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*Analysis of socio-economic factors that influence pharmacotherapy*

The increasing life expectancy of men and women in our country makes the whole system of health service face new and more serious challenges. It is expected that the number of elderly patients who require permanent health care is going to increase systematically [5]. It will inevitably be connected with a considerable rise in the cost of patient treatment as regards both the number of medical procedures and the cost of administered pharmacotherapy. The new methods and schemes of pharmacological treatment that frequently force the simultaneous use of numerous agents from different groups have some side-effects apart from the beneficial medical impact. This phenomenon can be observed eg. in cardiology. Unfortunately, the falling income of pensioners that has been observed for many years combined with the rising prices of pharmacological agents may make these new, but at the same time more expensive methods of treatment turn out to be less efficient due to the fact that medical advice will not be able to be followed by a certain group of patients in poor economic situation. Moreover, there is an alarming policy of the state which makes patients cover larger and larger parts of the costs of pharmacotherapy (1), which results in a considerable increase in expenditures on medicines (4, 6), which brings about the distressing phenomenon, especially combined with the rising cost of drugs (6).

The aim of the paper was an attempt to determine patients' approach to the issue of the costs of pharmacotherapy, financial pressure caused by its application as well as to find other than economic reasons that can influence the efficiency of the treatment recommended by the doctor.

#### MATERIAL AND METHOD

The survey comprised 205 patients of the Department of Cardiology at Medical Academy in Lublin selected at random. The survey was carried out by means of an anonymous self-made questionnaire including 24 single-choice questions and one multiple-choice question divided into two thematic groups. The first group included questions referring to demographic data such as age, sex, residence and education. The second part included questions that aimed to determine the approach of patients to the issue of treatment costs, reimbursement for drugs as well as the factors that influence the application of the recommended pharmacotherapy by patients.

#### RESULTS

In the survey group men (104 people) accounted for the slight majority, i.e. 50.7%, while women – for the remaining 49.3%. Patients aged 30–40 accounted for 4.4%, 40–50 year-olds – 10.7%, 51–60

year-olds – 22.4%, 61–70 year-olds – 25.8%. The largest group was constituted by people aged 71–80 accounting for 34.1%. The oldest group of people over 80 years old accounted for 4.4% of the total. Patients over 60 constituted a vast majority of the respondents (63.4%). As many as 50.2% of the respondents lived in the cities with population over 50,000. Country residents accounted for 29.2%, while 20.6% of the total lived in towns up to 50,000 citizens. The largest group was constituted by pensioners and old-age pensioners (87.8%), with old-age pensioners accounting for 52.7% of this group. Exactly 9.2% of the respondents described themselves as professionally active, 1.95% – as unemployed, while students accounted for less than one per cent. 43.4% of the respondents had secondary education, 25.3% – elementary education, 16.5% – technical education, while 14.6% – university education. 64.3% of the survey group shared household with a spouse, 19.5% were single, while 15.6% lived with children.

Another criterion under examination was the total monthly household income of the respondents. 8.3% of the respondents declared that their total monthly household income was below 300 zł, 24.4% – up to 500 zł. The largest group (58 people – 28.2%) was constituted by the subjects who estimated their monthly income at up to 700 zł. The income of up to 1,000 zł per month was declared by 22.4% of the respondents, while 16.5% estimated their income at over 1,000 zł per month, of whom only 13 people declared the income over 1,500 zł, which accounts for 6.3% of the total. Overall, 61% of the patients under survey must keep their household for up to 700 zł. 40% precisely assessed their economic situation as poor, while 17% of this group – as very poor. 42.4% of the patients consider their financial situation average, while 17.5% – good. None of the respondents assessed their economic situation as very good.

The vast majority of the respondents take medicines permanently (86.6%), 12.1% – immediately, while less than 1% – do not take medicines at all. The largest group – 30.2% take from four to six different drugs permanently, while 22.9% – from six to eight. Less than a tenth (9.75%) admitted taking 8–10 drugs, while five people (2.4%) – more than ten drugs. 32.6% of the respondents have kept taking these drugs for 5–10 years, 25.3% – from two to five years, while 22.9% – for more than ten years. Similar percentages of the respondents indicate they have been treated systematically for one-two years (8.3%) and less than six months (7.31%). The remaining group (3.59%) indicated the period from six months up to one year. Drugs administered in the diseases of blood circulation system are used in the largest amounts. The percentages of particular drug groups mentioned by the respondents are presented in Figure 1.

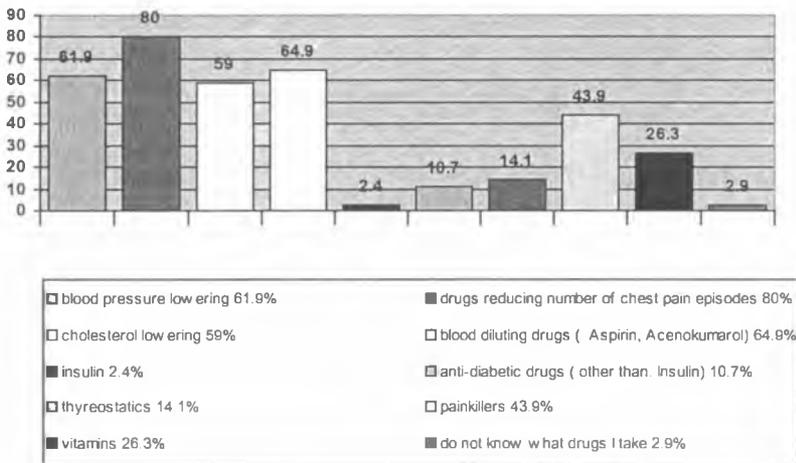


Fig. 1. Types of drugs used by respondents

As far as the price of drugs is concerned, 133 respondents (64.8%) claimed that all drugs cost definitely too much, 26.8% considered part of drugs too expensive, while the price of others is reasonable, 5.85% regarded prices of drugs as reasonable, while 2.5% – as cheap. The total monthly expenditures on drugs by the respondents are illustrated in Figure 2.

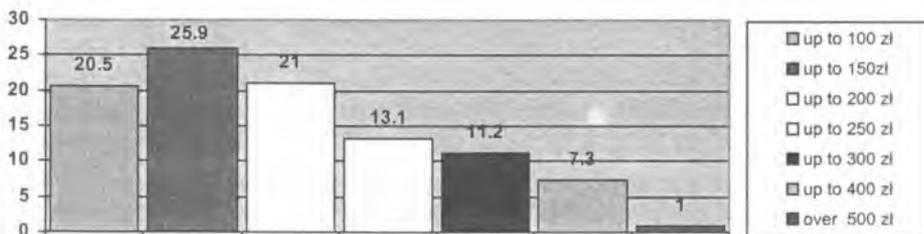


Fig. 2. Total monthly expenditures on drugs by patients under survey

The expenditure on drugs of 50 zł per month would be acceptable for 49.2% of the respondents, while 36% would accept expenditures up to 100 zł and 9.3% – up to 150 zł. The cost of drugs up to 200 zł was considered acceptable by 2%, while over 200 zł – by 3.9% (with one person being ready to pay any price for drugs). 73.6% of the subjects claimed that drugs should be free, and 65.8% of this group and 46.8% of the total would make them free for pensioners only, while the rest – for the whole population covered by the national health insurance. On the other hand, 18% claimed that such a situation should not exist, while 8.3% expressed no opinion about it. As many as 93.6% of the total do not have any discounts for the purchase of drugs, while 6.3% use reductions for war or army casualties. Only 61.9% of the population under survey buy all the prescribed medicines, 15.6% only the most essential ones, 13.2% avoid buying the most expensive drugs, 7.3% buy all the prescribed drugs irregularly, while 2% – only the cheapest drugs prescribed by a doctor. Only 58% of the respondents take drugs according to the doctor's advice, 15.6% of the total change doses according to their well-being, 11.2% occasionally give up taking the most expensive drugs or take smaller doses, 10.7% admitted they did not use the most expensive drugs prescribed by doctors, while 3.4% take only the drugs that they personally consider efficient. As results from the above data, 42% of the respondents do not follow doctors' advice concerning drug dosage. The question whether they lack money for drugs was answered positively by 84%, including 10.1% – who always lack money for drugs, 24.8% – frequently, 30.1% – at times, 19% – seldom. Only 16% of the respondents never lack money for buying medicines.

As many as 80.5% of the respondents are aware of the fact that part of the expensive drugs can be replaced with their cheaper counterparts. More than 61% of the subjects admitted being informed about such an opportunity (37.5% – by doctors, 24% by pharmacists) The question: 'Would you make use of the opportunity to buy cheaper counterparts of drugs that you take?' was answered positively by 74.1%, but at the same time 46.3% of the patients declared they would take this chance provided that the cheaper counterpart had exactly the same effect as the more expensive one. Exactly 27.8% of the patients would choose to buy the cheaper one even if it had a weaker effect than the recommended drug.

The next question was concerned with the issue of buying drugs of the unknown origin in the places other than pharmacies (markets, stalls). The answers are presented in Figure 3.



Fig. 3. Do you happen to buy drugs of unknown origin, e.g. at the market or stalls?

The patients under survey claimed they would be ready to accept the introduction of payment for medical consultation (69.3%). The cost that they would be able to accept is illustrated in Figure 4.

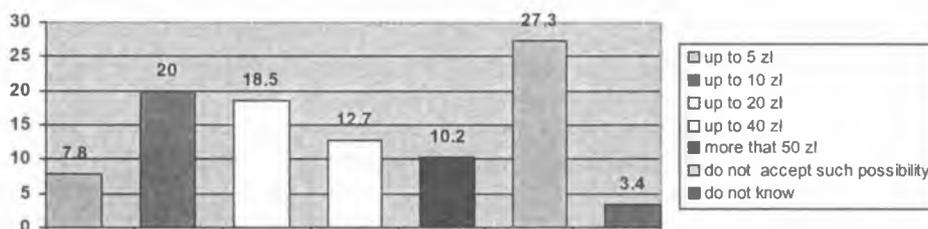


Fig. 4. Price that respondents are ready to pay for medical consultation

## DISCUSSION

The increasing life expectancy of patients as well as the changes in the demographic structure of our country make old people, pensioners and old-age pensioners, the largest group of medical service recipients (5). Demographers estimate that in 2020 this social group will account for 17.4% of the total population of Poland (5). Furthermore, new methods of treatment and pharmacological agents become less affordable for patients, including old people with low incomes, even though these drugs have an improved therapeutical effect (3). The survey group included primarily old people. The majority of them have low incomes – as many as 61% claim that their total monthly household income is below 700 zł. Therefore, it is clear why a large percentage of the respondents regard their economic situation as poor, or at most, average (2). The vast majority of the patients claimed that drugs cost too much. The fact is also confirmed by the papers published hitherto concerned with administering pharmacotherapy according to doctors' recommendations (1, 4, 6). In his study of farmers, Świstak recognized lowered affordability of pharmacological agents resulting from falling incomes and increased prices of drugs. The majority of the respondents claimed that the total of their expenditures on drugs is up to 250 zł per month, but combined with the most frequent monthly income (up to 700 zł) it seems to be a considerable burden for their family budgets. Therefore, it seems obvious that the largest group of patients, as many as 86%, would like to spend no more than 150 zł on drugs. At the same time, the majority of the subjects expect the state to cover larger part of the costs of drug purchase, since as many as 73.6% claim that medicines should be free, at least for the groups with the lowest incomes,

namely pensioners and old-age pensioners. Such an attitude can hardly be surprising if we take into account the fact that at present the level of patients' share in drug purchase reaches 65% on average (1). It appears that despite using increasingly improved treatment schemes and more and more effective pharmacological agents, the financial barrier can turn out to be a serious obstacle for the social groups being the largest consumers of drugs.

The basic condition for the efficiency of pharmacotherapy is, most of all, regular drug-taking according to doctor's recommendations. The analysis carried out indicates that only a little more than a half of the respondents buy all the prescribed drugs regularly, and even a smaller percentage apply them according to the recommendation. What results from the answers given by the respondents is that the most frequent cause of this state is their difficult economic situation, which clearly emphasizes the fact that the majority of the respondents lack money to buy all the necessary medicines. However, it should be admitted that in 20% of cases the refusal to follow doctor's advice results from the lack of discipline of patients who, for example, take smaller doses of drugs according to their well-being. Even though the majority of the respondents are aware of the opportunity of replacing some of the most expensive drugs with their cheaper counterparts, only slightly more than a half of them have been suggested using this option. As follows from the survey the patients would be willing to take this opportunity. The danger triggered by financial hardships combined with low level of education can be proved by the fact that as many as 16.5% of the respondents admitted buying drugs in places such as markets or stalls.

Therefore, it should be considered whether applying less modern, but more affordable treatment administered according to the doctor's advice would not be more efficient than the latest pharmacotherapy which is either partial or abandoned.

## CONCLUSIONS

1. The cost of buying drugs represents a serious financial barrier for patients.
2. Poor economic situation makes a large percentage of patients give up following medical advice concerning drug dosage.
3. The patients under survey would be willing to take an opportunity to purchase cheaper counterparts of expensive drugs.
4. There is a considerable group of patients who buy cheap medicines of unknown origin in places like markets or stalls due to economic reasons.

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## SUMMARY

The aim of the paper was an attempt to determine patients' approach to the issue of the costs of pharmacotherapy, financial pressure caused by its application as well as to find other than economic reasons that can influence the efficiency of the treatment recommended by the doctor. The answers of 205 patients under survey underwent statistical analysis. The respondents declared low income and monthly cost of drug purchase which prove to burden their budgets. The vast majority do not follow doctors' advice concerning drug dosage, which results from poor economic situation in most cases. A considerable group of patients decide to purchase drugs of unknown origin in places such as markets or stalls.

## Analiza czynników społeczno-ekonomicznych wpływających na stosowanie farmakoterapii

Celem badania była próba określenia podejścia pacjentów do problemu kosztów farmakoterapii, określenia stopnia obciążenia finansowego związanego z jej stosowaniem, a także próba odpowiedzi na pytanie, czy istnieją inne niż ekonomiczne przyczyny mogące wpływać na skuteczność ordynowanego przez lekarza sposobu leczenia. Statystycznie przeanalizowano odpowiedzi 205 ankietowanych pacjentów. Badani deklarowali niskie dochody oraz miesięczny koszt zakupu leków stanowiący znaczne obciążenie dla ich budżetu. Zdecydowana większość nie stosuje się do zaleceń lekarskich dotyczących stosowania leków. W większości przypadków jest to spowodowane złą sytuacją ekonomiczną. Znaczna grupa pacjentów decyduje się na zakup leków poza oficjalnym obiegiem, w miejscach takich jak targowisko czy bazar.