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Stroke prevention as practiced by nurse professionals in the Silesian Voivodship

Stosowanie profilaktyki udaru mózgu przez grupę zawodową pielęgniarek w województwie śląskim

Summary

The level of society's knowledge relating to the stroke and the appropriate ways of its prevention is still unsatisfactory. A complex approach to the stroke prevention (encompassing diet, physical activity, pharmacotherapy) addressed to the people belonging to the high-risk groups is one of the most significant tasks for the health care sector professionals, including nurses. The goal of the paper is to establish a dependency between: nurse seniority and their place of employment from the one side and the level of nurses' knowledge in the subject of stroke prevention and their involvement in the process of gaining and expanding this knowledge by participating in courses, trainings and lectures from the other side; between a particular component of the lifestyle in the form of physical activity and its share in the stroke prevention practices. Material and methods: The research has been conducted within the area of the Silesian Voivodship. 268 persons have participated in the survey. The research utilized the polling method. Nonparametric chi-squared test has been applied to verify significant differences between variables. Summary of the results and conclusions: The knowledge of the stroke prevention aspects among nurse professionals in the Silesian Voivodship is satisfactory. Senior nurses are more inclined to recommend and control preventive activities undertaken by patients. They also more frequently participate in preventive programs than the nurses with less working experience. The nurses who are physically active much more frequently recommended this form of prevention to patients and controlled its performance. This was not the case for the nurses who had not engaged in physical activity.

Key words: stroke, prevention, nurses, physical activity

Streszczenie

Poziom wiedzy w społeczeństwie na temat udaru mózgu oraz właściwych sposobów zapobiegania jego wystąpieniu jest wciąż niski. Profilaktyka udaru mózgu u osoby nim zagrożonej z zastosowaniem podejścia kompleksowego (dieta, aktywność fizyczna, farmakoterapia) jest jednym z istotniejszych zadań pracowników służby zdrowia,

w tym między innymi pielęgniarek. Celem pracy jest określenie istnienia związku pomiędzy: stażem pracy i miejscem pracy pielęgniarek a znajomością zagadnień dotyczących profilaktyki udaru mózgu oraz zaangażowaniem w zdobywaniu i poszerzaniu wiedzy w tej tematyce poprzez uczestnictwo w kursach, szkoleniach i wykładach; wybraną składową stylu życia pielęgniarek jaką jest aktywność fizyczna, a jej udziałem w profilaktyce udaru mózgu.

Materiał i metody: Badanie zostało zrealizowane na terenie województwa śląskiego. Przebadano 268 osób. W badaniu została zastosowana metoda sondażowa. Dla potrzeb weryfikacji obecności istotnych różnic między zmiennymi został zastosowany nieparametryczny test chi kwadrat. Podsumowanie wyników i wniosków: Znajomość zagadnień dotyczących profilaktyki udaru mózgu w grupie pielęgniarek w województwie śląskim jest na poziomie zadowalającym. Pielęgniarki z długim stażem pracy częściej zalecają i kontrolują podejmowane przez pacjenta działania profilaktyczne oraz uczestnictwo w programach profilaktycznych w porównaniu do pielęgniarek z krótkim stażem pracy. Pielęgniarki, które same podejmowały aktywność fizyczną, zdecydowanie częściej zalecały i kontrolowały ją u pacjentów, niż pielęgniarki, które nie podejmowały aktywności fizycznej.

Słowa kluczowe: udar mózgu, profilaktyka, pielęgniarki, aktywność fizyczna

Introduction

One of the most troubling health problems within modern societies is the stroke and its long-lasting consequences. According to the WHO's definition, the stroke is a set of clinical symptoms characterized by a sudden occurrence of focal or generalized disturbances in the brain activity having no other cause than a vascular disorder and persisting, unless earlier resulting in death, for over 24 hours.

Poland has a yearly count of stroke incidence of 60 000. Due to the high death rate strokes are commonly perceived as life threatening situations. The decisively higher death and disability rates than these observed in other countries contribute to a significant stroke-related problem observed in Poland (Ryglewicz, 2000). A research conducted in the European countries foresees an increase in the stroke incidence of almost 40 % within the period of the next 20 years (Truelsen, Piechowski-Jozwiak, Bonita, 2006).

The most significant non-modifiable stroke factor is the age. Ischemic stroke incidence increases with age, especially among people who are over 55 years old. From this age the risk of suffering a stroke is doubled with every consecutive decade. For the people who are below 85 the stroke incidence is higher among males. This pattern is reversed for those over 85 (Petrea, Beiser, 2009). In the aging society the stroke will have an increasingly higher influence on the state of health and on the socio-economic conditions (Świat, 2010). In terms of the modifiable risk factors, the highest importance is ascribed to the arterial hypertension. It significantly increases the risk of stroke. Systolic blood pressure persistently occupying the upper ranges of the norm (systolic blood pressure in the range of 120-140 mmHg, diastolic blood pressure in the range of 80-90 mmHg) carries a risk of a stroke almost twice as high as the normal blood pressure (Seshadri, Beiser, Kelly-Hayes, 2006).

The level of knowledge on the stroke and the appropriate ways of its prevention is still low within the society, which leads to belittling the symptoms and negligence of the prevention. From the economic perspective, prevention belongs to the most effective and most beneficial ways of combating diseases (Knypl, 2000). Prevention definition according to WHO describes the process as all the activities aimed at preventing diseases through early discovery and treatment.

Stroke prevention is becoming the most important activity within the field of controlling vascular diseases of the brain. Its goal is to prevent the development of the stroke risk factors, to limit their numbers, and secure control once they have occurred (Nowacki, Bajer-Czajkowska, 2008). Stroke prevention can be divided into:

- primary stroke prevention, focused on diagnosis and treatment of the conditions perceived as risk factors for the stroke incidence.
- secondary stroke prevention, which should be applied in case of the people who have suffered a stroke and is intended to minimize the risk of recurrence. Main elements of the secondary prevention include: changing the lifestyle, as well as treatment and modification of the risk factors (Siebert, Nyka, 2007).

A complex approach to the stroke prevention (encompassing diet, physical activity, pharmacotherapy) for the people belonging to the high-risk groups is one of the most significant tasks for the health care sector professionals, including nurses. Correct realization of the task requires a suitable knowledge of the topic, as well as motivation to undertake the mentioned activities which quite often transgress the usual scope of responsibilities or consume additional time resources. Knowledge in the scope of health-determining factors, mainly lifestyle, constitutes an essential element in the process of shaping health-supporting attitudes (Gacek, 2011).

Patient education should be conducted on the occasion of every contact between the patient and Health Care services. The highest success rate of the prevention can be achieved when the prevention activity is addressed to young people facing high risk levels in terms of various diseases, including the stroke. The first step of the well managed prevention should be the discovery of individuals belonging to the groups threatened with a higher risk of suffering a stroke. Within the Health Care structures currently in force in our country this task is largely attributed to family physicians (Knypl, 2000). The effectiveness of the preventive actions is also conditioned by the appropriate control measures. Control frequency can be increased by nurses who stay in contact with patients on a more regular basis than physicians and are not restricted by appointments.

Promoting the knowledge on the stroke prevention and its treatment is a priority set out by the European Stroke Initiative (EUSI), an action undertaken by the World Health Organization.

Polish National Health Program for the years 2007 - 2015 assumed decreasing the incidence and premature morbidity caused by cardiovascular diseases, including strokes. Focused around promotional and preventive activities, the National Health Program is realized by multiple social organizations and it sees the health care professionals as the key players in the process. Respective groups of medical professions whose representatives stay in a direct contact with patients should play a decisive role in the realization of these goals, especially in terms of the stroke prevention. Realization of all the professional activities by physicians and nurses, including health promotion and prevention, requires

not only an appropriate level of knowledge, but first and foremost a set of suitable life attitudes and activities. These are essential to build the role models, stimulate interest in health and develop one's responsibility for the health of their own and others (Warchoł-Sławińska, Włoch, 2003). One of the most important factors influencing the correct psychological and physical development of children and teenagers, as well as the health and life condition of the adults is physical activity (Chabros, Charzewska et al., 2008).

Society expects from the representatives of medical professions patterns of physical activity that are worth following (Muszalik, Kędziora – Kornatowska, et al., 2007). These special groups of medical professions exercise the ability of multidirectional influence, that is the ability to promote health and health education, to prevent, to sustain society's health condition on a desired level (Brodzińska, Modzelewska, et al.2010).

Study goal

The goal of the research is to evaluate dependencies between:

- nurse seniority and their place of employment from the one side and their level of knowledge in the subject of stroke prevention and the involvement in the process of gaining and expanding this knowledge by participating in courses, trainings and lectures from the other side.
- particular component of the lifestyle in the form of physical activity and its share in the stroke prevention practices

Material and method

The research has been conducted in 2012 within the area of the Silesian Voivodship. 268 people have been surveyed. This group comprised 261 women and 7 men who are active in the nurse profession. Individuals participating in the research were employed in: municipal hospital, voivodship hospital, clinic, health centers – Non-public Health Care Centre (Niepubliczny Zakład Opieki Zdrowotnej, NZOZ) or Health Maintenance Centre (Samodzielny Publiczny Zakład Opieki Zdrowotnej, SPZOZ). Results have been presented on a percentage scale.

The research project secured anonymity and confidentiality for all of its participants. Participation in the research was voluntary.

Method

The research utilized the polling method. For this purpose the authors have composed a survey questionnaire. The survey comprises 59 questions, most of which are closed or one-choice questions. The initial part of the survey includes questions on age, sex, educational background, work experience, place of employment, physical well-being, job satisfaction. The second part consists of questions on the types of the undertaken physical activity, diet, used stimulants. The third part of the survey comprises questions on the widely understood prevention aspects, including stroke prevention and the frequency of recommending preventive actions to the patients, as well as on the participation in the stroke-related courses and trainings.

A database has been composed from the received answers, which was then used in further analysis. Nonparametric chi-squared test, ANOVA variance analysis, Kruskal-Wallis test have been applied to verify significant differences between variables. The applied statistical significance level was $p < 0,05$.

Research results overview

To the question asking to point the correct definition of the primary prevention (Fig.1) decisive majority of nurses (from 84% to 100% in the respective groups) provided the correct answer - B (primary prevention is intended to reduce the incidence of a disease. This is achieved by supporting health through the reduction of risk factors or propagation of factors reducing vulnerability to a disease e.g.: through the improvements in nourishment, physical condition). All the nurses possessing a work experience of more than 31 years highlighted the correct answer - B. The nurses working in the profession less than 10 years (13,6%) selected the incorrect answer - C (is intended to reduce the duration of the disease or to slow down its progress, as well as to prevent complications). Only 11,6% of those surveyed with the working experience of 21-30 years selected the incorrect answer A (is intended to limit the incidence of persistent disease consequences. It comprises activities aimed at reducing the frequency of injuries and disabilities). The chi-squared test (χ^2) analysis demonstrated significant differences in the answers to this question ($\chi^2=13,91$; $df=6$) $p<0,05$. The frequency of answers to this question is significantly related to the nurses' working experience.

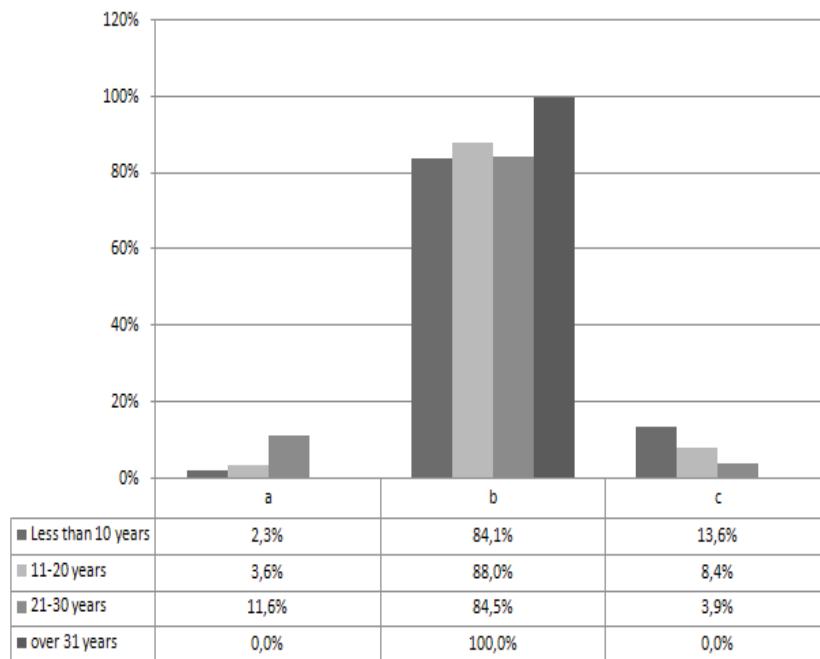


Fig.1. Knowledge of the health prevention definition as provided by the nurses with a particular level of working experience

In case of the question asking to highlight the most precise stroke definition (Fig. 2) the most frequently selected answer was the correct answer - A (it is a set of clinical symptoms characterized by a sudden occurrence of focal or generalized disturbances in the brain activity having no other cause than a vascular disorder and persisting, unless earlier resulting in death, for over 24 hours). Providing the correct answer was most problematic for the nurses with the working experience of less than 10 years, only 56,8 % of them highlighted the answer A. Approximately 23% of the nurses belonging to this group selected answer - B (it is a set of clinical symptoms characterized by a sudden occurrence of focal or generalized disturbances in the brain activity which cease completely within 24 hours since their occurrence and have no other cause than a vascular disorder) and approximately 21% selected the answer - C (it is a set of brain activity disturbances persisting for over 24 hours which have no other cause than a vascular disorder). The most numerous group, over 85%, among the surveyed with the working experience of 11-20 years selected the answer - A. The chi-squared test ($\chi^2=16,44$; $df=6$) $p<0,05$. The frequency of answers to this question is significantly related to the working experience.

The highest level of knowledge of the definition was presented by the nurses employed by the Voivodship Hospital (84,9%) and by the Non-public Health Care Centers (80%). The percentage of those possessing the knowledge of the most precise definition amounts to 60% in case of the emergency aid workers, 63,1% in the municipal hospital, and over 70% in the Health Maintenance Centers. The chi-squared test ($\chi^2=18,00$; $df=8$) $p<0,05$. The frequency of answers to this question is significantly related to the nurses place of employment.

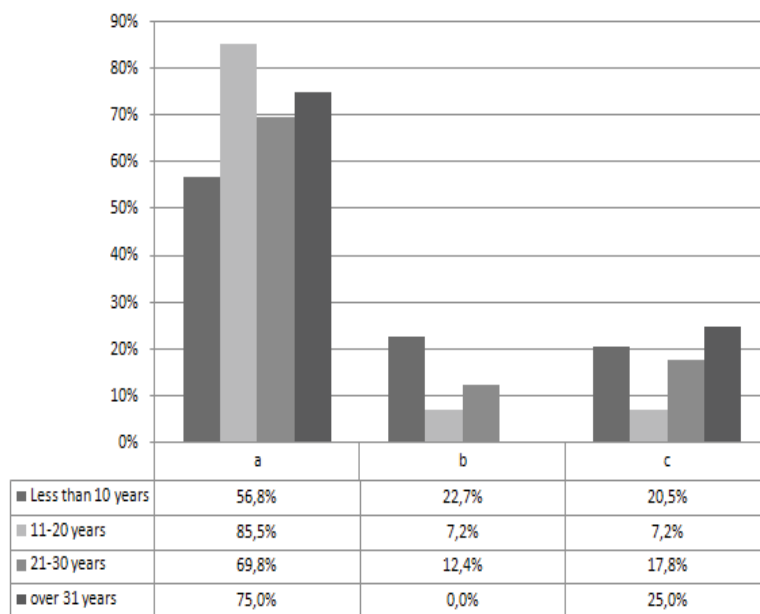


Fig.2. The knowledge of the stroke definition among the nurses with a particular level of working experience

The nurses with the working experience of 11-20 years most frequently participated in trainings, courses or lectures in the stroke subject area, of whom: 9,6% in the last year, 7,2% in the last 2 years and 6% in the last 3 years. Nurses with the working experiences of over 31 years (33,3%) constituted a very numerous group of participants in trainings, courses or lectures which took place in the last 3 years. The highest percentage of the respondents did not participate in trainings, courses or lectures at all. The chi-squared test (χ^2) analysis demonstrated significant differences in the answers to this question ($\chi^2=29,61$; $df=12$) $p<0,05$. The frequency of answers to this question is significantly related to the working experience.

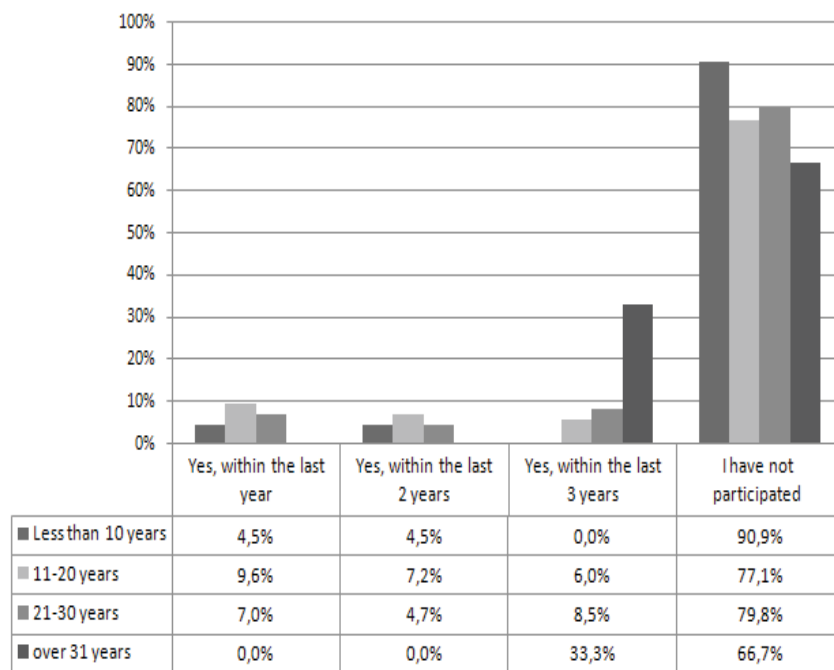


Fig.3. Participation in trainings, courses and lectures on the stroke treatment and prevention according to the nurses' working experience

The nurses with the working experience of over 31 years constituted the largest (66,7%) of all the surveyed groups which controls patient's physical activity during every conversation. The highest percentage (45,5%) of the nurses who do not control patient's physical activity has a working experience of less than 10 years. The chi-squared test (χ^2) analysis demonstrated significant differences in the answers to this question ($\chi^2=20,78$; $df=6$) $p<0,05$. The frequency of answers to this question is significantly related to the nurses' working experience.

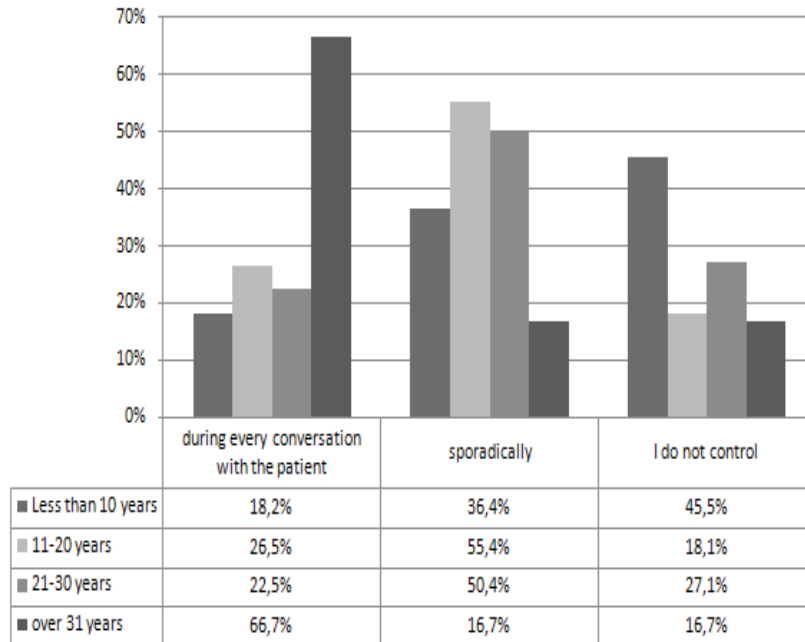


Fig.4. Control of patient's physical activity according to the nurses seniority

In terms of physical activity, the dose most frequently recommended by nurses was 1-2 hours of daily activity (Fig.5). However the largest group of those selecting this answer was constituted by the nurses with a working experience of over 31 years (50%). Amount of physical activity adjusted to the requirements was recommended by the nurses with a working experience of less than 10 years (15,9%). A very numerous group of the surveyed had no opinion on the recommended dose of the physical activity. The chi-squared test (χ^2) analysis demonstrated significant differences in the answers to this question ($\chi^2=33,65$; $df=12$) $p<0,05$. The frequency of answers to this question is significantly related to the nurses' working experience.

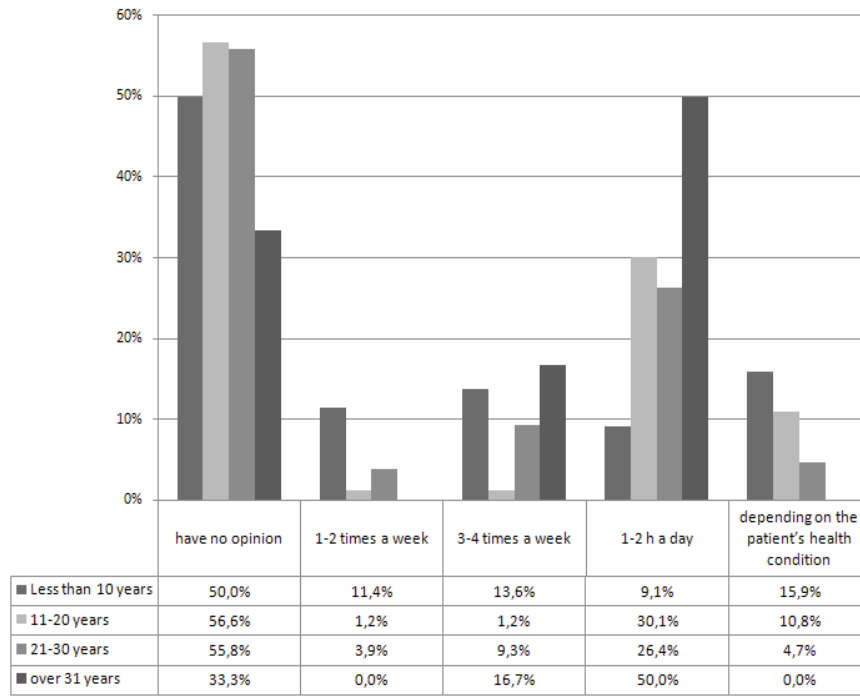


Fig.5. Nurses' working experience and the assessment of recommended weekly dose for the patient's physical activity

In case of the question on the amount of energy expenditure for the patients participating in the stroke prevention (Fig. 6), the most frequently selected answer was "I have no opinion" for each of the analyzed nurse groups. Nurses with the working experiences of over 31 years (33,3%) highlighted that the amount of energy expenditure will depend on the patient's health condition (33,3%). The chi-squared test ($\chi^2=29,61$; $df=12$) $p<0,05$. The frequency of answers to this question is significantly related to the nurses' working experience.

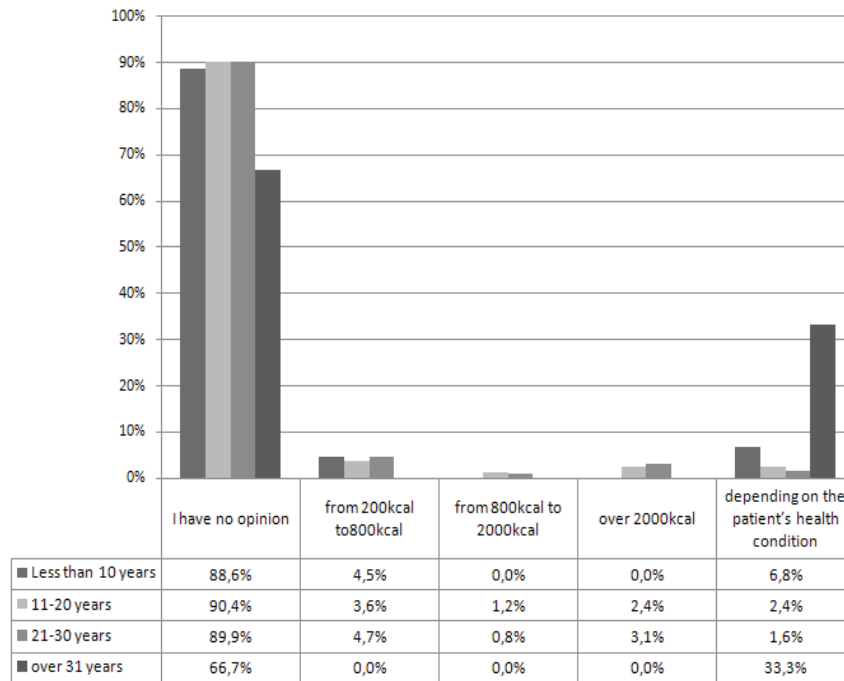


Fig.6. Recommendations for the amount of energy expenditure for the patients covered by the stroke revention as conditioned by to the nurses working experience

In all of the places of employment pointed out below (Fig.7) nurses recommend to their patients participation in the prevention programs with the frequency adjusted to the requirements, which constitutes the highest percentage of the provided answers (over 50%). Participation in the prevention programs is recommended during every conversation with the patient by 10% of the respondents working in the respective places of employment with the highest number in the Non-public Health Care Centers (11,4%). The chi-squared test (χ^2) analysis demonstrated significant differences in the answers to this question ($\chi^2=26,09$; $df=12$) $p<0,05$. The frequency of answers to this question is significantly related to the nurses place of employment.

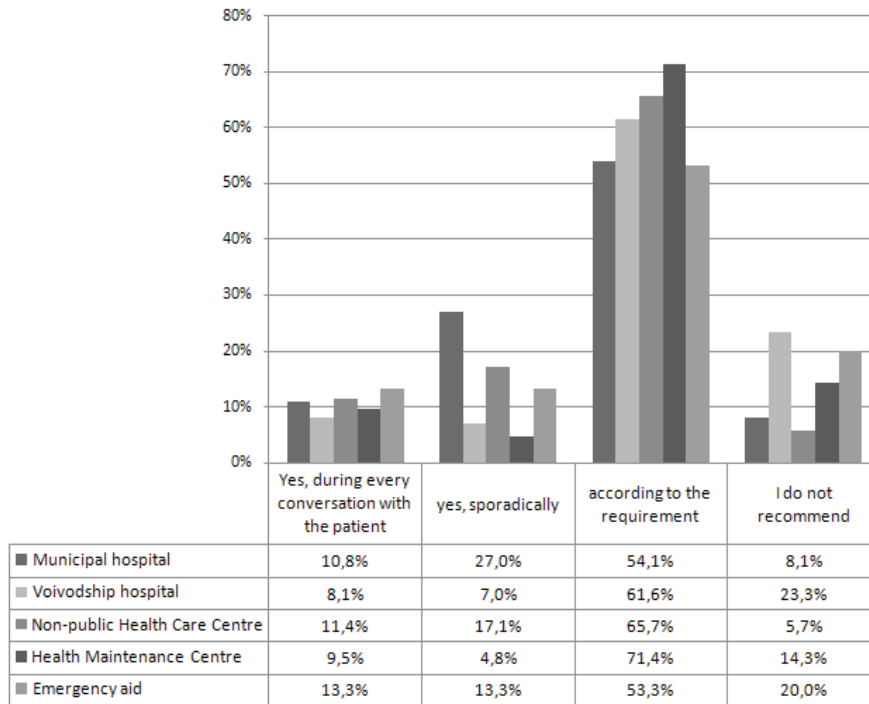


Fig.7. Recommendations for the patients' participation in the prevention programs

The timeframe for patient's submission in a specialized treatment centre since the moment of first presenting stroke symptoms most frequently declared by nurses was maximum 12 hours (Fig. 8), a very high percentage of those in favor of this answer belonged to the group of nurses employed in the emergency aid sector (53,3 %). The answer "as soon as possible" was also frequently selected by nurses, especially those employed by municipal hospitals (55,3%) and the voivodship hospital (59,1%). The answer "within an hour since the presentation of symptoms" was most frequently selected by the nurses employed in the Health Maintenance Centers (15,4%). The chi-squared test (χ^2) analysis demonstrated significant differences in the answers to this question ($\chi^2=35,86$; $df=20$) $p<0,05$. The frequency of answers to this question is significantly related to the nurses place of employment.

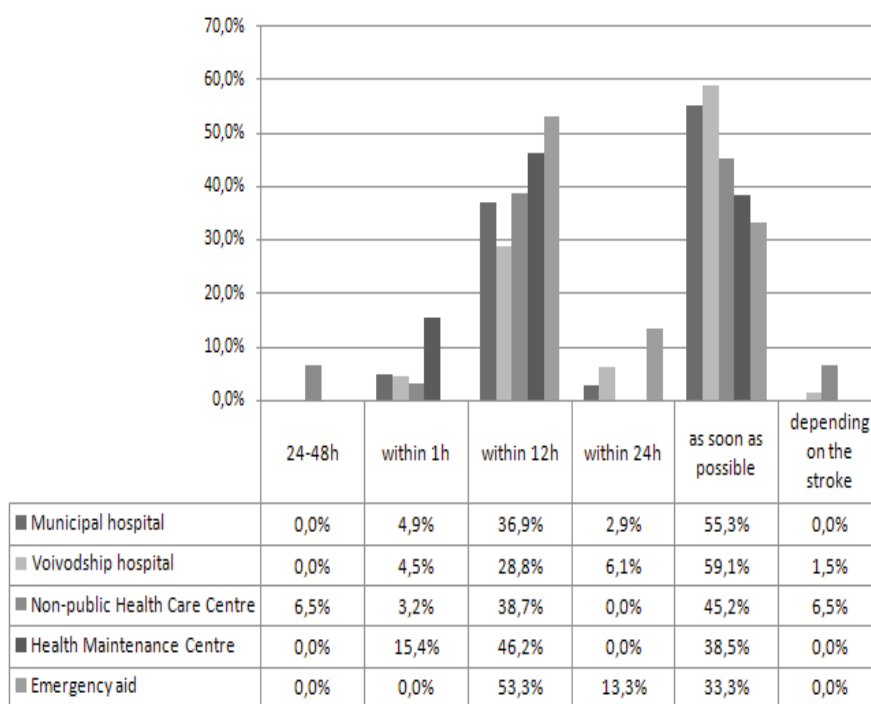


Fig.8. The timeframe for patient's submission in a specialized centre since presenting stroke symptoms

The nurses who undertook physical activity on a daily basis (Fig.9) recommended physical activity to patients during every conversation (51,5%) or as required (39,4%). The nurses who did not undertake physical activity were also not occupied with recommending physical activity (27,1%). The chi-squared test (χ^2) analysis demonstrated significant differences in the answers to this question ($\chi^2=37,98$; $df=3$) $p<0,05$. The frequency of answers to this question is significantly related to the undertaken physical activity.

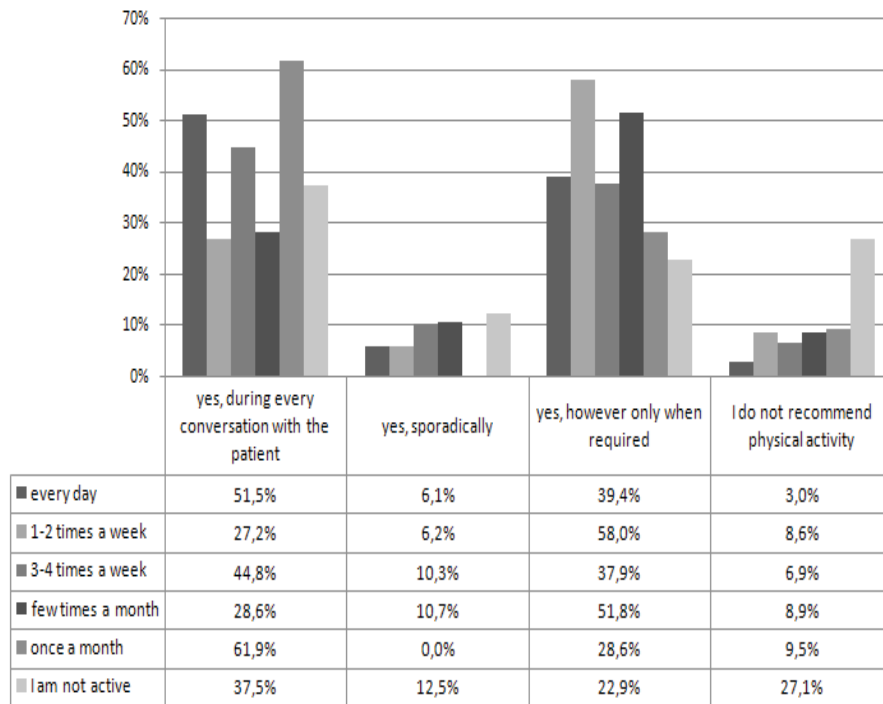


Fig.9. Frequency of the physical activity undertaken by nurses and its recommendation to patients

The nurses who recommended physical activity to patients during every conversation much more frequently declared significant influence of physical activity on man's health (Fig.10). A very high percentage of the provided answers can be noted in the grade range 5 to 10 (where 10 signifies the highest grade). The chi-squared test ($\chi^2=45,11$; $df=27$) $p<0,05$. The frequency of answers to this question is significantly related to the subjective evaluation of the influence physical activity exercises upon health.

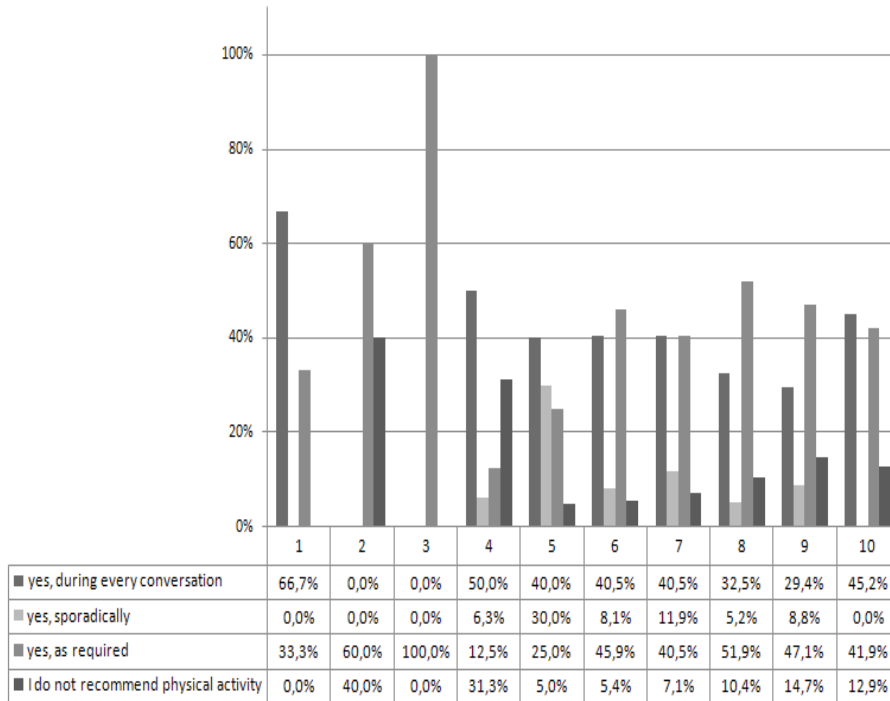


Fig.10. Subjective evaluation of the influence physical activity exercises upon health and recommending physical activity to patients.

The nurses who evaluated the influence of physical activity on health as very significant (grades 9,10 on the scale), controlled physical activity among patients during every conversation (Fig.11). On the other hand the nurses who evaluated the influence of physical activity on health as low (grade 3 on the scale) also did not control it among patients. The chi-squared test (χ^2) analysis demonstrated significant differences in the answers to this question ($\chi^2=31,00$; $df=18$) $p<0,05$. The frequency of answers to this question is significantly related to the subjective evaluation of the influence physical activity exercises upon health.

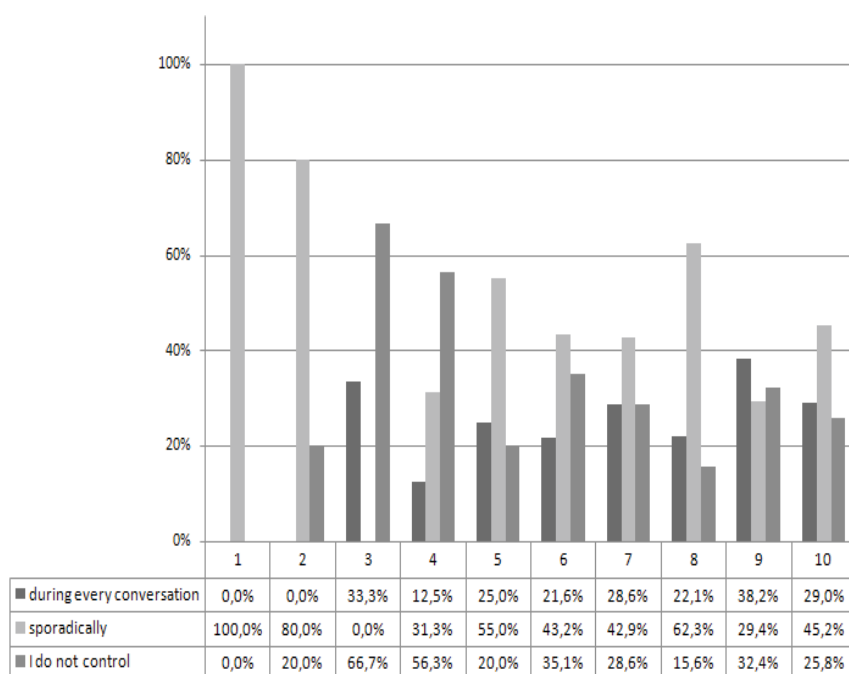


Fig. 11. Subjective evaluation of the influence physical activity exercises upon health and the control of patients' physical activity.

Discussion

According to the Nurse and Midwife Professions Act (Polish Journal of Laws *Dziennik Ustaw* 2011 No. 174, item 1039, art.4 p.1), performance of the nurse profession focuses on the provision of health services, especially in the scope of:

- 1) recognizing patient's health conditions and needs;
- 2) recognizing patient's nursing problems;
- 3) planning and performing the nursing care over a patient;
- 4) self-reliant provision of timely services in the scope of prevention, diagnosis, treatment and rehabilitation, as well as medical emergency activities;
- 5) physician's orders realization in the scope of diagnostic, treatment and rehabilitation processes;
- 6) adjudicating in terms of the type and scope of the nursing and caring services;
- 7) health education and promotion.

In line with the above nurses form the most suitable group within the whole of medical personnel in terms of engaging patients to undertake preventive actions, particularly in the light of the fact their contact with patients is more frequent than this of the physician. Moreover, nurses' knowledge on the prevention activities is of a high level, as proved by the results of the above research. It is evident in the conducted study that nurses possess a significant knowledge in the field of educational activities pertaining to stroke

prevention. Over 80% of the surveyed nurses, regardless of the working experience, were able to highlight the primary prevention definition (Fig. 1). Additionally, they presented a satisfactory level of familiarity with the precise stroke definition (Fig. 2), as well as remained attentive to the importance of physical activity as an aspect of life (Fig. 4).

Majority of nurses could specify the approximate timeframe between the occurrence of stroke symptoms and the moment a person is to be transported to a specialized centre (Fig. 8), providing the answer “as soon as possible” or “within an hour”. Time is a very important factor in the stroke progression and it may contribute to saving a patient’s life as well as to reducing the stroke consequences. Patient who has suffered a stroke requires an urgent treatment within hospital environment, preferably in specialized units, stroke-specialized sub-departments. Numerous patients suffer intense disturbances of the basic physiological activities. Quick assessment of the patient’s condition and immediate application of a suitable treatment are the only possible ways of stopping and sometimes even reversing the process (Fischer, Palasik, 2006).

An important element of the educational initiative is subjecting medical personnel, including family physicians and nurses, to training in the scope of the standards in the approach to the patients with an increased risk of developing vascular diseases of the Central Nervous System, also in terms of diagnostic and therapeutic activities (Kozera, Świerkocka-Miastkowska, et al., 2007). The surveyed nurses demonstrated a willingness to participate in the stroke-related courses, trainings and lectures (Fig. 3). The highest level of involvement was observed among the nurses with the longest working experience.

Presently 4 main problems can be differentiated which are encountered by the medical personnel in relation to the society’s knowledge of chronic diseases:

- existing knowledge relates only to the most serious threats - and these are easy to be ignored as they constitute distant prospects and occur only in extreme cases,
- lack of knowledge on the less severe consequences, progressive development of the disease and how it contributes to the gradual degradation of the organism, successively attacks multiple organs, and thereby impairs the overall bodily functions; this ignorance leads to belittling one’s health condition and the need to receive regular treatment
- lack in awareness of the fact the appropriate conduct, complying to the medical personnel’s recommendations may improve the health condition, delay disease development
- lack of knowledge on the positive results of complying to recommendations (Kardas, 2010).

The main goal of the patients’ education is to provide them with the essential information on the disease, its progression and complications, and in the case of chronic diseases which contribute to stroke incidence - application of effective controlling mechanisms. The goal of the educational programs addressed to the patient society is to promote an active participation in the treatment and conscious health-related decisions. The key role may be played by the promotion and support of the activities beneficial to health, including lifestyle modifications (Kozera, Świerkocka-Miastkowska, et al., 2007). Conducting and undertaking suitable prevention activities by medical personnel, first and foremost the nurses, is of a high importance.

The years 2003 - 2008 marked the period for implementing the National Program for the Prevention and Treatment of Cardiovascular Diseases POLKARD which was focused around the cardiovascular diseases, including the diseases of the brain vessels. The program encompassed activities in the field of prevention, diagnosis and treatment of circulatory diseases, equipment audit, health care standards and monitoring the transformations taking place in Poland. The neurological part of the National Program for the Prevention and Treatment of Cardiovascular Diseases POLKARD for the years 2003-2008 continued the work of the National Program for the Stroke Prevention and Treatment. Presently the Polish National Health Fund (Narodowy Fundusz Zdrowia, NFZ) realizes numerous preventive programs addressed to the people from the risk groups and mainly aimed at early disease discovery. However, the problem of stroke prevention has not been differentiated from the prevention programs managed by NFZ, some of its aspects can be found in the program for the prevention of circulatory and tobacco-related diseases. Thus the more significant meaning can be ascribed to the medical personnel's individual involvement in the stroke prevention activities. The conducted research proves the recommendations to participate in numerous prevention programs are provided during every conversation between nurses and their patients (10 % of respondents in each specified place of employment) and according to the current requirements (over 50% in the respective places of employment) (Fig. 7).

In order to correctly stimulate the development of the whole organism, physical activity should be the man's companion throughout the whole life. Medical care on a high level is not a sufficient alternative in combating diseases since a regular physical activity minimizes the risk (Adamczyk, Boguszewski, et al., 2011). Limited physical activity, as well as fat-rich diet may be traced back to the childhood and adolescence. Their adult life consequences include myocardial infarction or stroke (Knypl, 2000). There is a deficiency in physical activity within the Polish society, the passivity phenomenon becomes increasingly frequent. In a nation-wide survey 29% of teenagers declared spending 4 hours a day on watching television and more than 31,7% used computer for at least 2 hours a day. Insufficient physical activity and inappropriate diet result in such consequences as the increase in overweight and obesity incidence, which may constitute a beginning to the incidence of serious diseases (Chabros, Charzewka et al. 2008). Negative consequences of an unhealthy lifestyle affect both men and women alike, albeit at a different age.

Stroke prevention should include a recommendation to undertake regular, limited physical activity, at least twice a week for approximately 30 minutes (Świerkocka-Miastkowska, Kozera, et al., 2007). According to Strepikowska and Buciński a regular, moderately intense physical exercise is recommended in the form of 30-minute daily sessions (Strepikowska, Buciński, 2009). Beneficial are also dynamic exercises such as e.g. bicycle riding or swimming. The scope and the intensity should be adjusted to an individual patient (Świerkocka-Miastkowska, Kozera, et al., 2007). In the conducted research nurses most frequently recommended unrealistic daily dose of physical activity amounting to 1-2 hours (Fig.5). It can be noted the nurses who undertake physical activity themselves and who believe physical activity influences human health condition recommend it to patients (Fig. 9, 10) and control its performance (Fig. 4, 11).

It is important that the stroke prevention practice adjusts the daily portion of calory intake to the energy intake requirements, which allows to avoid overweight or contributes to its reduction (Świerkocka-Miastkowska, Kozera, et al., 2007). Balanced, low-fat and vitamin-rich diet is one of the significant elements in the prevention of numerous diseases. The people who are aware of how important it is to implement a balanced diet and physical activity into the process of disease prevention are more inclined to lead a health-supporting lifestyle (Waśkiewicz, 2010). It may be disturbing to note, that a significant majority of nurses participating in the research had no opinion on the subject of recommended energy expenditure (Fig. 6) or found it difficult to provide an answer to this question.

In the healing, recovery and caring activity the health service personnel, apart from fulfilling their fundamental professional obligations, should also stimulate the promotion of an active lifestyle among patients and act as role models to promote the desired health-supporting habits. However, if the health care personnel do not realize and do not pursue a healthy lifestyle themselves, they fail at becoming the creators of the widely understood health (Lewandowska, Korabiewska et al., 2008).

Conclusions

1. The knowledge of the stroke prevention aspects among nurse professionals in the Silesian Voivodship is satisfactory.
2. Nurses in the Silesian Voivodship demonstrate a willingness to participate in courses, trainings, and lectures on the topic of stroke prevention.
3. Senior nurses are more inclined to recommend and control preventive activities undertaken by patients, as well as more frequently participate in preventive programs as compared to the nurses of lesser seniority.
4. The nurses who undertook physical activity themselves much more frequently recommended it to patients and controlled its performance as compared to the nurses who did not engage in physical activity.

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