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PERCEIVED QUALITY OF OUT- AND IN-PATIENT SERVICES IN UKRAINE: HEALTH CARE USERS' PERSPECTIVE

СУБ'ЄКТИВНА ЯКІСТЬ АМБУЛАТОРНОЇ ТА СТАЦІОНАРНОЇ ДОПОМОГИ В УКРАЇНІ: ПОГЛЯД СПОЖИВАЧА МЕДИЧНОЇ ПОСЛУГИ

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Abstract

Quality is perhaps the most ambiguous concept in health care service provision though number of studies suggest and use a list of attributes assessed by health care users for identifying perceived quality of the service. This study is aimed to assess perceived quality of health care services through the health care users' angle measuring quality-related attributes of health care services and compare its importance with the access-related ones. The paper presents empirical study results focused on health care service quality. We use the data originated within a wider study «Health Index. Ukraine» on knowledge, attitudes and behavior of people that is linked to health and care services. The data has been collected in May- July 2016 in Ukraine with the use of nationally and regionally representative sample of adults 18+ years old. It appears that health care users assess both ambula-

tory services and hospitalizations as good and acceptable: 37% and 53% of out-patients and in-patients respectively. Perceived treatment effectiveness is the most important service attribute for both out- and in-patient service users (which has got positive enough assessment), while second important attribute for out-patient service users is «opportunity to receive free-of-charge treatment and test» and for in-patient care – «provision of pharmaceuticals». Two later access-related attributes have got mostly negative assessment by health care users. We conclude that chronic underfunding of health care services impacted the provision of pharmaceuticals and accessibility of the services, while self-coping strategies of physicians and health care users (also seen in informal patient payments) allowed maintain adequate service wrapping, or perceived quality. Moreover, there is a great lack of information about health care users' needs and expectations in Ukraine. That is why the studies employing health care users' opinion, perspective are important both for the facility which work is assessed and for the healthcare governance in general. Health care users' assessment of service quality adds lacking dimension for analysis and further decisions connected with fulfilment of the requirements (expectations). Further cross-sectional studies on perceived quality are necessary to monitor progress in health care service provision, and especially its quality and access attributes.

Key words: health care service, perceived quality of service, health care users, survey, Ukraine.

Анотація

Якість є, мабуть, найбільш розпливчастим концептом в наданні послуг у сфері охорони здоров'я, хоча певна кількість досліджень пропонує та використовує перелік атрибутів, що оцінюються споживачами медичних послуг для визначення суб'єктивної якості послуг. Це дослідження має на меті виявити суб'єктивну оцінку якості, яку дає споживач медичних послуг. Стаття ґрунтується на даних «Індекс здоров'я. Україна», які були зібрані в травні–червні 2016 р. в Україні з використанням репрезентативної (для країни та кожної області) вибірки дорослих у віці 18+ років. Виявилось, що споживачі медичних послуг вважають амбулаторну та стаціонарну допомогу доброю та прийнятною: 37% серед споживачів амбулаторної та 53% стаціонарної допомоги відповідно. Суб'єктивна ефективність лікування є найважливішим атрибутом як для споживачів амбулаторної, так і стаціонарної допомоги (атрибут отримав доволі позитивну оцінку), тоді як другим за значущістю атрибутом названо «можливість отримати безкоштовне лікування та аналізи» (для споживачів амбулаторної допомоги) та «забезпечення лікарськими засобами» (для споживачів стаціонарної допомоги). Останні два атрибути, які стосуються доступності послуг, отримали в більшості негативну оцінку від пацієнтів. Хронічне недофінансування послуг в охороні здоров'я лишає суттєвий відбиток на забезпеченні ліками та доступності послуг, але стратегії, до яких вдаються лікарі та пацієнти (наприклад, неформальні платежі пацієнтів), дозволяють підтримувати адекватну «обгортку» послуги, або позитивно оцінювати суб'єктивну якість медичної допомоги.

***Ключові слова*:** медична послуга, суб'єктивна якість послуги, споживачі медичної допомоги, опитування, Україна.

Problem statement. Quality is perhaps the most ambiguous concept in health care service provision (Akalin-Baskaya & Yildirim, 2007). Typically, a distinction is made between observed quality of care and perceived quality of care. The fist type shows how well the requirements of professional standards are met, focusing on mostly processes and structures measures. The second type shows views of patients on service received. Or in other words, while observed quality refers to «objective» quality, or aggregate performance of the service, perceived quality of care – in particular, its measurement tools – are often neither described well enough nor validated. However, patients' perception of quality is very important for understanding relationships between quality of care and utilization of medical services, this is why perceived quality is often used an outcome of health care delivery (Baltussen et al., 2002). In details, perceived quality or subjective assessment of service attributes shows to professionals ways of improvement of services and on the other hand, it is important in terms of impact on further behavior of the person.

Quality of health care services appears among the interests and activities of all key parties of the process of service provision and consumption. Indeed, health care providers usually see quality in terms of clinical effectiveness and clinical standards, guidelines (Tomlin et al., 1999). Health care users also appreciate treatment outcomes (perceived treatment effectiveness) but focus though mostly on service «wrapping»: conditions under which service is

provided, provider's attitude, waiting time, etc (Baltussen et al., 2002). Service efficiency and users' satisfaction are important for policy makers (Baltussen et al., 2002).

However, when the concept of «quality of health care services» is unpacked, it brings special attention to details of the service, e.g. type of the service, level of health care facility, but also refers to the values of organizations, organizational climate and processes at the facility. For example, in 2014 National Health Service of Great Britain published and discussed within the community of healthcare professionals a list containing around 400 unique indicators for hospitals (Bogomaz & Anufriyeva, 2015), e.g. what are the processes when the surgery is cancelled, whether patients and community members are involved in the development of service design etc. Having unique management, personnel, processes and equipment, every health care facility uses its own approaches to measure quality but still relies on the chosen Standard (for example, ISO 9001, JCI, Accreditation norms).

The general understanding of the notion «quality indicators» tells us that they are statistical measures that give an indication of output quality or process quality (Eurostat, 2010). Quality indicators in health care usually show the results and quality of treatment processes in the three main aspects: safety; result and quality of process; and patients' experience (Bogomaz et al., 2010). While for health care users, it rarely comes to system of indicators, they mostly compare recent experience with the previous usage of the service and their personal view on it and researchers may introduce new structure of assessment of the service used that corresponds with either organizational or regional, national policy monitoring and evaluation objectives. In this case, we again refer to so-called «perceived (by the user) quality» that has numerous drawbacks in its interpretation, but no better approaches and instruments are available.

In contrast to more developed and responsive to citizens' needs health care systems, the most problematic aspect of health care service provision in post-Soviet countries is chronic underfunding intertwined with corruption or inefficient use of available funds (Lekhan et al., 2015; Rechel, 2015; Semigina, 2016). Although typical health care system priorities – access and quality in health care and its improvement – are in the policy agenda, still, implementing strategies for its gaining are rather ineffective as more attention is given to the issue of financial resources or their deficit. Moreover, information on health care users' experience is neither available nor employed by decision- and policy-makers in post-Soviet countries (Rechel, 2015). Low number of studies on health care service quality in the Eastern European region (a few in Ukraine) and especially from the health care user perspective goes in line with underestimation of the issue of quality in healthcare despite the fact that most of the countries declare it as the policy objective.

Review of previous studies. Responsiveness of health care services is one of the goals of health care system that corresponds to health care users' attitudes, experience and perspective. It is typically measured trough perception of health care service quality (manner of provision, i.e. friendly) but two-fold effort are expected: to assure an adequate clinical intervention and pack it into patient-oriented wrapping (WHO, 2012): «two complementary efforts are needed – firstly, to make health-service provision friendly, so that adolescents are more likely to be able and willing to obtain the health services they need; and secondly, to ensure that the health services that adolescents need to stay healthy or to get back to good health are in fact being provided, and are being provided in the right manner. In other words, efforts must be made to increase both health service utilization and health service provision» (p. 7).

When we apply this notion for post-Soviet context, it appears that people are not willing to get consultation of medical doctor as in case of sickness they prefer to resort to self-treatment or alternative (folk) medicine. It reflects barriers to health care services – either financial or ethical, i.e. lack of trust in health care system or in health care professionals (Balabanova et al., 2004; Health Index.Ukraine, 2016). The distrust of health care users in Ukrainian health care may be justified. Luck et al. (2014) studied the quality of care for heart failure and chronic obstructive pulmonary disease and demonstrated that the quality of care for common non-communicable diseases is poor at all levels of health care service provision and nationwide. Also, Peabody et al. (2014) found that a higher quality of care is provided by younger, female physicians as well as by those who had been recently trained in chronic disease or health behaviors. However, health care providers have critical working conditions: their salary is lower than industrial average, state of facilities and equipment is outdated, health care goods for medical assistance are often absent.

Furthermore, in 2010, a multi-country study conducted in six Central and Eastern European

countries (namely, Bulgaria, Hungary, Lithuania, Poland, Romania and Ukraine) revealed that in Ukraine 41% of out-patients have been satisfied with the service quality in contrast to 55.2% in Lithuania, 62.7% in Romania, and 70.3% in Hungary (Stepurko et al., 2016). In case of in-patient services, 45% of those who were hospitalized in Ukraine during one year preceding the survey reported their satisfaction with the service quality, whereas in Lithuania (58%) and Hungary (67%) in-patients seem to be more satisfied. Interestingly however, that out-patient service users in Bulgaria (46%) and in-patient service users in Poland and Romania (48%) are about similarly satisfied as in Ukraine.

In a wider perspective, it is not surprising that the level of satisfaction with Ukrainian health care system is one of the lowest in the world: Ukraine together with Brazil and Russia show one of the lowest levels of satisfaction. In 2007, 2 out of 10 and in 2014 almost 3 out of 10 reported satisfaction with health care system in Ukraine (OECD, 2015). While majority of people in OECD countries «are satisfied with the availability and quality of the services in the area where they live. On average across OECD countries, 71% of people reported being satisfied with their health care system in 2014. However, there are wide variations across countries. In Austria, Belgium, Luxembourg and Switzerland, about 9 citizens out of 10 reported being satisfied with their health care system. This proportion was much lower in Chile and Greece where less than 4 citizens out of 10 reported such satisfaction» (OECD, 2015).

The aim and methods of the study. This study is aimed to assess perceived quality through measuring quality-related attributes of health care services and compare its importance with the access-related ones. The paper presents empirical study results focused on health care service quality. We use the data originated within a wider study «Health Index. Ukraine» on knowledge, attitudes and behavior of people that is linked to health and care services (Health Index.Ukraine, 2016).

In order to reveal the patterns of people's behavior with regard to health and obtain representative data on attitudes towards health care services, the research design is quantitative and cross-sectional one. The survey has been conducted in May – July, 2016 in Ukraine. Nationally and regionally (*oblast*) representative sample has been designed and implemented for household representatives resulting in more than 10 000 respondents nationally and 400 respondents per *oblast* (adult general population – 18+ years). Sample size per oblast has been calculated using the following formula $n=1/(\Delta^2+1/N)$, where Δ is taken as 5%) and N is the size of general population, n is sample size. For the general population which is larger 100 000 units and comes to infinity, the formula still suggests 400 sample units, i.e. respondents in our case (Paniotto and Maksimenko, 2003)

A multi-staged random probability sample was drawn in each oblast: in the beginning, sampling points were chosen in consideration of regional, urban/rural and ethnic characteristics; then, addresses/households per sampling point were selected using the random route method. Only one individual per household was interviewed. If the respondent refused or was unavailable to take part in an interview after two call backs recorded in the fieldwork report, a replacing respondent was identified following the same procedure. As a result, about 400 respondents per oblast participated in the survey (for socio-demographic characteristics of users-respondents see Table 1).

Professional interviewers have collected data within face-to-face interviews based on structured questionnaire. Face-to-face interviews as data collection mode have numerous strengths despite high costs linked to the following benefits: face-to-face interview can ensure maximum representation of all stratums of the population, which is not achieved by telephone or online survey in Ukraine. Also, it is possible to observe and note spontaneous reaction of the respondents, their attitudes towards the topic raised as well as allows longer conversation with respondent in comparison with other modes of data collection, not to mention higher response rate and greater openness of respondents when communicating face to face with the researcher.

The research instrument of «Health index. Ukraine» survey has included questions on healthy lifestyle, attitudes towards health care reform, knowledge of symptoms and questions on service consumption (out- and in-patient consumption by adults, use of ambulance and out-patient pediatrician care). The instrument has been developed under the supervision of international scientific board whose role is seen in assuring relevant to international trends and to Ukrainian context study objectives as well as consistency of study objectives with questions in the instrument. The scientific board has not been asked to contribute to the wording of the questions in Ukrainian and Russian versions as it is area of expertise of local researchers and sociologi-

cal agency (the latest also did a pre-test of research instrument). Thus, after the approval of scientific board, the research instrument has been translated from English into Russian and Ukrainian. The total number of questions in the research instrument is 200, but on average each respondent answered less than 100 questions (it took about 30 minutes on average) as only minor share of the sample reported service usage during preceding 12 month. The respondents looked interested in the topic of the research, therefore, the response rate obtained is rather typical for surveys. However, respondents who had high level of health care service consumption and had to provide answers on almost all 200 questions received a small in kind gift from the sociological agency.

In line with the aim of this paper, we refer to the experience of those respondents who reported on out- and in-patient service consumption. In details, all respondents have been asked by the interviewer how many times they have visited a medical doctor or have been hospitalized and if the answer is higher than zero, then we include the experience of this person into this analysis. After asking respondents about the details of their service usage (payments, choice of the provider etc. that is not included in this paper), the users have to assess attributes of the health care service and provide the overall service assessment. The list of attributes varied for out- an in-patient service assessment, but in principle it contains quality-related dimensions, e.g. «treatment effectiveness», or perceived by the user effectiveness, attitude of medical staff, and access-related dimensions. The distinction between quality-related and access-related attributes is made based on the theoretical framework of Berki and Ashcraft (1980) and the list of questions employed in this paper and analysis is presented in the Appendix A. The list of attributes have been developed based on previous experience. First, these questions brought no difficulties during previous study in 2013 as it was revealed during personal communication of researchers with sociological agency, that used these questions in 2013). Second, the literature on the topic is considered for the list of attributes (European Commission, 2010; European Commission, 2014). The questions were asked either in Ukrainian or Russian, depending on the respondent's preference.

In this paper, we have sampled out- and in-patients from the general sample (out of 10 000 household representatives): only the household representatives who visited medical doctor during a year preceding the survey are included in the analysis conducted for this paper. The empirical data analyzed in this paper is represented by 3 627 out-patient service users (out of 10 123 who provided the answer or 35.8%) and 1 516 hospitalized adults (out of 10168 who gave the answer or 14.9% of national sample).

Apart of descriptive statistics, we have also run ordered probit regression analysis in order to investigate the association between the perceived assessment of service quality (seven dependent variables; range from 0 (negative assessment) to 2 (positive assessment) and (a) the individual health status; (b) individual socio-demographic characteristics.

Socio-demographic characteristics of health care consumers are presented in Table 1. In particular, it appears that more female respondents report out-patient service consumption than men (41.6% vs. 28.8% respectively) and there are also more health care users among older people (30.4% vs. 43.7%).

Findings. The response rate of the study is 47.1%, however as explained above, it has not been resulted in the decrease of the sample size since replacing respondent was identified. Overall, we observe in our study positive enough assessment of the services and its attributes: 52.0% and 37.2% of out-patients evaluate the service as acceptable or good respectively and almost the same per cent is observed among those who were hospitalized during last year (49.5% and 41.5% consequently). Therefore, only 9% of health care service consumers label the service as «bad».

Apart from the overall assessment of the service, out-patients were offered to assess certain attributes of the service consumed. As it is presented in Table 2, the highest assessment was given to the following attributes: politeness of doctors in communications with health care users and their family members (53.7% – good and 40.0% – acceptable) and clearness of doctors' explanations to health care users (49.7%, and 40.6% accordingly). The lowest assessment was given to such an attribute as «opportunity to receive necessary diagnostic tests, laboratory tests and treatment procedures free of charge» (19.4% – good, 27.6% – acceptable and bad or very bad – 52.9%) but also «clear and understandable payment policies» had 30.3% respondents who selected «bad» as an answer on the question. All other attributes' assessment score in between 8.2% «bad» mark for working hours to 13.2% – perceived effectiveness of the treatment, 13.5% – conditions of the facility and 15.4% – territorial convenience of health care facility.

Table 1. Socio-demographic characteristics of the respondents who reported out- or in-patient service consumption during the year preceding the survey

Out-patient service users: N = 3 627 (35,8% out of total sample) **In-patient service users: N = 1 516 (14,9% out of total sample)**		**Out-patients, "yes, visited"**		**In-patients, "yes, visited"**	
		N	**%**	**N**	**%**
Age	18 – 29 years	601	30.4	234	11.8
	30 – 44 years	892	31.5	364	12.8
	45 – 59 years	951	36.5	396	15.1
	60 and more	1182	43.7	522	19.1
Gender	Female	2307	41.6	943	16.9
	Male	1320	28.8	573	12.5
Type of residence	Rural	1083	34.5	508	16.1
	Urban	2543	36.4	1007	14.4
Education	Basic/junior secondary	149	37.6	71	17.7
	Secondary	709	34.1	301	14.4
	Career and technical education	640	34.4	286	15.3
	Vocational school or college	1059	35.5	469	15.7
	Basic higher	163	31.4	59	11.3
	Complete higher	863	39.9	310	14.3
	Scientific degree (PhD and higher)	36	38.7	16	17.4

In addition, recent out-patient service users have been also asked about the most important attribute of the service. «Treatment outcomes», or perceived effectiveness, is seen as the most importance service attribute (61.8% selected this option), the second important (51.1%) is opportunity to receive necessary test and treatment free-of-c harge. The least important service attribute is «working hours» (7.6%).

If we compare assessment of the service attribute with the expectations of the health care service users, it appears that financial barriers are the largest in the out-patient care: users highly value free-of-charge treatment and test but they are not able to receive it. More positive situation is noticed with service quality, i.e. perceived treatment efficiency, which is rated as highly important for the health care users and most of them (86.8%) find it acceptable or good.

In line with the regional differences, data allows analyzing only out-patient service assessment as oblast groups are not saturated enough for the analysis (1 516 inpatients for 24 territorial units resulting in about 60 cases per unit). Figure 1 describes overall assessment of ambulatory care used and the highest marks to the service are given by the population of Ternopil (68%), Lugansk (61%) and Chernivtsi (59%) regions. On the contrary, the lowest assessment is observed in Poltava (17%), Volyn (19%), Mykolayiv (21%) regions and Kyiv city (22%).

Table 2. Importance and assessment of service attributes through the perspective of out-patients who reported service consumption during a year preceding the study

How do you assess the following aspects of out-patient service?	Out-patient service attributes assessment							
	% rank as the most important		Bad		Acceptable		Good	
	N	%	N	%	N	%	N	%
Perceived effectiveness of treatment	2242	61.8	455	13.2	1489	43.3	1496	43.5
Politeness (goodwill) of doctors in communications	557	15.4	226	6.3	1430	40.0	1920	53.7
Clearness of doctors explanations	528	14.6	343	9.7	1441	40.6	1765	49.7
Territorial convenience of health care facility	631	17.4	548	15.4	1487	41.6	1537	43.0
Conditions of the facility, cabinet (e.g.,repair)	438	12.1	479	13.5	1644	46.3	1430	40.2
Working hours	276	7.6	290	8.2	1785	50.7	1443	41.0
Opportunity to receive necessary diagnostic tests, laboratory tests and treatment procedures free of charge	1855	51.1	1796	52.9	923	27.6	650	19.4
Clear and understandable payment policies (including absence of out-of-pocket payments)	596	16.4	923	30.3	1278	42.0	841	27.6
Hygiene of examination and procedures.	371	10.2	456	13.3	1591	46.3	1389	40.4
Overall assessment	-		341	9.8	1842	53.0	1293	37.2

Concerning hospitalizations, there have been another set of the attributes for assessment. The attributes are not universal for out-patient care and hospitalizations because of different nature of service. Table 3 shows that the highest appraisal has got goodwill of physicians (36.8% – acceptable and 57.2% – good) and nurses (38.8% – acceptable and 54.7% – good) as well time spend for hospital admission (36.8% and 55.2% respectively) and perceived effectiveness of treatment (41.8% and 48.2% consequently).

Low level of assessment has been given to provision of pharmaceuticals (only 17% of those who had admission experience during previous 12 months assessed this attribute as good/very good, 18% – acceptable, in contrast to 66% – bad or very bad). Besides, the second attribute that got negative assessment is «quality of food» (41.8% reported that

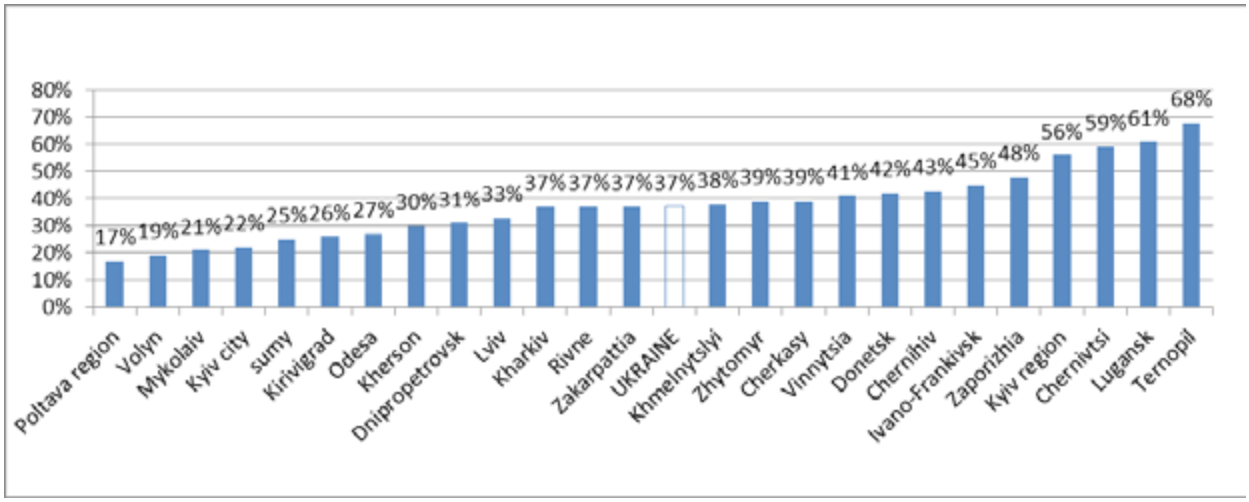

Figure 1. *Perceived quality of out-patient services: comparison across the regions (% of good evaluation)*

it is bad) and the third – clear and understandable payment policies (26.6%).

The most important attributes of in-patient care (first columns of Table 3) are treatment outcomes (perceived effectiveness) (47.6%) that is also the most important attribute of out-patient service. The second and the third important attributes are provision of pharmaceuticals (39.8%) and physicians' qualification (37.8%). Perceived effectiveness of treatment and doctors' qualification were assessed positively by in-patients whereas provision of drugs in hospitals «bad».

Moreover, we have analyzed the socio-demographic similarities and differences in the assessment of out- and in-patient services in terms of age groups, sex, education, type of residence and household income (see Table 4). We have included in the analysis overall assessment of the service and the most important for the respondents attributes. When age groups are compared, we reveal that there is minor difference (that does not exceed 10%) in the overall assessment of out-patient care. In contrast to similar care evaluation between males and females, larger difference (up to 9%) is observed in the assessment of perceived effectiveness of treatment (between the younger patients and older ones – the latter gives worse evaluation of this attribute). This observation is also relevant for in-patient service users perceived effectiveness of treatment that is assessed lower by older age groups (46% vs 55% of «good» answers). Also, for free-of-charge treatment group of 45-59 years old gives more negative scores than others.

Comparing rural-urban respondents' assessment, we did not identify drastic differences in case of assessment: the highest difference in 8% is noticed in case of overall assessment of out-patient services (35% good among urban and 43% – rural) and 10% difference in assessing in-patient care (rural 48% good vs 38% of urban residents).

Among the education groups, the most positive assessment has been given to out-patient care by 2nd education group and those who have higher education to the perceived effectiveness of treatment (47% and 50% in contrast to others 37-41%). In hospitalization, the highest difference is noticed between second age group (33%) and higher education group (49%) and basic primary education (51%) but because of low saturation of basic higher education group we cannot consider its differences.

Table 5 presents the results of seven ordered probit regression analyses. The regression results show that in all seven models, the place of residence and good perceived health have always a significant association with quality-related indicators. In particular, the place of residence have a significant negative association: out- and in-patients from urban areas have higher probability to report on more negative assessment of service attributes as well as those who believe they have unsatisfactory health. On contrary, gender indicator does not show significant results in all models. Other independent variables, e.g. age, are significant only in the models linked to conditions of the facility and politeness of medical doctors in both out- and in-patient models: older respondents show more positive assessment of the service attributes.

Table 3. Importance and assessment of service attributes through the perspective of in-patients who reported service consumption during a year preceding the study

How do you assess the following aspects of in-patient service?	In-patient service attributes assessment							
	% rank as the most important		Bad		Acceptable		Good	
	N	%	N	%	N	%	N	%
Time spend for the hospital admission and ambulance drive	120	7.9	117	8.0	541	36.8	810	55.2
Hygiene and conditions of the facility	213	14.1	211	14.2	624	42.1	647	43.7
Quality of food	161	10.6	584	41.8	500	35.7	314	22.5
Affordability of diagnostics and laboratory test	402	26.5	225	15.6	629	43.7	586	40.7
Provision of pharmaceuticals	604	39.8	936	65.7	253	17.8	235	16.5
Medical doctors' qualification	573	37.8	79	5.5	542	37.4	829	57.1
Goodwill of physicians	130	8.6	90	6.1	542	36.8	843	57.2
Goodwill of nurses	32	2.1	96	6.5	568	38.8	800	54.7
Perceived effectiveness of treatment	721	47.6	139	10.0	582	41.8	671	48.2
Clear and understandable payment policies (including absence of out-of-pocket payments)	93	6.1	327	26.6	495	40.3	407	33.1
Overall assessment	-		129	9.0	708	49.5	594	41.5

Table 4. Perceived access to and quality of out- and in-patient services: socio-demographic characteristics

Out-patients: N = 3 627 In-patients: N = 1 516		Out-patient service						Hospitalization					
		Overall assessment		Perceived effectiveness of treatment		Free-of-charge treatment, tests		Overall assessment		Perceived effectiveness of treatment		Provision of pharmaceuticals	
		Good N (%)	Bad N (%)	Good N (%)	Bad N (%)	Good N (%)	Bad N (%)	Good N (%)	Bad N (%)	Good N (%)	Bad N (%)	Good N (%)	Bad N (%)
Age	18 – 29 years	199 (35)	46 (8)	271 (48)	43 (8)	122 (22)	277 (50)	97 (44)	16 (7)	117 (55)	12 (6)	41 (19)	146 (66)
	30 – 44 years	327 (38)	100 (12)	406 (48)	99 (12)	168 (21)	428 (53)	147 (42)	32 (9)	171 (50)	25 (7)	60 (18)	217 (64)
	45 – 59 years	339 (37)	89 (10)	379 (43)	122 (14)	127 (15)	513 (59)	155 (41)	41 (11)	166 (46)	48 (13)	64 (17)	258 (69)
	60 and more	414 (37)	104 (9)	426 (39)	186 (17)	227 (21)	523 (50)	195 (40)	40 (8)	218 (46)	55 (12)	70 (14)	314 (65)
Gender	Female	851 (39)	216 (10)	947 (44)	295 (14)	397 (19)	1130 (53)	376 (42)	79 (9)	419 (49)	96 (11)	138 (16)	591 (67)
	Male	428 (34)	123 (10)	535 (43)	155 (13)	248 (21)	621 (52)	219 (41)	48 (9)	252 (48)	44 (8)	97 (18)	344 (64)
Place of residence	Rural	435 (43)	73 (7)	471 (47)	105 (10)	226 (23)	485 (50)	233 (48)	44 (9)	255 (54)	38 (8)	88 (19)	302 (63)
	Urban	844 (35)	266 (11)	1010 (42)	345 (14)	419 (18)	1266 (54)	362 (38)	84 (9)	416 (46)	101 (11)	147 (16)	632 (67)
Education	Basic/Junior secondary	55 (40)	13 (10)	51 (37)	24 (18)	30 (23)	68 (52)	34 (51)	8 (11)	34 (57)	8 (13)	8 (12)	44 (65)
	Secondary	262 (39)	62 (9)	314 (47)	88 (13)	149 (23)	338 (52)	126 (44)	27 (9)	141 (50)	21 (8)	48 (17)	187 (67)
	Career and technical	201 (33)	63 (11)	228 (38)	83 (14)	95 (16)	299 (52)	89 (33)	29 (11)	108 (41)	30 (12)	42 (16)	176 (65)
	Vocational school or college	356 (36)	97 (10)	402 (41)	143 (15)	194 (20)	534 (54)	177 (40)	35 (8)	203 (48)	47 (11)	66 (15)	289 (66)
	Basic higher	50 (32)	19 (12)	59 (38)	20 (13)	27 (19)	74 (52)	17 (31)	7 (13)	14 (27)	6 (12)	11 (20)	28 (50)
	Complete higher	336 (40)	75 (9)	407 (50)	86 (11)	143 (18)	414 (53)	142 (49)	18 (6)	166 (57)	22 (8)	53 (18)	201 (68)

Table 5. Ordered probit regression analysis on the quality-related attributed of health care services used during the preceding 12 months

Data collection year: 2016	**Out-patient physician services**				**In-patient hospital services**		
	Perceived effectiveness of treatment	**Politeness of doctors**	**Hygiene of examination and procedures**	**Perceived effectiveness of treatment**	**Conditions of the facility**	**Politeness of medical doctors**	**Qualification of medical doctors**
	[0 – Negative, 1 – Neutral, 2 – Positive]						
	Coefficient (S.E.)	**Coefficient (S.E.)**	**Coefficient (S.E.)**	**Coefficient (S.E.)**	**Coefficient (S.E.)**	**Coefficient (S.E.)**	**Coefficient (S.E.)**
Age [Years]	0.000 (0.002)	**0.009*** (0.002)	**0.008*** (0.002)	0.002 (0.003)	**0.006**** (0.003)	**0.008*** (0.003)	0.005 (0.003)
Gender [0 – Male; 1 – Female]	0.074 (0.069)	0.037 (0.070)	0.104 (0.068)	-0.018 (0.108)	0.093 (0.102)	0.040 (0.107)	0.109 (0.108)
Residence place [0 –Village; 1-Town or City]	**-0.313*** (0.074)	**-0.358*** (0.075)	**-0.128**** (0.073)	**-0.392*** (0.114)	**-0.415*** (0.108)	**-0.257*** (0.114)	**-0.366*** (0.115)
Level of education [From 0 – Uncompleted primary education to 5 – Tertiary education]	**0.041**** (0.022)	**0.069*** (0.022)	**0.047*** (0.022)	0.025 (0.036)	**-0.056**** (0.034)	0.056 (0.036)	0.028 (0.036)
Good perceived health [0 – No; 1 – Yes]	**0.766*** (0.085)	**0.593*** (0.086)	**0.451*** (0.083)	**0.902*** (0.143)	**0.245**** (0.131)	**0.513*** (0.141)	**0.249*** (0.141)
Threshold = 0	**-1.763*** (0.156)	**-2.158*** (0.164)	**-1.224*** (0.153)	**-2.131*** (0.241)	**-1.831*** (0.224)	**-2.230*** (0.244)	**-2.582*** (0.250)
Threshold = 1	**0.426*** (0.152)	**0.416*** (0.154)	**1.057*** (0.152)	0.192 (0.230)	0.249 (0.218)	0.248 (0.228)	-0.007 (0.230)
Number of observations	3390	3501	3375	1381	1468	1460	1436
Nagelkerke R Square	0.044	0.026	0.014	0.051	0.020	0.017	0.017

* $p < 0.05$; ** $p \leq 0.10$.

Interestingly however, the level of education as independent variable has significant positive associations in out-patient models only with the exception of «conditions of in-patient facility» where education has a significant negative association with dependant variable: the higher education of those who have been hospitalized, the lower assessment is given to the «in-patient facility condition» attribute.

Quality of medical care can be assessed from the point of view of its structure (e.g., adequacy of equipment, number and qualification of personnel), processes (e.g., management) or results (e.g., treatment outcomes) (Bogomaz et al., 2010; Bogomaz & Anufriyeva, 2015).

Besides, medical care as a process has several interested parties. At least top management of medical facility, medical personnel and health care users declare importance of quality of health care services. However, each of them sees quality of care differently. Manager of health care facility would pay attention to safety, resources, inputs and outputs of the processes and general financial result. Medical doctors pay attention to pain release, absence of complications, treatment outcomes, whereas health care users can assess clean rooms, waiting time, politeness of personnel and quick solving of the problem as the reason of referral to health care service provider.

This means that each interested party could have its own indicators of quality. In case of doctors and managers, these indicators may be defined and supervised by the means of documenting and analyzing all the statistical information about the processes. In case of health care users, the assessment of service quality is performed based on personal previous experience. Health care users usually assess what they see and feel, in other words – «wrapping» of the service whereas clinical part is not evaluated because of informational asymmetry. Health care providers should pay more attention to the dimensions valued by health care users in case managers and physicians are interested in satisfied health care users (that also gives an impact to treatment adherence, for example).

The literature provides limited number of the studies on perceived quality of health care services and some of them (e.g. on satisfaction) have been outlined above, but other countries (where quality and accessibility of service provision is also problematic) present rather interesting evidences. Indeed, Jorge Mendoza Aldana et al. (2001) reports importance of satisfaction with the provider's usual behavior (68,9%): respect and politeness from the provider, irrespective of whether they used fixed facilities or outreach services. Whereas this attribute was not among the most important for the service users who took part in our study. Our study shows similar to Baltussen et al. (2002) results in the part where service users assess «adequacy of resources and services» as relatively poor because of absence of drugs.

Furthermore, health care users in Ukraine and other post-Soviet countries resort to 'do-it-yourself' strategies in order to improve sub-standard quality of health care service provision at public facilities. Searching «personal» medical doctor, paying informally, using personal connections are the examples of these coping strategies which arise on the background of underfunding, distorted policy goals, inefficient policies and lack of technical capacities in their implementation. As it has been revealed by the previous studies, satisfaction with health care services has a significant association with informal patient payments (Stepurko et al., 2016). We assume that relatively high positive assessment of health care services can be attributed to the coping strategies applied by Ukrainian health care users. Also, low expectations can lead to higher rank of assessment given to the attributes of health care service provision.

Moreover, there is a great lack of information about health care users' needs and expectations in Ukraine. That is why the studies employing health care users' opinion, perspective are important both for the facility which work is assessed and for the healthcare governance in general. Health care users' assessment of service quality adds lacking dimension for analysis and further decisions connected with fulfilment of the requirements (expectations).

Nevertheless, our study does not go without limitations. First, a recall bias can bring inaccuracies in identifying out- and in-patient service users as we rely on the respondents' memory and do not have instruments to check whether they really had experience of the service consumption. Still, one year recall bias is considered reasonable for health care service usage. Second, social desirability bias may influence the results, however this is more relevant for reporting weight, physical activities, and to a lesser extent may refer to the service consumption – giving more positive results. Third, typical for cross-sectional study limitations are lack of understanding of causal-effect associations. Despite mentioned limitations and limitations linked to the vagueness of «perceived quality» concept, the study presents unique for the country analysis of the data.

Conclusions. Overall, the study provides interesting results that the majority of health care users assess positively quality-related and negatively access-related attributes of health care services which are lacking adequate organizational approaches and are chronically underfunded. We conclude that inefficient allocative efficiency and lack of funds impacted on the provision of pharmaceuticals and accessibility of the services, while self-coping strategies of physicians and health care users (also seen in informal patient payments) allowed maintain good service wrapping and perceived quality. Further cross-sectional studies on perceived quality are necessary to monitor progress in health care service provision, and especially its quality and access attributes.

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APPENDIX A. Wording of the questions applied in the analysis

1. Out-patient care

1.1. Now we talk about ambulatory medical care. Please do not include here ambulance call, dental services, medical or professional checkups, refer for health certificate or sick leave, refer to homeopaths, healers, who are not physicians, passing only through diagnostic procedures or analyses, as well as assistance provided to your child or another family member. Asking about ambulatory care, we do not mean going through series of the procedures, day patient facility and so on. So, how many times did you use ambulatory medical assistance during the past 12 months? [times]

1.2. How do you asses following aspects of out-patient medical assistance? (Card A). [Very good –Good – Normal – Bad –Very bad]

Card A

Treatment effectiveness

Doctor's politeness during communication with patients and their families

Understandable doctors explanations for patients

How territorially convenient is a medical facility where your doctor works

Conditions where medical assistance is provided (for instance, cleanness of the building considering rest rooms)

Schedule of work

Possibility to receive diagnostic examinations, laboratory tests and treatment procedures free of charge

Understandable and transparent payment policy for medical assistance

Providing medical personnel with hygiene of examination and procedures, for example when in front of you they put on gloves or wash hands

1.3. Now look at card A. Here are listed all aspects that I have just read to you. Please, say, which of these are more important for you. You can choose up to three.

1.4. In general, how do you assess the outpatient medical care?

2. In-patient care

2.1. How many times you were hospitalized during the last 12 months with exception of one day in-patient care, hospitalization with a child, but including hospitalization related to pregnancy or delivery? [times]

2.2. How do you asses following aspects of in-patient medical assistance? (Card B). [Very good – Good – Normal – Bad –Very bad]

Card B

Time of admission spent in admission room, including time after the ambulance brought you in

Welfare conditions (including hygiene) under which medical help was provided

Quality of food

Accessibility of diagnostic and laboratory tests

Pharmaceuticals provision

Doctors' qualification

Doctors' good will

Nurses' good will

Treatment effectiveness

Understandable and transparent payment policy for help (including absence of informal payments)

2.3. Now look at card B. Here are listed all aspects that I have just read to you. Please, say, which of these are more important for you. You can choose up to three.

2.4. In general, how do you assess the inpatient medical care that you consumed?

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