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Verification of healthcare needs by the use of National Health Fund Data - mental and behavioural disorders

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ABSTRACT

Background: **The ways of gaining the information on healthcare should be verified as the discrepancies between different sources may lead to serious mistakes. Unfortunately, there are few reports on the methodology on healthcare needs assessment especially when mental and behavioural disorders are considered.**

Methods: **The whole-nation statistical data from the Central Statistical Office (CSO) were compared to the whole-nation information on the reimbursed psychotropic medicines from the National Health Found. The most important mental health problems, and the spatial (regional) distribution of mental disorders in Poland were analysed.**

Results: **In 2011 the total number of outpatients registered in psychiatric facilities was 1 404 148 (CSO), and NHF reimbursed psychotropic drugs for 7 870 481 people. The "neurotic disorders" and "affective disorders" were the most frequent mental problems according to CSO but NHF recognized "alcohol dependence syndrome" and "other neurotic disorders" as the most frequent mental health problems in Poland. The mental health needs in general population according to NHF data were 5,61 times higher than the needs for psychiatric care in outpatient facilities according to CSO. In some regions those differences were higher: up to 8 – 13 times.**

Conclusion: **The comparison of data from CSO and NHF revealed the important spatial differences in healthcare inequalities, scale of double-registration of patients and overconsumption of medicines together with underestimation of healthcare needs. Also other information e.g. on patients' non-compliance in alcohol dependence syndrome can be obtained in this way.**

INTRODUCTION

Healthcare needs assessment is the crucial point in preparation and evaluation of almost each kind of healthcare strategies, policies, and planning. However, the methodology of gaining the information on health and healthcare should be verified as the discrepancies between different sources may lead to serious misunderstandings resulting in serious mistakes. Unfortunately, there are few reports on the methodology on healthcare needs assessment especially when mental and behavioural disorders are considered [1]. The most important data indispensable for correct analyses are usually taken from epidemiological investigations and statistical reports [2,3]. However, the role of epidemiology is sometimes overestimated as there are important limitations of epidemiological based needs assessments [4]. It is also generally accepted that the healthcare needs should be assessed by the staff and the patients as well. On the other hand, the problem arises that staff and patients moderately agree about met needs, but agree less often on unmet needs [5]. That is especially true in a case of mental disease and psychiatric problem, so special tools had been developed for assessment of such needs, e.g. Camberwell Assessment of Needs instrument [6], Client Sociodemographic and Service Receipt Inventory (CSSRI-EU) or even EQ-5 D [7]. Also the general practitioners are sometimes involved in assessment of healthcare needs of population [8,9]. Unfortunately, there are no fully objective, diagnoses-based methods for precise assessing health care needs.

> IN POLAND, AMONG THE MOST FREQUENTLY PRESCRIBED DRUGS ARE THE ONES FOR THE TREATMENT OF CARDIOVASCULAR RELATED DISEASES, INCLUDING ANTIHYPERTENSIVE DRUGS

Moreover, the accuracy and timelines of information strongly depend on the different sources of information. The most complete data can be found in the medical records, irrespectively from their forms (paper or electronic ones), but retrieving the information from such dispersed and disseminated sources is very difficult or even impossible. The registers of patients suffering from e.g. psychiatric disorders are another type of sources. The completeness of registers strongly depends on the type of institution (healthcare centres, hospitals, outpatients clinics etc.), and usually covers only the patients from such an institution. The epidemiological data come from different reports and studies, but their accuracy and timeliness may be vague.

It can be assumed that only patients who actually are in need, will take the medicines, and if the medicines are not taken – patients will not recognized the therapy as a need. The patients' "non-compliance" means that doctor had prescribed the medicines but the patient has not bought them in the apothecary and consequently – has not taken those medicines. The scale of non-compliance in pharmacotherapy may range from 15% to even 70% of registered patients suffering from different diseases. So it seems reasonable to verify whether the medicines consumption may be used as a measure for quantification of healthcare needs, at least in selected kinds of diseases [10]. Mental health is an appropriate example for such analysis. It can be assumed that the outpatients who are suffering from mental and behavioural disorders (F00-F99 according to ICD-10) are referred to psychiatric facilities, but there are also the outpatients who use medicines prescribed by general practitioners and specialists other than psychiatrists. The number of all people who use tranquilizers, and other psychotropic medications seems to be a dark figure, and a big one.

The attempt was made to compare the data on mental health diseases from the Central Statistical Office (CSO): Statistical Yearbooks, and Statistical Bulletins, with the National Health Found (NHF) information. If the numbers of patients in both data systems were similar, or even identical - such information would be the reliable measure for health needs assessment. If they were not - information on healthcare needs could be provided also from medicines consumption data.

The aim of the study was to compare the data from different sources to determine whether the actual health needs may be verified by the use of data from National Health Fund.

MATERIAL AND METHODS

The statistical data on the healthcare system and selected diseases are collected according to the State Statistical Program in Poland, by the use of approx. 40 different statistical forms issued and updated every year by the Ministry of Health. The results are presented every year in CSO Statistical Yearbook and in Statistical Bulletins published by the Centre for Information in Healthcare [11,12]. The medicines consumption is registered by the apothecaries and pharmaceutical wholesalers. Those are the sources for analyses performed by different institutions e.g. IMS. The majority of prescribed medicines is reimbursed by the NHF, which has the complete information of all reimbursed prescriptions in Poland (but not of non-reimbursed ones, neither OTC). Moreover, NHF may identify each patient, his/her diagnoses, and each prescription for re-

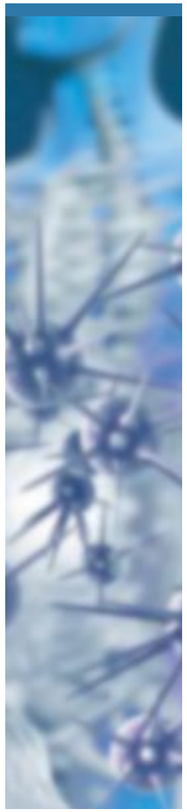
imbursed medicines. The official data published by the CSO were compared with the data on psychotropic drugs consumption obtained from the NHF databases. The newest CSO data have come from the year 2011, so the same year has been chosen for NHF information, in spite of that the newest data could be received from NHF as well. Only the numbers of patients registered by the statistical services and/or by the NHF were taken into account. The patients hospitalized because of mental disorders were not taken into consideration in this study.

The lists of 10 most frequent mental disorders / diseases was constructed on the basis of CSO and NHF data. Additional information was retrieved about diseases and conditions which are usually recognized as the most important mental health problems in Poland. The spatial (geographic) distribution of patients registered by CSO and patient who use psychotropic medicines reimbursed by NHF was analysed using the following data:

Table 1. The number of patients with 10 most often diagnosed groups of diseases (according to the Central Statistical Office) and diseases (according to National Health Found)

CENTRAL STATISTICAL OFFICE DATA		NATIONAL HEALTH FUND DATA	
DIAGNOSIS	NUMBER OF PATIENTS	DIAGNOSIS	NUMBER OF PATIENTS
1. Neurotic disorders	347 263	1. Alcohol dependence syndrome	129 247
2. Affective disorders	269 408	2. Other neurotic disorders	115 561
3. Symptomatic mental disorders	199 663	3. Schizophrenia	103 372
4. Mental disorders due to use of alcohol	170 011	4. Vascular dementia	101 390
5. Dependence syndrome	144 814	5. Recurrent depressive disorder	99 786
6. Schizophrenia	143 511	6. Depressive episode	93 857
7. Specific developmental disorders	72 644	7. Reaction to severe stress, and adjustment disorders	92 598
8. Mental retardation	59 578	8. Other anxiety disorders	90 624
9. Other psychotic disorders (non-schizophrenia)	44 180	9. Other mental disorders due to brain damage and dysfunction and to physical disease	85 438
10. Adult personality and behaviour disorders	34 194	10. Specific developmental disorders of speech and language	59 438
TOTAL NUMBER	1 485 266	TOTAL NUMBER	971 311

Source: CSO Yearbook, CSO Bulletin, NHF database (2012)



1. Absolute numbers of outpatients in each voievodship suffering from mental and behavioural disorders - according to CSO (registered in mental health outpatients facilities).
2. Absolute numbers of outpatients in each voievodship who used the reimbursed medicines for mental and behavioural disorders - according to NHF (reimbursed prescriptions).
3. Prevalence of mental and behavioural disorders in each voievodship according to CSO and to NHF.

RESULTS

According to the Central Statistical Office data the number of patients registered in outpatient psychiatric clinics in 2011 reached 1 404 148 persons. At the same time the National Health Fund reimbursed psychotropic drugs for 7 870 481 people. So the difference was 6 466 333 – the patients which required appropriate medicines and probably suffered from some kind of mental problems, but were not treated by psychiatrists. According to CSO the percentage of Polish population treated and registered in psychiatric outpatient clinic was 3.64%. However, NHF reimbursed therapy with psychotropic drugs for 20.42% of the whole population of Poland.

The structure of patients' populations was analysed according to the 10 most often diagnoses, basing on data from CSO and NHF (Tab. 1).

It should be mentioned here that the number of patients registered and treated because of 10 most frequent conditions (1 485 266) was higher than total number of patients registered by CSO (1 404 148). That indicates that the remarkable number of psychiatric patients (approx. 80 000) were double registered (in different facilities). The number of patients with 10 most popular psychiatric diagnoses equals 1 485 266 according to CSO but only 971 311 according to NHF, as CSO presented its data aggregated into 19 groups of diseases in contrast to NHF – presenting all diagnoses F00-F99. NHF information seems to be much more accurate than CSO data. It should be noted that depression (F32-F33) was not even mentioned in CSO reports. According to NHF data different types of depression are medicated by the reimbursed medicines in 249 697 patients in Poland.

F 10.2 (dependence syndrome) is the only exception to the rule that NHF numbers are higher than CSO ones. The difference equals minus 15567 persons who presumably do NOT consume the prescribed medicines (Tab. 2).

The spatial distribution of patients in all Polish voievodships according to CSO (persons registered in out-patient clinics for patients with mental disorders, addicted to alcohol and drug in 2011) and to NHF (persons who used reimbursed medicines in 2011 - diseases codes F00-F99) is presented in Tab. 3.

Table 2. The difference between CSO and NHF data referring to selected mental disorders (absolute numbers of patients in Poland)

CENTRAL STATISTICAL OFFICE DATA	CSO DATA	NHF DATA	DIFFERENCE CSO-NHF
Difference CSO-NHF	170 011	208 471	38 460
F10.2 Dependence syndrome	144 814	129 247	-15 567
F40-F48 Neurotic, stress-related and somatoform disorders	347 263	347 263	121 735
F 20 Schizophrenia	143 511	148 360	4 849

CSO – Central Statistical Office, NHF – National Health Fund Source: CSO Yearbook, CSO Bulletin, NHF database (2012)

It can be seen that the number of patients according to NHF and CSO in the voievodships are remarkably different. Also the indicators (prevalence per 100 000 inhabitants) are not in accordance one with another as the CSO and NHF data are compared in voievodships. According to CSO data the highest prevalence of mental and behaviour-

Table 3. Regional differences in absolute numbers of patients and prevalence indicators

VOIEVODSHIP	ABSOLUTE NUMBERS				PREVALENCE			
	POPULATION	CSO DATA	NHF DATA	DIFFERENCEBETWEEN NHF AND CSO DATA	CSO DATA	NHF DATA	DIFFERENCE BETWEENNHF AND CSO DATA	RATIO OF NHF/CSO DATA
Dolnośląskie (Lower Silesian)	2 916 577	100 002	518 005	418 003	3429	17 761	14 332	5,18
Kujawsko-pomorskie (Kuyavian-Pomeranian)	2 098 370	93 443	524 228	430 785	4453	24 983	20 530	5,61
Lubelskie (Lublin)	2 171 857	84 182	529 102	444 920	3876	24 362	20 486	6,29
Lubuskie (Lubusz)	1 023 158	45 278	202 137	156 859	4425	19 756	15 331	4,46
Łódzkie (Łódź)	2 533 681	123 324	546 179	422 855	4867	21 557	16 689	4,43
Małopolskie (Lesser Poland)	3 346 796	141 592	570 171	428 579	4231	17 036	12 806	4,03
Mazowieckie (Masovian)	5 285 604	200 282	1 075 282	875 000	3789	20 344	16 554	5,37
Opolskie (Opolskie)	1 013 950	31 410	155 113	123 703	3098	15 298	12 200	4,94

al disorders was found in Łódź voievodship (4867 per 100 000) and the least – in Warmian-Masurian (1918 per 100 000). The latter was in the province with the highest prevalence according to NHF (24992 per 100 000 inhabitants). The least prevalence NHF noted in Opolskie 15297 per 100 000). Also the differences between NHF and CSO data were the highest in Warmian-Masurian, the lowest in Opolskie voievodship. In all provinces (voievodships) the statistical data from NHF were several times higher than reported by CSO, this ratio for Poland was 5.61. The highest value of this indicator (13.03) was noted in Warmian-Masurian voievodship, the lowest one - (4.03) in Lesser Poland.

However, no regularity was found between e.g. population, economic condition of a province, number of psychiatric facilities, psychiatrists, and any of CSO or NHF indicators.

DISCUSSION

The whole-nation surveys on mental health are rather difficult, time-consuming, and expensive methods for assessing health needs. So it is important to find out and use every method which may simplify such an evaluation with appropriate accuracy and timeliness. According to Polish law the National Health Fund has collected data on all reimbursed prescriptions since 2004. That is an unique possibility to evaluate the normative health needs basing on use of medicines of every individual patient irrespectively from the place where the prescription has been given. Statistical offices collect the information from institutions (e.g. healthcare facilities) by the use of statistical forms. It is also regulated by law which information may be collected, by whom and when. The individual data are confidential, but the aggregated information may be published.

"Health needs assessment is a systematic review of the health issues facing a population leading to agreed priorities and resource allocation that will improve health and reduce inequalities" [13]. Usually the epidemiological and statistical data are used for those purposes. Medicines consumption is rather rarely used as a tool for health needs assessment, in spite of that the prescribed medicines are usually bought and used by the patients which are really in need. The quality of data is essential for evaluation and verification of normative health needs (understood as the number of healthcare services required for a given population suffering from a given condition).

MOREOVER, THE IMPORTANT DIFFERENCES IN DIAGNOSES WERE FOUND. ACCORDING TO CSO THE NEUROTIC DISORDERS, AFFECTIVE DISORDERS AND SYMPTOMATIC MENTAL DISORDERS WERE THE MOST OFTEN MENTAL PROBLEMS IN POLAND IN 2011.

The timeliness of data cannot be overestimated when the healthcare needs are considered. The preparation of statistical yearbooks is usually time-consuming and the "Statistical Yearbook of the Republic of Poland 2011" contains the data from year 2010 as the newest ones. In the case of "Health and Healthcare in 2011" published in 2012 the data also come from the previous year. In that respect NHF data are available much sooner than CSO information. NHF data are collected online and the results are available every month. However, the analysis of NHF information require specialists who are aware of different factors influencing healthcare needs.

In contrast to somatic disorders (e.g. pneumonia, hypertension, diabetes) mental diseases and behavioural disorders are rather difficult to diagnose and hard to be monitored [1]. On the other hand, the majority of psychotropic drugs are prescribed by GPs. The percentage of people with mental disorders has been estimated by the use of questionnaires, as high as 36% in a general population [14]. Polish CSO stated that approx. 3.64% of Polish population are treated in psychiatric outpatients facilities. The NHF data indicated that over 20% used psychotropic medicines. The difference was 16.78% and it can be the indicator of underestimation of healthcare needs and/or of overconsumption of medicines. According to Jackson et al. [15] the use of psychotropic medicines was a need in approx. 30% of patients in primary healthcare. So it can be stated that the mental and behavioural disorders in Poland are rather underdiagnosed or underreported in statistical forms.

The most striking feature of presented results are the discrepancies between almost all data obtained from CSO and NHF. For example, the number of patients treated in facilities (according to CSO) may differ from the actual number of people with mental health problems, as one person may be treated in several institutions because of several mental problems at the same year. That is the probable the cause of difference between number of patients registered and treated because of 10 most frequent conditions (1 485 266 patients) and total number of patients registered by CSO (1 404 148 patients). Comparison of data from CSO and NHF revealed the significant differences between both sources. First of all, the number of patients with mental problems in Poland registered by CSO is 5,61 times lower than the number of patients whose prescriptions has been reimbursed. Such underestimation has ranged since 4 to over 13 times depending on the voievodship. It can be used as a measure of health inequalities.

Moreover, the important differences in diagnoses were found. According to CSO the neurotic disorders, affective disorders and symptomatic mental disorders were the most often mental problems in Poland in 2011. On the other hand, NHF recognized alcohol dependence syndrome, other neurotic disorders and schizophrenia as the most often mental health problems at the same year. The differences in the absolute numbers were prominent in the case of F10 (mental and behavioural disorders due to psychoactive substance use - mainly alcohol) – 38 460 patients more in NHF as compared with CSO. However in F10.2 (dependence syndrome) more patients were registered by CSO than by NHF. It means that 15 567 patients with dependence syndrome did not fill the prescriptions. That was the quantitative measure and the scale of non-compliance of patients with dependence syndrome. There was not such difference in the case of schizophrenia. The majority of patients were treated by psychiatric facilities, but only 5000 patients (3.38%) did not filled prescriptions given by doctors. That was not the case in neurotic, stress related and somatoform disorders – almost every third prescription was given by doctors other than psychiatrists. However Henrikssen and Parnas [16] found that noncompliance rates in patients with schizophrenia range from 50%–75% after 1–2 years of treatment, impeding treatment and increasing the risk of relapse, readmission, and suicide 3 - to 4-fold.

CSO data and NHF data present quite different pictures of health needs of patients with mental and behavioural disorders in Poland. It is important, because the statistical data are the bases for preparation of strategic and regional health policies. It seems that the mental health needs assumed in such programs are underestimated.

The corrects use of psychotropic medicines by the general populations may be a valuable tool to predict the health outcomes e.g. in case of suicide rates [17]. That is and emerging problem as the estimation of QALY losses showed that mood disorders ranked second behind pain-related chronic medical conditions [18]. Psychotropic drugs were prescribed by 64% of GP in sleep, anxiety and depressive disorders [19]. Also the use of antidepressants among 65+ year-olds increases with age and proximity to death to very high levels [20].The analysis of spatial distribution of NHF and CSO data on mental and behavioural disorders revealed important health inequalities in different voievodships. Similar phenomena might be seen in other countries [21] but these variations should be further investigated.

CONCLUSION

The comparison of data from CSO and NHF revealed the important spatial differences in healthcare inequalities, scale of double-registration of patients and overconsumption of medicines together with underestimation of healthcare needs. Also other information e.g. on patients' non-compliance in alcohol dependence syndrome can be obtained in this way.

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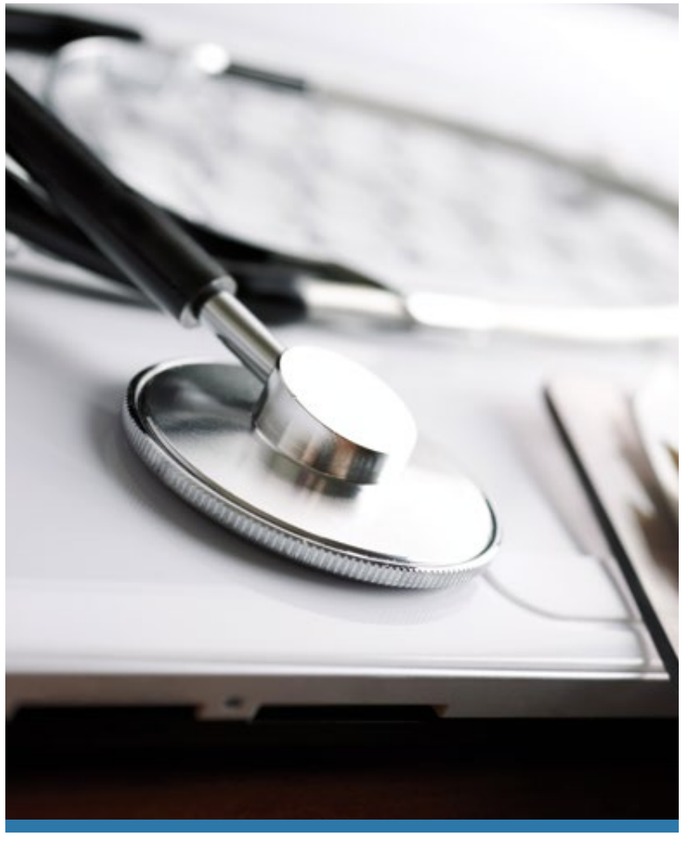
Conflicts of interests: None declared

Keypoints

Central Statistical Office data and National Health Fund data present quite different pictures of health needs of patients with mental and behavioural disorders in Poland as the statistical data refer to the outpatients from psychiatric facilities but NHF – to general population.

Comparison of both sources may be a method for assessing actual mental health needs, to study health inequalities, and non-compliance as well. Strategic and regional health programs should take into account both types of sources.

The correct use of data on psychotropic medicines consumption by the general populations may be a valuable tool to evaluate and predict the health outcomes, QALY and patients' non-compliance. ■



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