [13]. In smaller towns or rural areas, access to dietary, psychological and psychiatric consultations is very difficult; therefore, the responsibility for the diagnosis of these disorders lies exclusively with

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the general practitioner, who should pay attention to the following behaviors and symptoms characteristic for people with anorexia and bulimia (Table 1).

Table 1. Behavior and symptoms characteristic for patients with anorexia nervosa and bulimia nervosa [3,4,6]

Anorexia nervosa	Bulimia nervosa
• excessive concentration on the body's appearance and its dimensions; • weight loss; • interest in restrictive diets; • increased physical activity (e.g. increase in the frequency of workouts, abandonment of public transport in favour of walking); • disturbed image of own body (hyperbolization); • anxiety of weight gain; • provoking vomiting, using laxatives and diuretics; • aversion to undressing for examination; • excessive focus on the energy value of meals; • menstrual disorders; • occurrence of lanugo – usually at BMI<16 kg/m^2; • hair loss, nail cracking, dry skin; • cold intolerance; • significant increase in total cholesterol (even up to 300 mg/dl).	• excessive concentration on the body's appearance and dimensions; • great interest in food and cooking; • excessive focus on food; • increased physical activity (e.g. exhausting workouts to burn the energy supplied with the food consumed); • provoking vomiting, using laxatives and diuretics; • fear of weight gain; • swelling of the salivary glands (so-called hamster face); • feeling of losing control over food; • eating as a method of coping with stress.

In the early stages of the disease, the main task of doctors is the early diagnosis of the symptoms of eating disorders, which enables a quick diagnosis to be made and start appropriate treatment [14]. This reduces the number of complications and their severity and improves the therapeutic prognosis [14]. During the diagnostic process, the physician should gently make the patient aware of the health consequences of these disorders and mortality resulting from the complications [14]. Depending on the severity of disease, the physician decides on the mode of treatment of patients. In cases of eating disorders, outpatient or hospital treatment is

possible [12]. The indication for hospitalization is a decrease in patient's body weight below 75% of the due body weight; moreover, hospital treatment, even without the patient's consent, can be provided when:

- the patient's BMI is <15 kg/m^2 or there is a decrease in body weight by more than 25% of the due body weight;
- there are cardiovascular symptoms: systolic pressure <90 mm Hg; heart rate <50/min by day and/or <40/min by night; orthostatic heart rate changes: increase of >20 beats/min or decrease of pressure of >10 mm Hg;
- electrolyte disturbances (especially hypokalaemia);
- suicidal thoughts or self-destructive behaviour occur [15,16].

The outpatient mode is mainly intended for patients whose state is not life-threatening due to severe malnutrition, electrolyte disturbances and dehydration [4,10,12]. The clinical experience shows that during outpatient treatment, the normalization of body mass and somatic status is much slower than in hospitalisation. However, it is parallel to changes in the mental sphere [12]. On the other hand, failure to institute hospital treatment in patients with low BMI values results in prolongation of the time during which the patient's body is burdened with too low body mass and too low weight gain during a given period of time [12].

Pharmacotherapy

Pharmacotherapy of eating disorders is a problematic concept since so far no substance has been registered that would be fully effective in treating them [10,12,17,18]. In such disorders, different groups of drugs are used, depending on symptoms. In the pharmacological treatment of anorexia nervosa, antidepressants are used: selective serotonin reuptake inhibitors (SSRI) and selective serotonin norepinephrine reuptake inhibitors (SNRI), as well as anti-anxiety and antipsychotic drugs [17,19]. In the treatment of bulimia nervosa, SSRI, SNRI and anticonvulsants (e.g. topiramate) are used [18,19]. There is also a group of drugs whose use in the treatment of eating disorders is questionable due to the occurrence of side effects

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and numerous contraindications for their use. Among them is bupropion. It is a selective neuronal norepinephrine and dopamine reuptake inhibitor, which is used mainly in the treatment of nicotine addiction and severe episodes of depression [18]. In addition, scientific studies have shown the efficacy of this drug in the treatment of bulimia nervosa; however, its use may cause gastrointestinal disorders and induce convulsions, which completely disqualifies its application in epilepsy patients [20]. Moreover, the use of bupropion in children and adolescents below 18 years of age is not recommended due to its unproven clinical efficacy and unknown safety in this age group. Moreover, bupropion shows low addictive potential [21]. Moreover, the treatment of eating disorders that were not defined otherwise remains a major problem. Similarly to anorexia and bulimia, symptomatic treatment dependent on the patient's condition is applied [22]. In this group of diseases, SSRI, anticonvulsants, and SNRI are used [17,20].

Pharmacotherapy also involves the selection of other drugs appropriate to the patient's physical condition. In certain cases, drugs affecting the cardiovascular system, nervous system, endocrine and digestive systems need to be used [3,10,12]. Their application should be preceded by physical examination of a patient and analysis of laboratory tests [3].

Dentists play an important role, particularly in the diagnosis of eating disorders. Many patients suffering from these diseases have problems related to their dentition, periodontium and oral cavity [2]. The majority of patients who seek help from a dentist do not inform them about nutritional problems, so it is important that dentists, in addition to providing appropriate dental procedures, also carry out an interview in which they exclude the cause of oral diseases resulting from eating disorders [2]. The symptoms that the dentist should pay attention to include the so-called "hamster's face" (enlargement of salivary glands caused by vomiting), loss of hard dental tissue of non-carious origin, increased sensitivity of teeth to mechanical and thermal stimuli, sores and erosions occurring in the oral cavity and oesophagus, xerostomia, inflammation of the tongue and corners of the mouth, damage to the oral mucosa and discoloration of teeth [23,24].

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Psychotherapeutic assistance

There are many models of psychotherapeutic treatment of patients with eating disorders [7,8,22]. NICE considers cognitive-behavioral psychotherapy, cognitive-analytical psychotherapy and interpersonal psychotherapy to be the most effective among adults (effectiveness confirmed by scientific studies) [7,22]. Similar models of psychotherapy are recommended by APA (family psychotherapy, cognitive-behavioral psychotherapy, interpersonal psychotherapy and psychodynamic psychotherapy) [7]. All institutions have recognized that the best therapeutic effects in children and adolescents are achieved by family psychotherapy (systemic work) [7,25,26]. The most important characteristics of each of the mentioned psychotherapeutic models are presented below (Table 2).

The basis of each model of psychotherapy is to establish an appropriate relationship between the patient and the therapist [22]. This relationship allows for honest discussion of all aspects of patient's life, which are related to the disease or which should be worked out with the psychotherapist for another important reason [22,25,26].

The review of scientific literature suggests that in the acute phase of the disease (severe symptoms and cachexia), relationship-based therapy is the most effective (usually psychodynamic psychotherapy) [5]. In later stages of treatment, after weight gain, cognitive behavioral therapy (CBT) is recommended [5,22,26]. There are concerns that in case of significant emaciation (early stage of therapy), the cognitive functioning of patients does not allow for full involvement in the treatment process, thus the effectiveness of cognitive-behavioral psychotherapy at this time is low [5]. However, the American Psychiatric Association recognizes that CBT is an effective form of help after a specific weight gain and preventing relapse [5,7,22].

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Table 2. Brief characteristics of psychotherapeutic models used in the treatment of eating disorders [7,9,22,25,27,28,29]

Models of psychotherapy	Characteristics
C-behavioral psychotherapy	It is based on the assumption that the disturbed behavior is derived from repeated, learned responses to stimuli. The aim of the therapy is to change the way of thinking and develop new behaviors (correcting existing ones). During the therapy the patient acquires skills and learns to solve problems in a new way. The therapist plays an active role.
Cognitive-analytical psychotherapy	The therapy is based on finding negative, inappropriate thought patterns and analysing past events. Its aim is to identify and change undesirable behaviors to those that will enable proper functioning. It consists of 3 stages: reformulation (behavior analysis), identification (the influence of these behaviors on the development of the disorder) and revision (identification of changes).
Interpersonal psychotherapy	Based on the assumption that relationships with other people are connected with the symptoms. The main aim of the therapy is to reduce symptoms by improving interpersonal interaction. During therapy, interactions that precede, sustain or result from the disorder are discussed. During therapy, the patient learns how to deal with emotions and how to react to emerging relationship difficulties.
Psychodynamic psychotherapy	Based on psychoanalysis and the theory that disorders are associated with childhood and unresolved conflicts from the past. It assumes that human behavior comes from unconscious, internal mechanisms. During therapy, the psychotherapist analyses unconscious impulses and hidden needs.
Family (systemic) psychotherapy	Therapy involving the system – a group of people (usually family, marriage). Its aim is to improve relations between the members of the group participating in the therapy, to correct communication and to introduce the rules of the group that will improve its functioning.

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Gestalt	Therapy based on the conviction of complex human structure. Its aim is to show how to solve emerging problems based on one's own abilities and competences. During the therapy the patient learns stereotypes about himself/herself (gets rid of them), his/her limitations and hidden potential.
Process-oriented psychotherapy	During the therapy the experiences described by the patient are analysed. The therapist's task is to notice the potential for change in the described experiences and make the change visible to the patient as well.
Expressive psychotherapy	Therapy that involves creative processes (drama, movement, music, writing) in reaching internal experiences and resources and making them visible as an act of art. It assumes that art allows to get rid of negative feelings and emotions in an indirect way. A given work is not subject to qualitative evaluation, but serves as an expression of emotions. Often used as an additional but not the only therapeutic form. Its classification as a form of psychotherapy is debatable, some societies classify it as a form of occupational therapy.

Regardless of the selected therapeutic model, psychotherapy is a long-term form of help [5,7,22,26]. Depending on the patient's condition and severity of the disease, psychotherapy of eating disorders may last 4-5 months, and sometimes even about a year or more [5]. The duration of therapy and the rules of psychotherapeutic treatment should be written in a special therapeutic contract, which must be accepted by both parties involved in the therapy [22,26].

In selected cases, it is necessary to include family members in the therapy [25]. This process mainly concerns children and adolescents, whose functioning within the basic social unit, which is the family, remains impaired [25]. During the therapy, events important for the family and feelings related to them are discussed. The therapist should discuss the issues of conflict within the family in a neutral way and help to develop solutions that meet the expectations of all family members [27].

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Many health centres also use other forms of therapy. Among them, expressive therapies are widely used, such as psychodrama, art therapy or dance therapy [28,29,30]. The Gestalt therapy is also becoming more and more popular [31]. It is based on the assumption that eating in the patient's family was an important means of communication replacing other forms of expressing feelings, e.g. hugging, praising, complementing [31,32]. The lack of appropriate emotional patterns led to incompetent recognition and presentation of own feelings and emotions; therefore, the patient tries to express them by means of eating disorders [33].

Regardless of the selected therapeutic model, it is important that the therapy should be carried out by a qualified psychotherapist [5,22,27,29,31]. Permanent removal of symptoms of the disease is very difficult but achievable with properly conducted treatment [5,7,33].

Nutrition intervention

Nutrition therapy is also considered an important component of the treatment of eating disorders, which is included in international standards of conduct developed by various institutions, including APA, NICE and MARSIPAN [8,20].

Nutritional interventions are dependent on the existing disease. In the case of restrictive eating disorders, such as anorexia or pregorexia, the main task of a dietician is to support nutrition, the aim of which is to improve the state of nutrition and normalize body weight [4]. In eating disorders of the overeating type, a dietician should first of all teach the patient to recognize physiological symptoms of hunger and satiety and provide support in nutrition planning [34] (Figure 1).

The dietician bases his actions on two essential elements – the assessment of the nutritional status and the evaluation of the current diet [4,35]. It is necessary to prepare an individual diet adjusted to the current state of health, energy, protein, carbohydrates, fats, vitamins and minerals [4,6,10].

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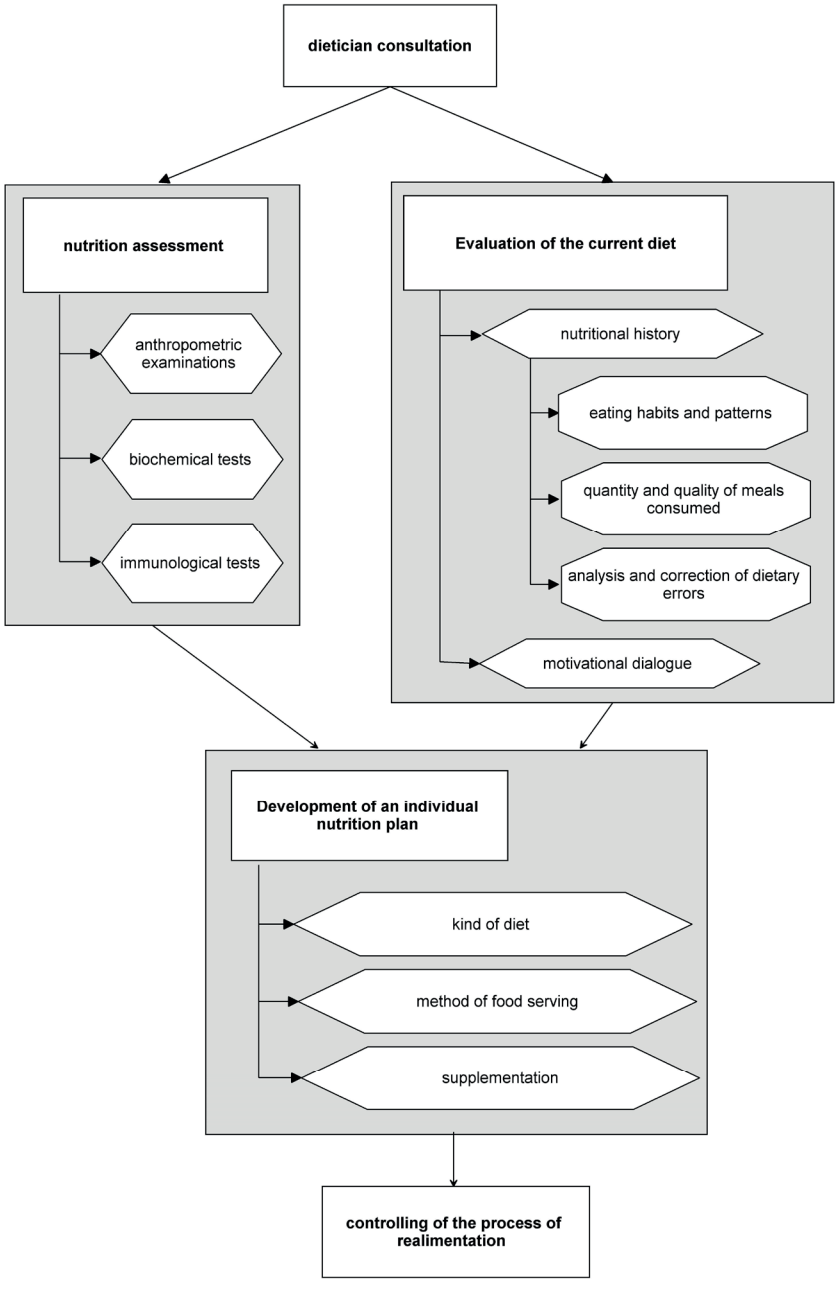

Figure 1. Nutritional interventions in restrictive eating disorders and overeating eating disorders

The evaluation of nutritional status should take into account [3,4,6,10]:

1. anthropometric tests, including: body weight, BMI, measurement of the thickness of dermal-fat folds on the arm, over the biceps and triceps muscles as well as measurement of the middle circumference of the arm [3]. At present, it is common to determine the content of fat-free body mass and body fat using electrical bioimpedance (BIA) [3]. It is a method which allows to determine the percentage of fat tissue in a precise way, however, not every patient can be measured [36,37,38]. The contraindications for BIA are epilepsy, implanted pacemaker and pregnancy [40]. In some situations the test result may be unreliable, e.g. in people with metal implants, shortly after a meal (<4 hours before the test) or liquids, after increased physical activity (<12 hours before the test), after alcohol consumption (<48 hours before the test), after taking diuretics (within 7 days before the test) [38]. The BIA result may differ from the actual state if the tested person misgrips the electrodes or stands on the analyzer with wet feet. The result may also be imprecise in persons with severe malnutrition [38].
2. Biochemical tests which determine the degree of malnutrition. The basic tests of this group include the determination of plasma albumin concentration, transferrin concentration and prealbumin concentration [3].
3. immunological tests – the determination of total lymphocyte count (CLL) in 1 mm^3 of peripheral blood is particularly important. Malnutrition is diagnosed when CLL drops below 1500/mm^3. The following ranges can be distinguished [39]:
    - 1200–1499/mm^3 – light malnutrition
    - 800–1199/mm^3 – moderate malnutrition
    - <800/mm^3 – severe malnutrition.

It should be remembered that dehydration, which often occurs in patients with eating disorders, may result in haemoconcentration, i.e. thic-

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kening of morphotic elements of blood, which may contribute to erroneous interpretation of findings [40].

In order to assess the dietary habits, a dietary history is necessary [4,41,42]. One of the methods of nutritional history is the 24-hour history, which involves obtaining information about meals and drinks consumed during the day preceding the examination. Both basic meals and snacking between them and using dietary supplements [43]. The patient can also keep a dietary diary, which he supplements independently every day. It includes meals, time of their consumption, consumed products (with the amount – weight or household measurements), drinks and snacks. The diary may also include the emotions accompanying the consumption of meals [44].

A reliable nutritional history allows to determine the patient's eating habits and obtain information about the quantity and quality of meals [42]. Additionally, a dietician can analyse the dietary mistakes and correct them [4]. During the history, judgements and statements which could suggest or assess the disease and condition of a patient should be avoided [4]. Blaming the patient for his/her current state of health or criticizing his/her attitude may cause concealment of nutritionally and clinically important information, which delays the treatment process [4,6]. Additionally, during the conversation with a patient, no phrases should be used which could cause fear or anxiety resulting from the health condition. The research proves that intimidation of the patient with irreversible health consequences or death is not an encouragement to actively join the therapy; on the contrary, it may contribute to the development of catastrophic thoughts and complete submission to the disease [45]. However, this does not change the fact that patients should know the diagnosis and current state of health and possible complications of the disease. Nevertheless, this information should be provided in a reliable, accessible way, proportionally to the patient's information needs [45]. At the end of an interview, the information should be provided with reasonable and reliable hope, i.e. about the therapeutic possibilities and continuous support [45]. In the course of the

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dietary history, the dietitian may apply elements of motivational dialogue aimed at increasing motivation for treatment and setting realistic targets [4]. There are three basic principles of motivational dialogue, these are [46]:

- empathy – the ability to feel the patient's emotions the way they feel them (e.g. sadness and pleasure), the ability to interpret the patient's words and find what they do not say directly;
- to know the patient's beliefs in relation to the introduction of change related to the treatment process;
- building a sense of causality.

The basic tools of motivating dialogue are: open questions, reflections, reinforcements and summaries [47]. The patient should become aware of his or her own attitude towards the disease and then take appropriate actions to change the inappropriate habits [4]. Next, a dietician should develop an individual nutrition plan taking into account all necessary macro- and micro-nutrients [4]. Meals should be diversified, aesthetic, easily digestible, appropriately selected in terms of colour and taste and consumed in the company of other people. In the case of anorexia nervosa, meals should be served in small amounts but at higher frequencies (5–7 times) and on large plates to reduce the feeling of anxiety resulting from the amount of food consumed [3,42]. In bulimia nervosa and binge eating disorder, the products which favor the overeating attack should be eliminated and the meal times, which the patient should follow, should be precisely defined [3,4].

In anorexia nervosa, in patients with severe cachexia, it is recommended that the energy value of the diet should be 5–10 kcal/kg body weight/day. Around day 8 of therapy, after consultation with the physician, it is recommended to increase the caloric value of the diet by additional 30 kcal/kg body weight and to increase it successively until the due energy value of the diet is reached [48,49]. In patients with no significant malnutrition, it is recommended to start nutritional treatment from 30–40 kcal/kg body weight/day. Then, the caloric value should be gradually increased, by 30–50% per day maximum [4,16]. The energy demand

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should be covered in 50–60% by carbohydrates, 15–20% by protein and 30–40% by fats [4,16]. During this time, a low-fat and lactose-free diet should also be used [3]. The body weight increase should be about 0.25–0.5 kg/week in outpatient treatment and about 0.5–1.5 kg/week in hospital treatment [5,6]. Additionally, it is necessary to administer vitamins and minerals in the form of dietary supplements, especially B group vitamins (especially thiamine – 100 mg/day), vitamins C, D, A, and minerals: calcium, magnesium, iron, zinc, and phosphorus [5,48]. The use of foodstuffs for special nutritional purposes, especially protein-enhanced and hypercaloric cocktails is also worth considering [16,48,49].

It is recommended that meals should be eaten in smaller portions, while their frequency increases to 6–7 meals/day. High energy saturation of a meal should be ensured, i.e. the highest possible amount of energy should be provided in a small portion of food [4]. In the initial period of nutritional treatment, symptoms from the gastrointestinal tract may appear (flatulence, feeling of fullness in the stomach, diarrhea). However, they occur in the majority of patients and are characterized by spontaneous atrophy [4].

In the nutritional therapy of bulimia, special attention is paid to elimination of improper eating habits and teaching the patient to recognize the signals indicating physiological hunger. Energy value of the diet in patients with correct body weight should correspond to the total energy demand (product of the basic metabolic value and physical activity index), whereas in overweight people this value can be reduced by about 200–300 kcal/day. The diet should cover the demand for all vitamins and minerals and provide an adequate amount of protein, fat and carbohydrates. It is recommended that the diet plan should include 3 main meals and 2 snacks. This will help to systematize the diet and prevent hunger attacks. The diet should be arranged according to the principles of rational nutrition, taking into account individual needs (exclusion of disliked products from the diet, taking into account dietary preferences). It is important to include products that naturally occur in portions (e.g. bread rolls instead of bread or potatoes instead of groats). Moreover, the dieti-

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tian should provide basic recommendations concerning the way of eating meals, which we include [44]:

- eating meals with cutlery, categorically avoiding eating by hand;
- avoiding hot and cold dishes, it is recommended to consume meals at room temperature;
- eating in a sitting position, in a quiet atmosphere, in the kitchen or dining room;
- while dining, it is recommended to switch off all mass media, stop making phone calls and using social networking sites;
- planning meals during the day;
- keeping a nutritional diary, detailing the emotional state during the day;
- shopping only with a list of products;
- avoiding greasy and sweet snacks that may encourage overeating (chips, crackers, nuts, chocolate, ice cream).

Dieticians should also co-determine the method of food intake [3,35]. The best and most physiological method of nutrition is oral; however, some patients completely refuse to eat or have other diseases or complications which exclude this method of nutrition [3]. Other methods of food delivery should be considered, including enteral nutrition, intragastric or intravenous (parenteral) nutrition [3,6,10] (Figure 2).

An important role in recovery is also played by physical activity, which contributes to muscle tissue reconstruction. It is recommended that the exercises are carried out under the supervision of physiotherapists or personal trainers who will adjust the type of exercises to the current state of health. However, this activity should be controlled as there is a risk of its reuse as a compensating method aiming at weight loss [35].

Incorrect implementation of nutritional treatment in patients with anorexia nervosa may lead to refeeding syndrome (RFS). In RFS, electrolyte, metabolic and hormonal disorders occur as a result of too fast introduction of a diet with too high energy density for a given patient [15,49]. During prolonged starvation and severe malnutrition, the metabolism is dominated by catabolic processes, which after a sudden in-

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troduction of nutrition rapidly switch to the synthesis processes (anabolism) [48].

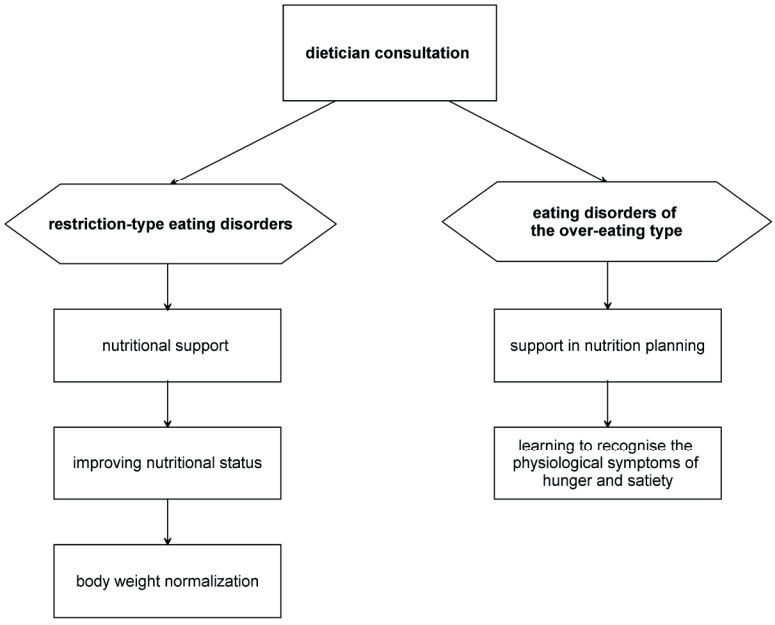

Figure 2. Scheme of dietary consultation in eating disorders

The main symptom of this syndrome is hypophosphatemia [15,49]. The highest drop in blood phosphorus levels usually occurs on day 2–3 of treatment; its lowest values are usually observed on day 5 [15,48]. Phosphorus supplementation should be introduced when its level drops below 0.8 mg/dl. In such cases, the 30–60 mg/kg body weight/day dose divided into 3 or 4 doses per day provided orally [49]. For severe hypophosphatemia (below 0.5 mg/dl), an intravenous phosphorus supplementation at the dose of 20–30 mg/kg bw/day is applied [49]. An increased risk of RFS occurs in patients with BMI below 14 kg/m^2 and after a hunger strike lasting more than 15 days [49].

Hypophosphatemia leads to disturbances in cellular processes which may cause: respiratory failure, circulatory failure, increased risk of infections, haematological complications, gastrointestinal disorders, pare-

sthesias, convulsions, delirium and myocardial atrophy (with severe malnutrition) [15,48]. The complications of RFS may also include peripheral oedema pulmonary stasis, circulatory failure and ventricular arrhythmias, which are the most common causes of death in these patients [15].

To prevent RFS, it is recommended to gradually increase the energy value of the diet, introduce thiamine supplementation as soon as possible and constantly monitor the patient's health [15,49]. The most effective prevention of RFS is early identification of patients at risk [15,48,49].

Summary

The diagnosis and therapy of eating disorders is a difficult challenge for modern medicine, and the number of patients with these diseases is constantly increasing. There is no doubt that all specialists who treat them should have the appropriate level of knowledge and form teams of specialists who will guarantee the best medical care.

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Management of Chest Wall Tumors with Tahalele's Method: Review Article

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Abstract

Background: *Cancer or malignant tumors occur due to the growth of tissue cells in the body that are not normal or grow continuously and in an uncontrolled way. One type of tumor is a chest wall tumor. There are three treatments of chest wall tumors, namely open surgery, radiotherapy and chemotherapy. In open surgery, one of the methods that can be used as a recommendation is Tahalele's method.*

Discussion: *Tahalele's method is an open surgery procedure developed in the Department of Thoracic Cardio Vascular Surgery in Dr Soetomo Hospital, Surabaya. Research for this method has been carried out from 1986 to 2012 (26 years) with 101 cases treated. In that study the operative mortality showed zero (0%), hospital mortality occurred in 2 patients (1.98%), local postoperative recurrence in 4 patients (3.96%), partial flap necrosis in 5 patients (4.95%), postoperative infections occurred in 3 patients (2.97%) and no complications such as flail chest (0%) were found.*

Conclusion: *Tahalele's method is one of the surgical and reconstructive procedures for chest wall tumors. From the results of the study, it was found that this method was highly recommended due to low mortality and morbidity rates. It is hoped that in the future the treatment of chest wall tumors can further develop with a better postoperative prognosis.*

Key words: *Tahalele's method, open surgery, chest wall tumor.*

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Background

Cancer or malignant tumors occur due to the growth of tissue cells in the body that are not normal or grow continuously and in uncontrolled way. This is caused by neoplasia, dysplasia and hyperplasia. One type of cancer is lung cancer. In Indonesia, lung cancer ranks third after breast cancer and cervical cancer [1,2].

Lung cancer is classified into two major parts namely 1) *Non-Small Cell Lung Carcinoma* (NSCLC), which includes adenocarcinoma, squamous carcinoma and large cell carcinoma; 2) *Small Cell Lung Carsinoma* (SCLC). Based on its location, lung cancer will develop in the chest wall and epithelium of the bronchi. Usually lung cancer in the early stages does not cause any symptoms. When the advanced stage begins, patients suffer from symptoms such as coughing, chest pain, fever, hoarseness, shoulder pain and weight loss.

One location of cancer or tumors that are often found is chest wall [1,2,3]. Chest wall tumors are tumors of heterogeneous groups of lesions that require accuracy in establishing the diagnosis. Malignancy in the chest wall accounts for about 5% of the total malignancy in the thorax. The results of histopathology show the origin of cancer, which varies from soft tissue, bone around the thoracic cavity and metastases from other organs [2,3].

Chest wall tumors are usually asymptomatic. More than 20% of chest wall tumors are found accidentally during radiography examinations. Malignant tumors in the chest wall usually originate from invasion of tissue around the chest or metastases from other organs. These are such tumors as multiple myeloma, chondrosarcoma, osteosarcoma and Ewing's sarcoma. Usually this type of tumor will give symptoms such as intense pain, quick growth and usually during physical examination the mass can be felt [1,3,4].

Diagnosis of chest wall tumors consists of interview covering complaints, risk factors and family history of malignancy. Furthermore, a physical examination and supporting examination. Investigations carried out

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consisted of routine blood and chest radiography examinations consisting of Ct-Scan, MRI and positron emission tomography [2,4,5].

Until now, the treatment of chest wall tumors is surgery, chemotherapy and radiotherapy. Determination of appropriate treatment is usually based on the size, extent and type of the tumor. In cases such as rhabdomyosarcoma and Ewing's sarcoma it is usually recommended that neoadjuvant chemotherapy is performed as well as further surgical procedures [2,3,4].

Open surgery procedure, known as surgical resection, performed on chest wall tumors is a resection procedure. One of the operating techniques developed is Tahalele's Method.

Discussion

Chest wall tumors are one type of malignancy that occur in the thoracic cavity area. Various types of tumors such as chondroma, osteoma, soft tissue sarcoma, Ewing's sarcoma, rhabdomyosarcoma and metastases from other organs, especially the breast and thyroid ones, are the most common types of tumors that appear on the chest wall [2,4,5].

Chest wall tumors are also difficult and challenging cases for surgeons. Incorrect diagnosis, not full tumor resection and failed reconstruction cause high mortality rate in cases of these tumors. One type of chest wall tumor that is very malignant is the small-blue-round-cell tumor, which belong to the Ewing's sarcoma tumors group [2,3,6]. This tumor often occurs in young adults and children. This tumor also has a high recurrence rate and metastasis [1,2,7,8].

Until now the treatment given in cases of chest wall tumors consists of open surgery, radiotherapy and chemotherapy (adjuvant or neoadjuvant). These three actions are usually combined depending on the type, stage and location of the tumor [1,2,4,5]. Open surgery is one of the procedures used in treating the cases of chest wall tumors. Various methods in dealing with this case have been developed with the aim of reducing mortality and postoperative morbidity. One method of operating the chest wall tumor is Tahalele's Method.

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Chest wall tumor surgery procedure with Tahalele's own method was developed in the Department of Cardio Vascular Thoracic Surgery Dr Soetomo Hospital, Surabaya [6]. From the results of a retrospective study conducted from 1986 to 2012, as many as 101 cases have been treated with this method, which primarily included chest wall tumors such as chondroma in 13 patients (12.87%), osteoma in 14 people (13.86%), clear Toratoma in1 patient (0.99%), chondrosarcoma in four patients (3.96%), Osteosarcoma in 22 patients (21.78%), soft tissue sarcoma in six patients (5.94%), Ewing's sarcoma in one patient (0.99%), rhabdomyosarcoma in three patients (2.97%) and wall tumors that are metastases from other organs, namely metastasis from the breast in twenty two patients (21.78%), metastases from the thyroid in 13 patients (12.87%) and metastases from malignant teratomas in two patients (1.98%) [6,9,10,11]. This study included the results of patient follow-up for four years after surgery. Operative mortality showed zero (0%), hospital mortality occurred in two patients (1.98%), local postoperative recurrence in four patients (3.96%), partial flap necrosis in 5 patients (4.95%), postoperative infection occurred in three patients (2.97%) and no complications such as flail chest (0%) were found [1,2,6,7,11].

Treatment of chest wall tumors with this method gives satisfactory results. Clean chest tumor resection, chest wall reconstruction with semirigid wire (Tahalele's method) covered by soft tissue, makes Tahalele's method one of the recommendations in treating chest wall tumors [3,4,6,11].

Conclusion

Chest wall tumors are one type of malignancy that occurs in the thoracic cavity area that requires accuracy in the diagnosis and treatment. Until now, treatment of chest wall tumors consisted of open surgery, radiotherapy and chemotherapy [1,2,3]. These three actions are usually combined depending on the type, stage and location of the tumor [3,4,5,11].

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One method of surgery for chest wall tumors is Tahalele's method that has been developed in Indonesia, specifically the Thoracic Vascular Thoracic Surgery Department of Dr Soetomo Hospital, Surabaya [11]. The conducted research shows that this method can be used as a recommendation in the management of chest wall tumors with low mortality and morbidity rates. It is hoped that in the future the treatment of chest wall tumors can further develop with a better postoperative prognosis [5,6,11].

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Hypothyroidism in Elderly – Review

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Abstract

Hypothyroidism belongs to the group of the most common chronic diseases occurring in the elderly. This is a set of symptoms resulting from elevated serum TSH levels accompanied by a decrease in free thyroid hormone levels, while subclinical hypothyroidism is characterized by an increase in TSH levels at normal fT3 and fT4 levels. This disease is more common in women and the elderly. The basis of the diagnostics of hypothyroidism is testing the serum TSH level at a constant time of day. The aim of the study was to show the most important information about hypothyroidism in the elderly. Awareness in society can increase the chance of detecting this disease and will allow to quickly make a decision about therapy. It has been proven that with age there is a spontaneous increase in TSH concentration, therefore it is important to correctly diagnose older patients in whom the symptoms of the disease may remain unnoticed or justified by the presence of other diseases. In a significant percentage of patients, the disease is iatrogenic caused by adverse drug reactions or thyroid surgery. Untreated disease can result in complications in the form of slowing metabolism, cardiovascular disorders, depression and even hypometabolic coma. Levothyroxine is the drug of choice, a well-balanced diet is also helpful. Therapy should be started with small doses of the drug, closely monitored and selected so that the benefits of treatment outweigh the side effects.

Key words: *thyroid gland, hypothyroidism, aged.*

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Definition and epidemiology

Hypothyroidism is one of the most common chronic diseases occurring in the elderly. We can define it as a set of clinical symptoms caused by the lack or deficiency of thyroxine and/or triiodothyronine, which leads to a slowdown in metabolic processes [1]. Primary hypothyroidism is caused by abnormality in thyroid gland [2]. The second form of hypothyroidism is the central one, which is caused by abnormal function of pituitary gland, hypothalamus or both [3].

Subclinical (latent) hypothyroidism (SHT) is defined as an increase in serum TSH concentration above the upper limit of normal, with normal levels of free thyroxine (FT4) and triiodothyronine [1,4]. Subclinical hypothyroidism gives scanty symptoms and is considered the mildest of all types of hypothyroidism, but in 2–5% cases may progress to overt [5]. Overt hypothyroidism is characterized by the fact that TSH concentration is above the reference range and FT4 levels below the reference range of the population [1].

Most cases of primary hypothyroidism are caused by iodine deficiency and autoimmune diseases, which include Hashimoto. Iodine is a component of thyroid hormones, but is unevenly distributed throughout the world. In Europe, 44% of children consume iodine in insufficient quantities. In countries with normal iodine content, hypothyroidism is 1-2% and increases to 7% in people aged 85–89 [6,7]. Hypothyroidism is about 10 times less common in men than in women [8]. According to the latest research by Mateuszek et al., hypothyroidism is most often diagnosed in postmenopausal women [9].

Patomechanism

Studies show that aging causes an increase of TSH. The reason for this phenomenon is increased TSH biosynthesis and slowed metabolism. The slowed down distribution of TSH is caused by an increase in the degree of glycosylation of TSH and progressive kidney and liver dysfunction. Ano-

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ther change in the aging process is the reduction in total and free triiodothyronine levels despite small changes in thyroxine and free thyroxine levels. Small changes in fT4 concentration are caused by balancing the inhibition of hormone synthesis by its reduced degradation. The reduction of T3 concentration is also caused by a decrease in T3 and T4 production in the thyroid gland. The described disorder of feedback between the hypothalamus, pituitary and thyroid may occur together with a decrease in the sensitivity of peripheral tissues to thyroid hormones. Approximately 30% of women and 10% of older men have positive thyroid peroxidase antibodies, and older people with elevated TSH levels occur in 40-70% of cases. Despite this, only a small group of people who have been shown to have these antibodies develop hypothyroidism [1,10].

An important fact is the high proportion of iatrogenic conditions. The reason may be radioiodine treatment, taking too high doses of thyrostatic agents and side effects of some drugs, for example amiodarone, lithium salts or contrast agents [11,12]. The occurrence of subclinical hypothyroidism may be associated with treatment of symptomatic hypothyroidism with too low dose of levothyroxine [1].

The most common type of thyroiditis is Hashimoto's disease. The essence of the disease is the production of antibodies against thyroid peroxidase and thyroglobulin, which causes destruction of thyroid follicular cells. The highest incidence occurs between 45 and 65 years of age. Studies show that women get sick up to 20 times more often than men, which may be associated with estrogen involvement in pathogenesis. Current research by Sforza et al. indicates that patients with overt hypothyroidism show higher mortality [13,14,15].

Clinical presentation

An uncharacteristic clinical picture of developing hypothyroidism in old age may cause misdiagnosis [16,17]. Symptoms of hypothyroidism include fatigue, memory problems, weakness of tendon reflexes, constipation, dry skin, hair loss and paresthesia, intolerance of coldness, and weight

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gain [18,19,20]. In older people, the consequence of hypothyroidism may be a slow heart rate, an increase in arterial stiffness, a decrease in stroke volume, increased coagulation and an increased risk of atherosclerosis. In situations of physical exertion, impairment of left ventricular systolic function may occur. Some researchers say that the coexistence of hypercholesterolemia, constipation, congestive heart failure and macrocytic anemia in an elderly person at the same time may indicate hypothyroidism [16,21]. Hypothyroidism is usually mild, however in extreme cases it may lead to hypometabolic coma increasing probability of death [16,22].

Diagnosis

Diagnosis of hypothyroidism should begin with a serum TSH test. If the patient is hospitalized for another reason, TSH test should not be performed during an exacerbation. When interpreting the result, one should also remember about drugs that may affect the result. It is also good practice to perform the test always at the same time of day, preferably in the morning, which is associated with daily variability of the hormone concentration [16,23,24].

To exclude transient increases in TSH, the test should be repeated after 2–3 months, simultaneously performing an fT4 and thyroid peroxidase antibody test. The presence of a positive titer of anti-TPO antibodies increases the risk of transition to overt hypothyroidism. In older patients, total thyroxine and triiodothyronine levels should be avoided and replaced with fT3 and fT4. This recommendation is directed at the fact that the total concentrations are more strongly influenced by the drugs used, for example estrogens and amiodarone increase while carbamazepine and androgens lower the level of total thyroxine [16,18,23,25].

Indications for treatment

According to the recommendations of the Polish Endocrinological Society, the result of TSH>10mIU/l supports the introduction of treatment in

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patients with subclinical hypothyroidism, because this level increases the risk of overt disease and cardiovascular incidents [26,27,28]. In patients with asymptomatic disease at TSH<10 mIU/L, without cardiovascular risk factors or thyroid pathology, no indications for treatment have been demonstrated, and in patients with risk factors, treatment should be considered [27]. Especially in patients <65 years of age with symptomatic hypothyroidism, even if their thyrotropin concentration does not exceed 10 mIU/L [23].

Treatment

Levothyroxine supplementation is used to treat hypothyroidism. In the elderly, it should be introduced starting from small doses: 12.5–25 μg/day, then the amount should be gradually increased by 12.5–25 μg/day every 4–6 weeks, until the optimal dose. When selecting the dose, it should be taken into account that the need for thyroxine in the elderly is about 20-30% lower [16,29]. Also the patient should be informed that it is not recommended to take levothyroxine with substances that change its absorption, such as fiber, iron and soy milk [30]. The risk of overdose with levothyroxine has been demonstrated in 14–21% of patients. Symptoms of excessive drug supply include nervousness, atrial fibrillation or palpitations [31].

The level of TSH in the elderly during therapy should be 1.0–4.0 mIU/L, and in the younger people 0.5–2.0 mIU/L. After reaching the target value, the serum TSH concentration should be measured again after 2 months, followed by checks every 6–12 months [1,29].

Some patients, especially those with coronary heart disease, may not tolerate the full hormone dose. Cumulative dose once or twice a week should be considered in patients whose condition may interfere with regular hormone intake [29]. According to the latest research by Aziz et al., substitution treatment effectively reduces Carotid Intima-Media Thickness, which is a marker of cardiovascular disease. Before treatment, the pooled weighted mean difference (WMD) of CIMT was 0.44 mm and after treatment a significant decrease to 0.32 mm was achieved [32].

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An important aspect of treating hypothyroidism is also a properly selected diet. The iodine content should be 150 µg/day. In the case of Hashimoto's disease, the prophylactic use of a gluten-free diet is not recommended, but only the diagnosis of the patient for celiac disease, which may co-occur with this disease, because according to studies by Collins et al. he dose of LT-4 necessary to maintain euthyreosis in patients with co-occurrence of these diseases decreased after treatment of celiac disease from 154 µg to 111 µg [29,33,34].

Discussion

Studies confirm that one of the causes of hypothyroidism is iodine deficiency or excessive supply and radioactive iodine treatment [35]. The main non-iatrogenic cause of this disease is Hashimoto's disease [36]. Hypothyroidism more often affects women and the elderly [37]. Symptoms associated with hypothyroidism in the elderly are unfortunately often confused with the symptoms of aging [38]. Studies show that changes in the hypothalamic-pituitary-thyroid axis hormone, or TSH, are important in the occurrence of thyroid disease. This is due to changes related with TSH biosynthesis and a slowdown in metabolism [39]. Diagnosis of hypothyroidism should begin with a serum TSH test. The basic substance that is used during treatment is the sodium salt of levorotatory thyroxine [40]. In therapy, in addition to drug therapy, dietary treatment should be introduced, as research confirms that iodine deficiency in the diet may contribute to the impairment of thyroid gland function, therefore an appropriately balanced diet and healthy lifestyle are also important in the treatment of hypothyroidism [36].

Conclusion

Hypothyroidism is a significant problem in the elderly society. Aging affects the functioning of the endocrine organs, including the thyroid gland. The symptoms of hypothyroidism are in many cases difficult to di-

stinguish from the symptoms accompanying old age, so patients should regularly have blood tests and consult disturbing ailments with an endocrinologist. Hypothyroidism, despite the usually mild course, should not be ignored because of the possibility of hypometabolic coma. It can also cause emotional distress, depression or dementia, which significantly reduces the patient's quality of life. The basis for treating hypothyroidism is individually selected pharmacological treatment – mainly levothyroxine supplementation.

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Evaluation of Fatigue in Scientific and Clinical Practice – Review of Assessment Scales

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Abstract

Chronic Fatigue Syndrome/Myalgic Encephalomyelitis (CFS/ME) is a severe, disabling disease characterized with unexplained fatigue lasting for six or more consecutive months and other, additional symptoms. The etiology has not been proven yet, and the diagnosis is clinical, made on exclusion of other illnesses connected with fatigue and fulfil of special diagnostic criteria. To properly conduct scientific research and clinical practice with CFS patients, there are needed objective measuring scales for evaluation the severity of fatigue, as well as other accompanying symptoms. Objective assessment of fatigue is difficult to achieve. In this paper review we present a current knowledge update, about the fatigue and non-fatigue measures scales for CFS patients.

Key words: *chronic fatigue syndrome, fatigue, fatigue scales, fatigue evaluation.*

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Introduction

Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS) is a chronic, disabling illness, characterized by unexplained, debilitating fatigue lasting at least 6 months, accomplished by diverse set of symptoms [1]. Diagnosis is purely clinical, based on patients' past medical history, physician's examination and additional labolatory tests, aimed to exclude any other illnesses causing fatigue in its clinical picture. To diagnose CFS/ME it is necessary to fulfil the Centers for Disease Control and Prevention (CDC) criteria from 1994, also known as the Fukuda criteria (Table 1) [2,3]. CFS/ME occurs in children and adolescents, as well as adults. The etiology has not been established. Nowadays scientific interests of this problem significantly increased. Apart from diagnostic methods, it is important to use proper fatigue measure tools, to objectively evaluate level of fatigue and allow to compare prevalence, severity and progress of CFS symptoms [3]. The aim of this article is to present a review of fatigue measure tools for CFS patients. Each scale is described in following aspects: structure, interpretation, utility and psychometric properties.

Materials and methods

PubMed and Google Scholar database were searched and available literature was subjectively selected due to its usefulness in assessing fatigue in CFS patients for scientific or clinical purposes.

Results

Fatigue Severity Scale (FSS)

The 9-item Fatigue Severity Scale (FSS) is widely used self-report questionnaires to measure fatigue in patients with neurological disorders [4]. The concept of fatigue is based on the patients' own perceived state of energy or lack of it. The subjective nature of fatigue makes it difficult both to define and to measure [5]. It consists of nine statements, which

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each patient evaluates in seven-point scale. It is useful in CFS, because this unexplained disease indicates symptoms from muscles and nervous systems. Primarily, it was considered mainly as brain disease, so FSS is widely used to evaluate fatigue in numerous research about CFS.

Fatigue Assessment Scale (FAS)

Fatigue Assessment Scale (FAS) as a one-dimensional scale is used to measure the level of fatigue, mainly in patients who suffer from chronic diseases such as cancer or multiple sclerosis [6]. It consists of 10 statements about daily well-being over the past year in the context of fatigue and the answers can be given on a five-point scale. The overall result is a summation of the points gievn and is a representation of the severity of fatigue. A high result indicates signs of chronic fatigue [7].

The questions concern only the aspect of fatigue in everyday life. This scale describes fatigue in quantitative terms and is independent of other factors such as depression.

Researches show that the accuracy and reliability of FAS reach a high level, which goes hand in hand with usefulness [6]. In addition, the research analysis reports that FAS is a coherent scale, and the Cronbach's Alpha coefficient of 0.86 proves that FAS is a useful diagnostic tool in the process of diagnosis of chronic fatigue [7].

The reliability of the FAS scale was assessed relative to other scales, such as FS, WHOQOL-EF, CIS or MBI-EE, tested and used in daily clinical practice. It has been shown that among the compared scales, the FAS scale is most oriented towards the issue of fatigue, and the greatest similarity and correlation is with the FSS and CIS scale – Subjective Experience of Fatigue. An important issue to note is that the FAS scale shows a lower standard deviation from the commonly used scale, which is the CIS scale, however, higher than the FS scale. Nevertheless, the FAS scale is comparable to the other scales [8].

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Chalder's Fatigue Scale

Chalder's Fatigue Scale (Table 2) was originally developed to measure fatigue in CFS, however, it has been expanded over time and nowadays has a much wider application [9].

In the original version (CFQ 11) it is a scale consisting of 11 questions regarding the level of mental and physical fatigue. The extended scale CFQ 14 has been refined and questions including their quantity have been modified, however both scales serve the same purpose and have the same application in clinical practice. Both scales are used to describe the functioning and activity of patients with CFS, nevertheless, it is not possible to differentiate CFS from chronic fatigue syndrome in chronic diseases [2].

This theory is confirmed by B. Strouten in his research, in which he questions the credibility of the conducted tests of the effectiveness of the Chalder's scale, which was carried out by the author of the scale himself. B. Strouten shows that the CFQ scale is a good scale that meets all the requirements of a correct and reliable source for diagnosing CSF among healthy people, but it does not provide a comprehensive answer on the characteristics of a given fatigue or its source [10].

Among the general population in mainland China, studies differentiating the effectiveness of the 11-element scale from the 14-element scale were accomplished. Researchers based on the assumption that the 14-element scale is more often used in China compared its effectiveness with the 11-element scale regularly used in other regions. The research showed that both versions of the Chalder's Fatigue Scale have good reliability of internal consistency, although the ECV value in the 14-element version was 4.6 percentage points higher compared to the 11-element version. The value of the omega coefficient determined indicates satisfactory internal credibility. In addition, the result of the research was structural correctness for both Scale models, although the 11-element version proved to be better than the 14-element version in terms of efficiency of the data model. However, the general conclusion is that Chalder's Fatigue Scale is a reliable tool for assessing fatigue among the population studied [11].

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Fatigue Impact Scale (FIS)

The Fatigue Impact Scale (FIS) was established in 1994 and has since been especially recognized and popular both among researchers and in clinical practice. The proof for this claim is that the scale has been translated and approved in 30 languages. Furthermore, new, modified versions are created on its basis, usually in a short version, due to the fact that the scale is quite extensive and detailed – it consists of 40 elements, each of which is scored from 0 points (no problem) up to 4 points (very significant problem). Adding the obtained points to gives a score from 0 to 160, which relatively determines the degree of severity of symptoms of chronic fatigue [12]. FIS assesses the degree of fatigue in three areas of everyday life: cognitive functioning (10 elements), physical functioning (10 elements) and psychosocial functioning (20 elements).

The reliability and usefulness of the full-scale FIS scale was tested and compared to the MFIS and D-FIS scale, which are derived from the native FIS 40-element scale among patients with chronic gastrointestinal disorders and liver diseases. It has been shown that both the FIS and MFIS scale are effective and suitable for every day clinical practice, however the FIS scale can be problematic due to its size. In addition, the researchers came to the conclusion that the FIS scale shows a wide internal dependence, which definitely disturbs the correctness of the structure, which affects the independence of the scale, which is obligatory in the summing scales (only 11 out of 40 items did not show any relation to another element of the scale). What does not change the fact that Cronbach's alpha reliability coefficient, after performing Rasch analysis, in the FIS scale is high (alpha=0.94, and according to researchers J. Frith and J. Newton alpha ≥0.87 [1]), which also defines the scale as useful, though not entirely practical in its application [13].

Modified Fatigue Impact Scale (MFIS)

Modified Fatigue Impact Scale (MFIS) is a derivative of the 40-element FIS scale and was created during the development of the Multiple Sclero-

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sis Life Inventory (MSQLI) to assess the degree of fatigue in people with chronic diseases, especially multiple sclerosis. National Multiple Sclerosis Society members chose 21 items among 40 entities on the FIS scale, which showed the smallest correlation features between the elements and showed the smallest intrinsic relationship. This resulted in a collection of 9 elements from the category of physical functioning, 10 elements of the position of cognitive functioning and 2 entities of psychosocial functioning. The rating scale and scoring rules are no different from the standard version of the FIS test. The authors of the MFIS scale as well as persons participating in the modification of the FIS scale did not publish the justification for the selection of elements of individual subscales or evidence of verification of changes in the structure of the basic scale. By completing the MFIS questionnaire you can get points from 0 to 86, which is equivalent to the degree of severity of symptoms of fatigue [13].

MFIS is a short questionnaire and easy to execute among patients. Unfortunately, it does not provide sufficient opportunity to differentiate diseases such as depression, chronic fatigue syndrome, and chronic fatigue syndrome in chronic diseases. However, it has been proved that it is a helpful tool in the diagnosis of fatigue in itself, which in every day clinical practice can prove to be an invaluable help [14].

Fibro Fatigue Scale (FFS)

The Fibro Fatigue Scale (FFS) (Table 3), as the name suggests, was created for people with fibromyalgia disease. FFS consists of 12 elements measuring both the degree of fatigue and the severity of other symptoms such as pain, intestinal disorders, irritability, sadness, changes in muscle tone, sleep disturbance, memory loss, difficulty concentrating, autonomic disorders, headache and subjective experience of infection. Each element is subject to a 7-point rating from 0 – no symptoms after 6 – the strongest symptom. It may seem that Fibro Fatigue Scale is created individually for an individual disease entity, however, both fibromyalgia and CFS have a lot in common. Despite differences in diagnostic criteria, both diseases are characterized by a number of similar symptoms and ambigu-

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ous origin of the disease, which allows matching the same questionnaire for both patients with fibromyalgia and chronic fatigue syndrome [15].

Inter-rater reliability FFS was tested and a very high correlation among scale components was proved (the scale was tested using ANOVA and the index for the whole test was 0.98). This is a promising indicator of the usefulness and reliability of the test [15].

Functional Assessment of Chronic Illness Therapy (FACIT)

Fatigue is one of the most frequent complaints of older adults and is strongly associated with loss of independence, decreased physical activity, and functional decline. Although there are several validated tools for the measurement of fatigue, there is no gold standard [16]. One self-report questionnaire that has been validated for use with older adults is the Functional Assessment of Chronic Illness Therapy (FACIT) Fatigue Scale (Version 4) [17]. The FACIT Fatigue Scale is a short, 13-item, easy to administer tool that measures an individual's level of fatigue during their usual daily activities over the past week. The level of fatigue is measured on a four-point scale (4 – not at all fatigued to 0 – very much fatigued) [18]. The FACIT Fatigue Scale is part of a collection of health-related quality of life (HRQOL) questionnaires targeted to the management of chronic illnesses. Current research has demonstrated that the FACIT Fatigue Scale has sound measurement properties and is an appropriate and interpretable assessment of fatigue among individuals with various underlying conditions [17].

Supplementary scales used in fatigue evaluation

In addition to the typical scales intended for objective assessment of fatigue or the diagnosis of Chronic Fatigue Syndrome/Myalgic Encephalomyelitis, we also use some supplementary scales in conducting scientific research, as well as in clinical practice with CFS patients. These scales are not originally intended for assessing fatigue, but they allow to have a better view on the quality of life of CFS patients, or any other accompanying symptoms.

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For patients, fatigue significantly reduces their mood, attitude, decreases their daily functioning, social contacts, occupational activity, leads to a multifactorial reduction in the quality of life. The patient does not specifically feel fatigue, but rather mainly feels the worse quality of his life, caused by fatigue. Therefore, the assessment of quality of life (QOL) and health-related quality of life (HRQOL) indicators gives indirectly very clear information on the patient's general well-being. The better we treat the patient, reduce his fatigue, enable him to return to his everyday life, the more the patient will assess higher the quality of his life. Currently, many scales are being developed to assess QOL and HRQOL, the most commonly used are: SF-36, CIS20r, EQ-5D.

Reducing the level of professional and social activity, caused by increasing fatigue, very easily leads to the development symptoms of anxiety and/or depression. Therefore, for the purposes of diagnosing CFS/ME or assessing the severity of symptoms, the patient's evaluation should also include the assessment of psychiatric symptoms. In clinical and scientific practice, the Beck's Depression Inventory (BDI) and the Beck's Anxiety Inventory (BAI) are most often used. In order to obtain reliable results in scientific research, patients with co-depression or other mental illnesses are most often excluded from the diagnosis of CFS, therefore psychiatric consultation is important in multi-specialist assessment of the patient before diagnosis.

To assess a patient with CFS, scales can also be used to assess the severity of symptoms other than fatigue, which are additional to CFS. For this purpose, you can use the assessment of cognitive functions, memory tests, perceptiveness. In CFS there are often sleep disturbances overlapping, so it is useful to use also Epworth Sleepiness Scale (ESS).

There is definitely too little amount of scientific research about diagnosis and treatment of CFS/ME in children, which is the reason for the very rare diagnosis of this disease in the developmental population. At present, to recognize CFS in children and adolescents, we use exactly the same scales as in adults, due to the lack of validated scales for other age groups. However, it should be considered that the CFS/

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ME clinical picture in children is different, for example they more often present pain or flu-like symptoms, and less often cognitive impairment. These parameters should be included in special, adapted to different age groups scales. A good example is the Pediatric Quality of Life Inventory (PedsQL) [19], which allows an adequate and objective assessment of the quality of life of children in different age groups. For each age group (teenager 13–18 years old, child 8–12 y.o., young children 5–7 y.o.) it contains separate forms for the child and for the parent, and for toddler's parents (2–4 y.o.) it contains form only for parents. The parent is asked to answer questions about the child, while the child, depending on his age, pictorial or verbal answers to simple questions about his or her well-being and quality of life. This example shows that in order to obtain reliable and objective results, it is not possible to use the same scales for adults and children, the scales assessing the children's population should take into account a separate clinical picture, age of children, division into questions for the child and parent to objectively assess the symptoms in a child and make a reliable diagnosis.

Ending the chapter on supplementary scales assessing the severity of fatigue, we want to mention about the interesting Inflammatory Bowel Disease Fatigue Scale (IBD-F) [20]. This scale was originally created to assess the fatigue in patients with Crohn's Disease (CD) or Ulcerative Colitis (UC). These are chronic diseases characterized by inflammation of bowel and various complications, which may be accompanied by fatigue. Diagnosis of CD or UC currently excludes patients Chronic Fatigue Syndrome's diagnosis, however, this scale presents a new approach to assessing of fatigue and can also be used in patients with CFS/ME. The IBD fatigue rating scale consists of 3 sections – Fatigue Assessment Scale (consisting of 5 questions about self-assessment of fatigue severity, giving points from 0 to 4), IBD-Fatigue Impact on Daily Activities Scale (30 questions also assessing the patient symptoms on a scale of 0 to 4 points) and Additional Questions about your Fatigue (to which the patient can answer in a descriptive way, thanks to which the scale takes on a more individualized character). With this fatigue scale CFS

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patients are able to self-assess their fatigue and the impact it has on their lives, more easily raise their fatigue symptoms with healthcare professionals, assess whether changes in lifestyle are having any impact on fatigue levels, discuss their fatigue with family, friends and employers. This fatigue scale is an interesting measuring tool and should be included in the management of a patient with CFS/ME [20].

Discussion

Chronic Fatigue Syndrome/Myalgic Encephalomyelitis (CFS/ME) is a genuine and disabling illness of unknown origin, that can profoundly affect the lives of patients [3]. Many healthcare providers do not have sufficient knowledge about this disease and are skeptical about the seriousness of CFS/ME, mistake it for a mental health condition, or consider it a figment of the patient's imagination. Misconceptions or dismissive attitudes on the part of healthcare providers make the path to diagnosis long and frustrating for many patients [3]. That is why there should be more clinical and scientific discussions about this serious, chronic disease.

CFS/ME is currently the subject of many scientific studies whose purpose is to determine its etiology, discover biological diagnostic marker, establish reliable and accurate diagnostic criteria, as well as determine the effective treatment. To properly conduct scientific research and clinical practice with CFS patients, there is a need of objective measuring tools for evaluation the severity of symptoms, including fatigue. It is necessary to determine the severity of the symptoms depending on the therapeutic attempts made. For this purpose, we use fatigue assessment scales, which have been presented and described in detail in the above article.

It should be remembered that none of these scales were typically created for assessing patients with CFS/ME only. These scales were primarily created for evaluation of patients with neurological and psychiatric units, and others causing fatigue as one of the symptoms in their clinical picture. Therefore, despite many advantages, none of the presented scales is an ideal tool for assessing a patient with CFS/ME.

Fatigue is a non-specific and highly subjective symptom, so it should be assessed extremely carefully, so that the result is most reliable. Features of good fatigue measuring tool are: simple questions, a simple way of answering, good psychometric properties, a tool designed to measure fatigue should also be short and concise [2]. For this reason, the simplest form of fatigue testing is a one-dimensional form in terms of assessing its intensity. For this purpose, a Visual Analog Scale (VAS) or a 10-point Numerical Rating Scale (NRS) are often used to subjective assessment of the intensity of fatigue in the examined patient. However, such tools can be used to assist in assessing treatment progress or screening at a very early stage and are generally not very useful [2].

The diagnostic procedure requires reliable fatigue characteristics in the examined person. More complex assessments, however, require a reference to a specific concept of fatigue, some interpretation of this symptom, limitation of the assessed parameters (e.g. relating to disorders of the autonomic nervous system, cognitive impairment or sleep quality), as well as the determination of the evaluated time period related to symptoms.

Whitehead et al [21] analyzed selected tools for measuring fatigue in patients with chronic diseases based on the model of the ideal tool he proposed: useful (easy to understand, complete and not burdensome), useful for research/clinical practice (differentiating patients from healthy, fully determining the severity of fatigue and its impact on functioning, sensitive to changes related to progression or treatment), having good psychometric indicators. As a result, it turned out that of the 22 tools they assessed, only 17 met some of these criteria, and none of the tools assessed met all 3 criteria. Among the tools with good psychometric indicators, the researcher mentioned Fatigue Severity Scale.

Schwartz et al [22] performed an analysis of selected tools in terms of assessing what the minimal difference in test results entitled to infer about the actual change in the clinical picture of patient fatigue. It turned out that assessing the dynamics of fatigue reduction is problematic and is not well mapped by the available measurement tools.

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Comparative analysis of fatigue measurement tools performed by Jason's team [23] show that there are many scales that do not have sufficient sensitivity to isolate and differentiate people with CFS (positive and negative diagnosis). According to researchers, scales such as: Chadler's Fatigue Scale and Fatigue Severity Scale have sensitivity to distinguish people with Chronic Fatigue Syndrome from the group of healthy people, but they lack sufficient specificity (negative diagnosis). They also draw the problem of differentiating people with CFS from the population of patients with mental illness. The authors point to the assessment of post-exertional fatigue severity (post-exertional malaise, PEM), which is very characteristic symptom of CFS/ME and recommend taking it into account primarily on scales used to diagnose CFS from other chronic diseases [23]. The PEM assessment is included, for example, in the de Paul Questionnaire or in the ME/CFS Fatigue Types Questionnaire.

The presented scales, their theoretical and structural diversity and application possibilities require both the researcher and practitioner to learn them thoroughly.

Conclusions

Presented scales for fatigue evaluation show a wide range of application possibilities. However, not all of them have equal scientific and practical value. Fatigue is a cognitive phenomenon, in which measuring tools have to be used with extreme caution, to achieve a reliable result and to make an objective assessment. None of the presented evaluation scales is a perfect measuring tool. To increase the objectivity of fatigue measurement for scientific or clinical purposes, it is recommended to use more than one scale, paying attention to CFS patient capabilities.

Analyzing the available scales of fatigue assessment, a conclusion is made that further scientific research on Chronic Fatigue Syndrome is necessary, also attempting to create improved measuring scales, designed specifically for CFS, that can reliably distinguish CFS from other, congenial chronic diseases, such as mental or neurological units.

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