Abstract – Introduction. In the theoretical aspect of health promotion, the issue of developing pro-active behaviour leading to a healthy lifestyle is of vital importance. Self-efficacy serves as an indicator of intended and taken actions in different spheres of health behaviour. The recognition of the level of self-efficacy and its connection with health behaviour in medical and non-medical professionals was the aim of this study.

Materials and method. The research was conducted among 598 adult working people, medical and non-medical professionals. Diagnostic survey was used as a research method. The research tool consisted of: The General Self-Efficacy Scale (GSES) and the Health Behaviour Inventory (HBI).

Results. The subjects working in medical and non-medical professions had high levels of self-efficacy (7-10 sten). The analysis results showed a statistically relevant correlation between the overall assessment of the level of health behaviour and the level of self-efficacy among the individuals representing medical and non-medical professions (p < 0.05).

Conclusions. The research findings indicate that, regardless of the profession (medical or non-medical), high self-efficacy leads to higher levels of health behaviour. This observation is an important factor in planning health education and promotional actions, which should focus on the development of positive health behaviour by reinforcing the self-efficacy in people.

Key words - self-efficacy, health behaviour, working people.


Wyniki. Badani wykonujący zawody medyczne i pozamedyczne uzyskali wysoki poziom własnej skuteczności (7-10 sten). Przeprowadzona analiza wykazała istotną statystycznie zależność pomiędzy ogólną oceną poziomu zachowań zdrowotnych a poziomem własnej skuteczności wśród przedstawicieli zawodów medycznych i niemедycznych (p < 0.05). Wnioski. Wyniki badań pozwolą stwierdzić, że niezależnie od rodzaju wykonywanej pracy (zawody medyczne i pozamedyczne) wysokie poczucie własnej skuteczności determinuje wyższy poziom zachowań zdrowotnych. Powyższe spostrzeżenie stanowi ważną przesłankę do planowania działań z zakresu edukacji zdrowotnej i promocji zdrowia, które w rozwijaniu pozytywnych zachowań zdrowotnych powinny się opierać na wzmacnianiu poczucia własnej skuteczności.

Słowa kluczowe – poczucie własnej skuteczności, zachowania zdrowotne, osoby pracujące.

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A. The idea and the planning of the study
B. Gathering and listing data
C. The data analysis and interpretation
D. Writing the article
E. Critical review of the article
F. Final approval of the article

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I. INTRODUCTION

The concept of self-efficacy, also called personal efficacy, was formed in 1977 by Albert Bandura [1]. It concerns an individual's belief in their ability to succeed in accomplishing a task, regardless of the obstacles encountered during the process of reaching goals [2] and it is a part of social and cognitive approach to a human being. According to the assumptions of this theory, human behaviour is determined by expectations for: a situation, result of actions and self-efficacy. The first two concern the perceived consequences of actions, whereas the sense of self-efficacy refers to the action itself and it forms a part of personal action control [3]. So, the sense of self-efficacy is defined by Lent [4] as a set of dynamic beliefs connected to specific areas and types of activities. Self-efficacy and self-efficacy expectancies are considerably persistent and they are shaped in the process of a person’s development. Generalized self-efficacy, that is general belief in one’s abilities and specific self-efficacy – the belief in one’s efficacy related to choices in specific situations, play an important role when selecting a specific behaviour [5]. Self-efficacy is a factor that determines change in behaviour: it enables proper assessment of a situation and a search for efficient way of coping with it when facing difficulties and obstacles

Depending on the sense of self-efficacy, people’s thinking, feeling and actions will vary [8]. The stronger the belief in the ability to solve a certain problem, the higher the level of motivation to take steps to solve it. Moreover, the sense of self-efficacy indirectly influences behaviours thorough the impact on selection of goals, i.e. the stronger the sense of self-efficacy, the more ambitious the goals of a person. Another area influenced by the sense of self-efficacy is the perceived profit and loss account, i.e. the stronger the sense of self-efficacy, the more profits and the lower losses from selecting given behaviour we notice. Low self-efficacy is related to fear, feeling of powerlessness, whilst high self-efficacy favours facing challenges, formulating goals and being successful when achieving them [2].

In the theory of health promotion the issue of shaping a person’s pro-health activity has a fundamental meaning. Development of concepts that define the set of determinants important for undertaking pro-health behaviours is a key to understanding the issue and empirical verification [9]. Undoubtedly, perception of self-efficacy is an indicator of intentions and actions undertaken in various areas of health behaviours. There is evidence that people with high self-efficacy rarely smoke, indicating at the same time the leading role of self-efficacy in undertaking, maintaining and modifying behaviour connected to smoking [10-12].

Medical professionals, because of their professional qualifications, are characterised by more comprehensive health knowledge, which is a determining factor in the theory of pro-health behaviours. For non-medical professionals, the factor of less extensive health knowledge may be important for implementation of pro-health behaviour. The sense of self-efficacy, apart from the difference in health knowledge, may be an important determinant of health behaviour.

The aim of this study was to learn the level of self-efficacy of medical and non-medical professionals and its relation to health behaviours.

II. MATERIALS AND METHODS

The proper study was conducted between June 2014 and March 2015 among 598 working people, representatives of 6 professions, including 3 medical and 3 non-medical ones. A diagnostic survey was used as the research method and a survey questionnaire as the tool.

The Generalized Self-Efficacy Scale (GSES) by R. Schwarzer, M. Jerusalem and Z. Juczyński was used to assess the level of self-efficacy. The GSES scale consists of 10 statements whose aim it to measure the strength of a person’s general belief in their efficacy in dealing with difficult situations and obstacles. The respondent may select one of four possible answers: from “no”- 1 point, 2 - “rather not”, 3 - “rather yes” and “yes” - 4 points. The respondent’s score is a general indicator of self-efficacy, which can range from 10 to 40 - the higher the result, the higher the level of self-efficacy. The raw scores are then transformed into standardized sten norms: 1-4 sten - low scores; 5-6 sten - average scores; 7- 10 sten - high scores [13].
The level of health behaviour was assessed with application of a tool of self-description - the Health Behaviour Inventory (HBI) by Z. Juczyński [13]. The HBI questionnaire consists of 24 statements that describe health behaviours in four categories: proper eating habits (i.e. a type of food eaten, namely, the frequency of consumption of whole meal bread, fruit and vegetables, salt, avoiding foods with preservatives, etc.), preventive health behaviours (such as adherence to doctor’s orders and obtaining information on health and disease), health practices (i.e. sufficient amount of sleep, physical exercises, or spending free time), positive attitude (such behaviours as avoiding strong emotions, stress, tensions and depressing situations). The respondent assigns a number to each statement, depending on how this statement refers to himself/herself. 1- almost never, 2 - rarely, 3 - occasionally, 4 - often, 5 - almost always. The figures are counted in order to obtain the general indicator of health behaviour. The values are between 24 and 120 points. The higher the score, the higher the intensity of health behaviours is. The raw scores are then transformed into standardized sten norms: 1-4 sten - low scores; 5-6 sten - average scores; 7-10 sten - high scores.

The research tool ended with a respondent’s particulars, where the respondents entered their sociodemographic status. The sociodemographic assessment included the following data: sex (M or F), age, address of permanent residence (rural or urban areas) and their education (vocational, secondary or higher).

The research was conducted after the Bioethics Committee at the Medical University of Lublin granted its approval (KE-0254/281/2013), and in accordance to the requirements of the Helsinki Declaration.

The obtained results were analysed statistically. The values of the analysed measurable parameters were expressed by means of the average value, standard deviation and the median, and the values of not measurable parameters - by means of size and frequency. The normality of the layout of variables in the tested groups was examined by means of the Shapiro–Wilk test of normality. To measure the differences in the measurable parameters between two groups the Student’s t-distribution was used, and for more than two groups, the non-parametric Kruskal–Wallis test was applied. The level of significance was set at p < 0.05, indicating existence of statistically significant differences or correlation. The data base and statistical surveys were carried out on the basis of the Statistica 10.0 software (StatSoft, Polska).

III. RESULTS

Description of the tested group

The research was conducted among 598 working people that included 305 medical professionals and 293 non-medical professionals. The medical professionals included: nurses and midwives (61.97%; n=189), health care assistants (16.72%; n=51) and medical sterilization technicians (21.31%; n=65). And the non-medical professions included: miners (42.66; n=125), teachers (23.21%; n=68) and prison staff (34.13%; n=100). The average age of the respondents was 36.49 years (SD=7.33). A detailed description of the tested group is presented in Table 1.

Table 1. Description of the tested group

<table>
<thead>
<tr>
<th>Category</th>
<th>Medical professions (N=305) [n (%)]</th>
<th>Non-medical professions (N=293) [n (%)]</th>
<th>Total (N=598) [n (%)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>women</td>
<td>269 (88.20)</td>
<td>69 (23.55)</td>
<td>338 (56.52)</td>
</tr>
<tr>
<td>men</td>
<td>36 (11.80)</td>
<td>224 (76.45)</td>
<td>260 (43.48)</td>
</tr>
<tr>
<td>Age: average (±SD)</td>
<td>36.49 ± 7.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-30</td>
<td>68 (22.30)</td>
<td>82 (27.99)</td>
<td>150 (25.08)</td>
</tr>
<tr>
<td>31-40</td>
<td>133 (43.61)</td>
<td>153 (52.22)</td>
<td>286 (47.83)</td>
</tr>
<tr>
<td>41-50</td>
<td>90 (29.51)</td>
<td>50 (17.06)</td>
<td>140 (23.41)</td>
</tr>
<tr>
<td>51 and older</td>
<td>14 (4.58)</td>
<td>8 (2.73)</td>
<td>22 (3.68)</td>
</tr>
<tr>
<td>Place of residence:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>countryside</td>
<td>102 (33.44)</td>
<td>116 (39.59)</td>
<td>218 (36.45)</td>
</tr>
<tr>
<td>city</td>
<td>203 (66.56)</td>
<td>177 (60.41)</td>
<td>380 (63.55)</td>
</tr>
<tr>
<td>Education:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vocational</td>
<td>–</td>
<td>34 (11.60)</td>
<td>34 (5.69)</td>
</tr>
<tr>
<td>secondary (technical secondary school)</td>
<td>155 (50.82)</td>
<td>109 (37.20)</td>
<td>264 (44.15)</td>
</tr>
<tr>
<td>undergraduate studies (Bachelor’s degree)</td>
<td>86 (28.20)</td>
<td>46 (15.70)</td>
<td>132 (22.07)</td>
</tr>
<tr>
<td>graduate studies (Master’s degree)</td>
<td>64 (20.98)</td>
<td>104 (35.49)</td>
<td>168 (28.09)</td>
</tr>
</tbody>
</table>

Level of self-efficacy (GSES) in the tested group

In the tested group of medical professionals: nurses and midwives, health care assistants and medical sterilization technicians obtained high general self-efficacy scores (7-10 sten). The scores obtained by the non-medical profession-
The test results show that 3.93% (n = 12) of the medical professionals had a low level of self-efficacy (1–4 sten), 34.75% (n = 106) had an average level (5–6 sten), and 61.31% (n = 187) of respondents had a high level of self-efficacy (7–10 sten). 4.78% (n = 14) of the non-medical respondents had a low level of self-efficacy (1–4 sten), 21.83% (n = 64) had an average level (5–6 sten), and as much as 73.38% (n = 215) of respondents had a high level of self-efficacy (7–10 sten).

The analysis showed a statistically significant correlation between being a medical professional and a non-medical professional and the assessment of the level of self-efficacy (t=3.064; p=0.002). Non-medical professionals (M=31.40; SD=3.49) reached the level of self-efficacy that was statistically significantly higher than the one of the non-medical professionals (M=30.40; SD=3.49).

The level of the declared health behaviour (HBI) in the tested group

In the group of medical professionals the highest level of health behaviour was obtained by health care assistants - HBI indicator = 82.06 (SD = 13.52), which corresponds to 5.02 (SD = 4.82) sten. Non-medical professionals (M=31.40; SD=4.37) reached the level of self-efficacy that was statistically significantly higher than the one of the non-medical professionals (M=30.40; SD=3.49).

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The analysis performed showed a statistically significant correlation between the nature of a profession and the level of health behaviour (p < 0.05). The medical professionals had a statistically higher level of general health behaviour and a higher indicator in individual categories when compared to the tested non-medical professionals (p < 0.05). Detailed data is presented in Table 4.

Table 4. Differences in the levels of health behaviour in the context of profession

<table>
<thead>
<tr>
<th>Variable</th>
<th>Medical professionals</th>
<th>Non-medical professionals</th>
<th>Statistical analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Proper eating habits</td>
<td>20.14</td>
<td>4.11</td>
<td>17.81</td>
</tr>
<tr>
<td>Preventive health behaviours</td>
<td>21.08</td>
<td>4.04</td>
<td>18.15</td>
</tr>
<tr>
<td>Positive attitude</td>
<td>20.86</td>
<td>3.62</td>
<td>19.45</td>
</tr>
<tr>
<td>Health practices</td>
<td>18.13</td>
<td>3.88</td>
<td>17.29</td>
</tr>
<tr>
<td>General indicator of health behaviour intensity (total)</td>
<td>80.20</td>
<td>11.76</td>
<td>72.70</td>
</tr>
</tbody>
</table>

Level of self-efficacy (GSES) and the level of declared health behaviours (HBI)

The performed analysis showed a statistically significant correlation between the general assessment of the level of health behaviours and the level of self-efficacy among medical and non-medical professionals (p < 0.05). The tested medical and non-medical professionals that obtained a high level of self-efficacy obtained also a higher score in the assessment of the general health behaviour indicator than the respondents with a low level of self-efficacy. Moreover, a statistically significantly higher level of health behaviour was observed among non-medical professionals, in respondents who had an average and low level of self-efficacy.

Further analysis showed a statistically significant correlation between the level of self-efficacy and the level of health behaviour in the category of “positive attitude”, both among medical and non-medical professionals (p < 0.05). Along with the increase in the level of self-efficacy, the score in the category “positive attitude” is also higher. Moreover, among the non-medical representatives, along with the increase in the level of self-efficacy, the level of health behaviour in the category “health practices” also grows (p < 0.05).

In the category “proper eating habits” of health behaviours, a statistically significant correlation between the level of self-efficacy and the level of assessment of this category among the representatives of both medical and non-medical professionals (p < 0.05) was observed. The persons who had a high level of self-efficacy obtained a higher score in the category of health behaviour.

A statistically significant correlation between the level of self-efficacy and the assessment of health behaviour in the category “preventive health behaviours” among the non-medical professionals (p = 0.044) was observed in the analysis. Along with the increase in the high level of self-efficacy, the score in this category of health behaviour is also higher. Detailed statistical analysis is presented in Table V.

IV. DISCUSSION

Work is one of the main activities of an individual. Because a person spends a lot of time at work, the place of employment is an ideal place to introduce various initiatives aimed at promotion of health. Employees’ lifestyle, whose elements may be made subject to promotional intervention, is composed of two types of behaviours. The first type includes behaviour connected to the performed work, resulting from the rules of occupational health and safety. Another type of behaviours is behaviour in everyday life, outside work, which can be influenced at work through a promotional activity. They include: dietary habits, smoking, physical activity, consumption of alcohol, etc. [14].

Health behaviour is a sign of an individual’s defined health identity expressed through the attitudes and activities towards one’s health, which are the result of a certain level of understanding and valuation of health in everyday life [15]. Actions connected to health may be present on many levels of a person’s activities: in the family and professional life, education, recreation and leisure. Studies on overall health behaviour influence on current lifestyle are an important issue in the prevention of diseases of affluence.

An overview of the results of the research on health behaviour measured with the HBI scale, among selected sub-populations of people in Poland, shows that most often the score is average (5–6 sten). An average level of health behaviour, measured with the IZZ scale, was characteristic for a group of working people [16], men over the age of 40 [17], people over the age of 60 [18], women after mastectomy [19], people with diabetes [20], people after a heart attack, who are not physically active [21], nurses [22] and
students of nursing from Białystok [23]. In-house research on a group of working people show that both, medical and non-medical professionals, represent an average level of health behaviour - between 5 and 6 sten, and additionally the non-medical professionals - miners, teachers and prison staff - obtained a result which was one sten lower (5 sten) when compared to the non-medical professionals - nurses and midwives and health care assistants (6 sten). The level of health behaviour of medical sterilization technicians, who in our study were representatives of medical professions, was similar to the level of non-medical professionals, namely they obtained 5 sten.

Self-efficacy is considered to be a predictor of health behaviour. In the research conducted by Juczyński [24], in a group of 489 adults, the connection between the sense of self-efficacy and the level of health behaviour turned out to be stronger than other variables. Żuralska et al. [25] in their research investigating on influence of the sense of self-efficacy on individual IZZ categories among the residents of a Social Welfare Home concluded that the respondents who had a higher level of self-efficacy obtained a higher score in individual HBI categories. Numerous studies show that the level of self-efficacy influences: motivation to quit smoking [12], blood pressure and catecholamines levels [10], perceived pain level [26], burnout [27], cardiovascular function in people with coronary heart disease [28]. Zalewska-Puchała et al. [29], investigating on the influence of self-efficacy on individual health behaviours in the group of 105 students of three courses at University of Science and Technology in Kraków, obtained completely different results. The cited studies show that most of the respondents had a high level of self-efficacy (79%), however, the level of the efficacy did not have a statistically significant influence on their diet, meal frequency, regular preventive medical examinations, adding salt to dishes, drinking coffee and alcohol, smoking and having casual sex.

The correlation between the sense of self-efficacy and the intensity of health behaviours in two different groups of professions was assessed. The variable of self-efficacy turns out to be a strong determinant of health behaviour in both groups, and, additionally, it was ascertained that also non-medical professionals had a higher level of self-efficacy.

The meaning of the sense of self-efficacy can be found in literature in the context of protection against harmful effects of stress. The research conducted among American soldiers showed that the sense of self-efficacy reduces the negative influence of workload, whilst the research on a group of police officers showed an improvement in mental health in persons who have a really stressful jobs, thanks to the sense of high self-efficacy [2].

V. CONCLUSIONS

- The results of own research and their analysis can be considered sufficient to claim that, irrespective of the type of work performed (medical and non-medical professions) higher self-efficacy determines higher level of health behaviours.
- This observation gives a reasonable ground for planning actions on health education and promotion which should be based on improving self-efficacy in developing positive health behaviour.

VI. REFERENCES


