

Kakovost oskrbe v odnosu na oceno kakovosti vodenja kronične bolezni bolnikov s koronarno boleznijo

Correlation of Coronary Heart Disease Patient Assessments of Chronic Illness Care and Quality of Care Procedures

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Izvleček

Namen: Bolnikova ocena vodenja kronične bolezni vse bolj nadomešča ocenjevanje zadovoljstva, ki kot kaže, ne odraža vseh dimenzij oskrbe. Bolnikov pogled na vodenje kronične bolezni reflektira kakovost oskrbe in ponuja zdravstvenim delavcem povratne informacije o njihovem delu. Namen te študije je bil raziskati bolnikovo oceno kakovosti oskrbe koronarne bolezni in njeno povezavo z zagotovljeno nego.

Metode: Raziskava je bila opazovano presečna, Podatke smo pridobili iz kartotek bolnikov in s pomočjo obsežnega vprašalnika za bolnike, ki je med drugim vključeval vprašalnik PACIC (Patient Assessment of Chronic Illness Care). Za prepoznanje števila in vrste sklopov vprašalniku je bila izvedena faktorska

Abstract

Purpose: Patient-centered assessment of chronic illness care is replacing the assessment of satisfaction, which does not cover all dimensions of care. Patient assessments reflect both the quality of chronic illness care and provide feedback to healthcare workers about their work. The study aim was to investigate the patient-centered assessment of coronary heart disease (CHD) patients and its correlation with the care that was delivered.

Methods: This cross-sectional study evaluated data obtained from the patient medical records and surveyed patients using the Patient Assessment of Chronic Illness Care (PACIC) questionnaire. A descriptive analysis of the overall and domain-specific responses to the PACIC questionnaire was conducted and the association of the re-

analiza. ter deskriptivna analiza vprašalnika PACIC. Za ugotavljanje korelacije med bolnikovo oceno vodenja kronične bolezni in kakovostjo vodenja je bil uporabljen Pearsonov korelacijski koeficient.

Rezultati: V raziskavo je bilo vključenih 768 bolnikov s koronarno boleznijo (stopnja odziva 71,1%) iz 36 ambulant družinske medicine. Povprečna starost udeležencev je bila 68,0 (SD=10,8) let. Povprečna ocena za celoten PACIC (rang točkovanja 1-5) je znašala 3,3 (SD= 0,9). Najvišje ocenjeni so bili organizacijski aspekti ambulant: organizacija ambulante (3,7), vključevanje bolnikov (3,7) ter reševanju težav (3,6), najnižje pa spremljanje bolnika (2,8). Pearsonov korelacijski koeficient je znašal 0,10 ($p=0,009$).

Zaključek: Bolniki s koronarno boleznijo srca so visoko ocenili vse vidike kronične oskrbe, predstavljene v vprašalniku PACIC; Najmanj so bili zadovoljni s spremljanjem in usklajevanjem kronične oskrbe. Kakovost klinične oskrbe izražena s kazalniki oskrbe, je pozitivno korelirala z bolnikovo oceno bolnikov oskrbe

sults with delivery of care data in the patient records was determined by Pearson's correlation coefficient.

Results: The study sample included 768 of 1080 CHD patients (71,1%) at 36 family medicine practices who completed the PACIC questionnaire. The mean age of the respondents was 68.3 ± 10.7 years and the overall PACIC score was 3.3 ± 0.9 . The highest PACIC scores were delivery system design (3.7), patient activation (3.7), and problem solving (3.6). Follow-up received the lowest score (2.8). Quality of delivered care and PACIC scores were correlated ($r = 0.10$, $p = 0.009$).

Conclusions: CHD patients highly rated all aspects of chronic care included in the PACIC questionnaire. They were least satisfied with the follow-up and coordination aspects of chronic care. The process indicators of care were positively correlate with patient assessment of care.

INTRODUCTION

Coronary heart disease (CHD) has been the leading cause of morbidity and mortality in Europe and the USA for decades. The incidence is increasing in developing countries (1-3) and in young people during their most productive years. If that trend continues, CHD will ultimately become pandemic (4). Despite the successful treatment of acute coronary events, the long-term causes of atherosclerosis (5) persist and require ongoing management. Patients are at risk of recurrence or another form of atherosclerotic disease following an acute event. In the 10 years following an acute coronary event, patients have an estimated absolute risk of myocardial infarction of 40% or more (6). Long-term secondary prevention and rehabilitation measures are necessary, and they significantly improve the quality of routine clinical care, survival, and quality of life.

The chronic care model (CCM) is framework for pro-

viding quality care of patients with CHD and other chronic diseases and is designed to adapt to demographic changes; an increasing number of nontransmissible chronic diseases that increase morbidity and mortality, medical advances, and an increasing patient understanding of their disease and their preparedness to participate in its management. The CCM is a population-based, proactive, planned approach to the care of the chronically ill. Patient care that follows the CCM principles is expected to improve the quality of patient management, patient assessment of care, and patient cooperation and self-care (7-10).

The attributes of quality are multidimensional and include patient assessment as well as an assessment of the quality of care (QoC) by healthcare providers. Patient empowerment and involvement are imperative for achieving positive treatment outcomes. By itself, patient satisfaction with delivered healthcare

often does not adequately reflect all aspects of QoC, such as the quality of the work of healthcare providers and workers and their practice characteristics (11, 12). Objective values of classic predictors of risk that represent patient care procedures and outcomes in line with treatment guidelines and recommendations are important, but focus on the disease only and are not patient centered. Recent family medicine policies emphasize sharing care decisions with the patient, stressing the needs and wishes of the user, the capacity for self-care, and patient quality of life (13). QoC assessments made to assess the management of chronic disease must focus not only on the process but also on patient-oriented assessments that reflect their insights and experiences. The patient view of chronic illness care is an important component of instruments designed to assess the overall quality of the patient-centered care (14). This study investigated the correlation of patient assessment and comprehensive assessment of the quality of chronic illness care.

PATIENTS, MATERIALS, AND METHODS

Study aim and hypothesis

This cross-sectional study was part of the European Practice Assessment of Cardiovascular risk management (EPA Cardio) project, an international survey of CHD patient attitudes toward chronic illness care using the Patient Assessment of Chronic Illness Care (PACIC) questionnaire. The quality of CHD patient care based on medical records was compared with the patient PACIC assessments in a sample of CHD patients. The hypothesis was that the patient assessments of chronic illness care would be positively correlated with the objective clinical indicators of quality of patient care.

Patient Sample

The study included a convenience sample of 36 randomly selected family medicine practices stratified by healthcare unit size and rural or urban location and intended to accurately represent the characteristics of Slovenian family medicine practice. In each of the selected practices, a total of 15 to 30 CHD patients

with myocardial infarction, angina pectoris, and myocardial revascularization procedures were invited by their physicians to participate in the study. They were selected from a register of CHD patients available to every family medicine practice. To ensure group homogeneity, diabetes patients were excluded. Patients with a terminal disease, cognitive impairment, and those who did not understand the Slovenian language well enough to complete the study were also excluded. Participation was voluntary, informed consent was obtained, and anonymity of the data was guaranteed. Of the target sample of 1,080 included patients, 768 (71.1%) correctly completed the questionnaires.

Instruments

The instruments used in this EPA Cardio study to assess the quality of CHD patient care included a form to collect data from patient medical records, a patient questionnaire, and a large set of forms to assess the family practice organization. The medical record data included in the analysis in addition to the PACIC questionnaire were primarily related to lifestyle counselling and clinical procedures. The PACIC questionnaire is widely used to survey patient-centered chronic illness care (15). It was designed to supplement the Assessment of Chronic Illness Care (ACIC), which is used by physicians and medical teams to assessing the extent of inclusion of the elements of chronic illness care provided by physicians and teams to their patients (16). PACIC collects data focusing on patient-centered provision of care and on the capacity of self-care (17) and serves as a tool to assess patient-centered chronic illness care as well as a tool to measuring quality. The PACIC questionnaire is a multidimensional, patient centered, cognitively complex questionnaire consisting of five subscales comprising a total of 20 questions to assessing the patient view of chronic illness care, in this case CHD care (15,18). The subscales address patient activation, delivery system design, goal setting, problem solving and follow-up. The study participants answered questions about the delivery of CHD care in the previous 6 months. If more than 6 months had passed since their last visit, they described the last visit. The responses were scored by

the level of agreement on a five-point Likert scale ranging from “almost never” to “almost always”. PACIC was validated in Slovenia in 2014 (14).

Quality of CHD patient care

The QoC for patients with CHD was represented by a composite variable including five patient care quality process indicators obtained from their medical records: advice on regular physical activity; diet advice; statin treatment; antiplatelet therapy, and advice on influenza vaccination. The entries were summed to give values ranging from 0 to 5, representing the implementation of recommended CHD patient care processes.

Statistical analysis

The values of categorical variables were reported as numbers and percentages. Continuous variables were reported as means \pm standard deviation. The variables used to evaluate patient care process quality were merged to report the number of points collected in individual measurements or mean values. To confirm the study hypothesis, bivariate correlation analysis was performed by calculating Pearson product-moment correlation coefficients. Statistical analysis was performed using IBM SPSS 21.0 software (IBM Corp., Armonk, NY). Statistical significance was set at $p < 0.05$.

Compliance with ethical guidelines

Conflict of Interest

The authors Ksenija Tušek-Bunc, Marija Petek-Šter and Davorina Petek declare that they have no competing interests.

Ethical Standards

All procedures involving human participants followed the ethical guidelines of the institutional and/or national research committee and the most recent amendments of the Helsinki Declaration of 1964 or comparable ethical standards. Informed consent was obtained from all the participants included in the study. The study was approved by the Republic of Slovenia National Medical Ethics Committee at the Ministry of Health of the Republic of Slovenia in January 2011, Ref. no. 87/01/11.

RESULTS

A total of 768 of the 1,080 eligible patients (71.1%) completed the survey; 272 (35,4%) were women and 496 (64,6%) were men with a mean age of 68.3 ± 10.7 years of age. The survey responses are shown in Table 1.

The mean PACIC score was 3.3 ± 0.9 for all 20 questions; the mean subscale scores ranged from 2.8 ± 1.1 (follow-up) to 3.7 ± 1.0 (patient activation and delivery system design) (Table 2).

CHD patient care process complex variable

The frequencies of answers in response the CHD patient care process questions were used to construct a CHD patient care process composite variable. In the previous 15 months, influenza vaccination was the least frequent event reported in the medical records by family medicine physicians. Antiplatelet therapy and statin treatment were the most frequently reported. Receiving advice on regular physical activity and diet were reported in more than half the cases (Table 3). Each individual response was given a score of 1; 5 points was the maximum score for the CHD patient care process. The mean score for all participants was 3.2 ± 1.0 points.

Table 3 CHD Patient care process scores for procedures recorded in medical records in the previous 15 months.

Results of the correlation analysis are shown in Table 4. There were statistically significant correlations of the quality care process and the PACIC questionnaire scores, but the correlations were weak ($0.01 < r < 0.15$).

DISCUSSION

CHD patients gave high ratings to the delivery of chronic care at their family medicine practices. Correlations were found with some aspects of QoC. The PACIC is increasingly used to assess satisfaction with medical care as it reflects additional dimensions of care. The patient view of chronic illness care provides a detailed reflection of QoC, includes support provid-

Table 1. Descriptive analysis of responses to the PACIC questionnaire subscale questions.

Subscale	Questions	Min. (%)	Max. (%)	MV (SD)
Patient Activation	Asked for my ideas when we made a treatment plan.	7.3	24.0	3.6 (1.2)
	Given choices about treatment to think about.	8.9	27.7	3.5 (1.3)
	Asked to talk about any problems with my medicines or their effects.	4.4	45.5	4.1 (1.1)
Delivery System Design/ Decision Support	Given a written list of things I should do to improve my health.	15.2	26.4	3.3 (1.4)
	Satisfied that my care was well organized.	1.4	41.5	4.2 (0.9)
	Shown how what I did to take care of myself influenced my condition.	7.9	28.6	3.6 (1.2)
Goal Setting	Asked to talk about my goals in caring for my condition.	10.7	22.2	3.3 (1.3)
	Helped to set specific goals to improve my eating or exercise.	5.4	33.5	3.8 (1.2)
	Given a copy of my treatment plan.	22.2	21.7	2.9 (1.5)
	Encouraged to go to a specific group or class to help me cope with my chronic condition.	30.3	14.5	2.5 (1.4)
	Asked questions, either directly or on a survey, about my health habits.	13.9	20.8	3.1 (1.3)
Problem-solving/ Contextual Counselling	Sure that my doctor or nurse thought about my values, beliefs, and traditions when they recommended treatments to me.	4.6	39.1	4.0 (1.1)
	Helped to make a treatment plan that I could carry out in my daily life.	10.2	31.5	3.6 (1.3)
	Helped to plan ahead so I could take care of my condition even in hard times.	11.0	25.4	3.4 (1.3)
	Asked how my chronic condition affects my life.	10.9	27.2	3.5 (1.3)
Follow-up/ Coordination	Contacted after a visit to see how things were going.	23.8	17.0	2.7 (1.4)
	Encouraged to attend programs in the community that could help me.	30.8	10.2	2.4 (1.3)
	Referred to a dietician, health educator, or counsellor.	36.8	12.7	2.3 (1.4)
	Told how my visits with other types of doctors, like an eye doctor or other specialist, helped my treatment.	18.7	22.1	3.2 (1.4)
	Asked how my visits with other doctors were going.	15.0	29.9	3.5 (1.4)

MV: mean value, SD: standard deviation

Minimum proportion of answers with the lowest score – floor effect

Maximum proportion of answers with the highest score – ceiling effect

Table 2: Summary analysis of PACIC subscale scores (range 1–5 points).

PACIC	MV	SD
Patient Activation	3.7	1.0
Delivery System Design/ Decision Support	3.7	1.0
Goal Setting	3.1	1.0
Problem-solving/ Contextual Counselling	3.6	1.1
Follow-up/ Coordination	2.8	1.1
Total PACIC	3.3	0.9

MV: mean value, SD: standard deviation

Table 3: CHD Patient care process scores for procedures recorded in medical records in the previous 15 months.

Registered entry	n	%
Advice on regular physical activity	412	54.6
Diet advice	433	56.4
Treatment with statins	650	84.6
Treatment with antiplatelet therapy (aspirin, clopidogrel, other suitable therapy unless contraindicated)	718	93.5
Advice on influenza vaccination	250	32.6

Table 4: Correlation of PACIC subscale and CHD patient care process scores.

PACIC	r*	p
Total	0.10	0.009
Patient Activation	0.05	0.242
Delivery System Design/ Coordination	0.10	0.028
Goal Setting	0.15	<0.001
Problem-solving/ Contextual	0.10	0.011
Follow-up/ Coordination	0.13	0.001

* Pearson's correlation coefficient

ed by self-care, and provides feedback to healthcare workers (19). The PACIC questionnaire includes 20 questions about the quality of medical treatment provided to patients by medical staff in the previous 6 months. The CCM (20) was used as the theoretical basis of the questionnaire. The mean score of all 20 questions on a scale of 1–5 was 3.3 ± 0.9 , which was higher than the mean total score observed in other countries participating in the EPA Cardio project (2.84 ± 0.03) (21). The mean score in this study was higher than those of CVD patients in the Netherlands, chronic illness patients in Great Britain, and osteoarthritis patients in Germany (22–24) and comparable to scores of patients with diabetes in the Netherlands and Spain, and those with mental disorders in Germany (19–27). There were significant differences in the scores of individual questions and subscales. The patients participating in this study gave the highest scores to delivery system design (3.7), patient activation (3.7) and problem solving (3.6), i.e., organizational aspects of care. The lowest score was given to follow-up (2.8), which is consistent with the findings in other countries participating in the EPA Cardio project (22). The proportions of answers receiving the highest and lowest scores, i.e., floor and ceiling effects, were to those reported by patients in Danish and Dutch studies (26–28).

Statistically significant correlations of the quality of CHD clinical care process score were observed with the total PACIC questionnaire scores as well as some individual subscales ($r = 0.10$). Lack of correlation with the patient activation subscale ($r = 0.05$) was unexpected because that subscale received the highest patient score (3.7). The clinical care process score was correlated with the follow-up subscale ($r = 0.13$), which received the lowest PACIC score (2.8). The PACIC involves individual psychological factors and personal characteristics that are difficult to measure and no standardized protocol for measuring QoC is available. Each method has its own strengths and weaknesses. Ideally, it would be desirable that a patient's evaluation of their medical care experience is consistent with their QoC assessment, as that would ensure feedback to healthcare providers.

Some previous studies reported a lack of correlation of objective quality assessments and patient satisfaction

(29). Campbell et al. proposed that patients might assess individual care and recommended care strategies differently (30). Patients assessments may also more strongly influenced by humanistic and emotional elements such as staff friendliness than by factors related to practice organization and management (31). Patient assessments are also affected by their personal attitude toward the healthcare team, trust, loyalty, and positive energy (28). In addition, some elements of structured care may be beyond patient comprehension of the risks and benefits of care (19,32,33).

LIMITATIONS

This study has some important limitations. QoC has several aspects, the most clinically important of which are the care procedures and outcomes. Only correlations of the indicators of the quality of care procedures and PACIC scores were investigated because the perception of the procedures predominantly depend on physician performance, whereas care outcomes are affected to a greater extent by patient adherence and cooperation.

CONCLUSION

The CCM includes PACIC as an important component of QoC. It should always be used for assessing QoC and in efforts to improve care. As studies investigating the association of a comprehensive set of factors, quality of CHD patient care, and patient views, are rare, positive correlations of patient assessments and QoC can be considered as an indicator of quality CHD care. Further study is required to identify individual elements of an assessment instrument that reliably provide an accurate patient assessment of the procedures utilized in chronic illness care.

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REFERENCES

1. Nichols M, Townsend N, Scarborough P, Rayner M. European Cardiovascular Disease Statistics: 2012 edition. European Heart Network and European Society of Cardiology. 2012
2. Daviglius ML, Lloyd-Jones DM, Pirzada A. Preventing cardiovascular disease in the 21st century: therapeutic and preventive implication of current evidence. *Am J Cardiovasc Drugs*. 2006;6(2):87-101.
3. Weisfeldt ML, Zieman SJ. Advances in the prevention and treatment of cardiovascular disease. *Health Aff (Millwood)*. 2007;26(1):25-37.
4. Fras Z, Jug B. Smernice za preprečevanje bolezni srca in žilja v klinični praksi 2013 - ključna sporočila in novosti. *Slov Kardiol*. 2013;10:53-88.
5. Šantl Letonja M, Letonja M, Nikolajević Starčević J, Petrovič D. Ultrasonographic and classical risk factors of carotid atherosclerosis in patients with type-2 diabetes mellitus. *Acta Medico-Biotechnica*. 2013; 6 (1): 33-44.
6. New Zealand Guideline Group: Best practice evidence based guidelines: Cardiac rehabilitation. Auckland. NZGG; 2002.
7. Nutting PA, Dickinson WP, Dickinson LM, Nelson CC, King DK, Crabtree BF et al. Use of

- chronic care model elements is associated with higher-quality care for diabetes. *Ann Fam Med*. 2007;5(1):14-20.
8. Szecsenyi J, Rosemann T, Joos S, Peters-Klimm F, Miksch A. German diabetes disease management programs are appropriate for restructuring care according to the chronic care model: an evaluation with the patient assessment of chronic illness care instrument. *Diabetes Care*. 2008;31(6):1150-4. doi: 10.2337/dc07-2104.
 9. Schmittziel J, Mosen DM, Glasgow RE, Hibbard J, Remmers C, Bellows J. Patient Assessment of Chronic Illness Care (PACIC) and improved patient-centered outcomes for chronic conditions. *J Gen Intern Med*. 2008;23(1):77-80.
 10. Boyd CM, Reider I, Frey K, Scharfstein D, Leff B, Wolff JL et al. The effects of guided care on the perceived quality of health care for multi-morbid older persons: 18-month outcomes from a cluster-randomized controlled trial. *J Gen Intern Med*. 2010;25(3):235-42. doi: 10.1007/s11606-009-1192-5.
 11. Wensing M, Vedsted P, Kersnik J, Peersman W, Klingenberg A, Hearnshaw H et al. Patient satisfaction with availability of general practice: an international comparison. *Int J Qual Health Care*. 2002;14(2):111-8.
 12. Salisbury C, Wallace M, Montgomery AA. Patients' experience and satisfaction in primary care: secondary analysis using multilevel modelling. *BMJ*. 2010;341:c5004. doi: 10.1136/bmj.c5004
 13. Petek D. Model ocenjevanja kakovosti izvajanja primarne preventivne srčno-žilnih bolezni v družinski medicini (PhD thesis). Ljubljana: Medicinska fakulteta; 2010.
 14. Tušek-Bunc K, Petek-Šter M, Šter B, Petek D, Kersnik J. Validation of the Slovenian version of patient assessment of chronic illness care (PACIC) in patient with coronary heart disease. *Coll Antropol*. 2014;38(2):437-44.
 15. Gugiu C, Coryn CL, Applegate B. Structure and measurement properties of the Patient Assessment of Chronic Illness Care instrument. *J Eval Clin Pract*. 2010; 16(3):509-16. doi: 10.1111/j.1365-2753.2009.01151.x.
 16. Bonomi AE, Wagner EH, Glasgow RE, VonKorff M. Assessment of chronic illness care (ACIC): a practical tool for quality improvement. *Health Serv Res*. 2001; 37(3): 791-820.
 17. Schmittziel J, Mosen DM, Glasgow RE, Hibbard J, Remmers C, Bellows J. Patient Assessment of Chronic Illness Care (PACIC) and improved patient-centered outcomes for chronic conditions. *J Gen Intern Med*. 2008; 23(1): 77-80.
 18. Glasgow RE, Wagner EH, Schaefer J, Mahoney LD, Reid RJ, Greene SM. Development and validation of the Patient Assessment of Chronic Illness Care (PACIC). *Med Care*. 2005; 43(5): 436-44.
 19. Elwyn G, Buetow S, Hibbard J, Wensing M. Respecting the subjective: quality measurement from the patient's perspective. *BMJ*. 2007;335(7628):1021-2.
 20. Bodenheimer T, Wagner EH, Grumbach K. Improving primary care for patient with chronic illness. *JAMA*. 2002;288(14):1775-9.
 21. Ludt S, van Lieshout J, Campbell SM, Rochon J, Ose D, Freund T et al. Identifying factors associated with experiences of coronary heart disease patients receiving structured chronic care and counselling in European primary care. *BMC Health Serv Res*. 2012;12:221. doi: 10.1186/1472-6963-12-221.
 22. Rosemann T, Laux G, Szecsenyi J, Grol R. The Chronic Care Model: congruency and predictors among primary care patients with osteoarthritis. *Qual Saf Health Care*. 2008;17(6):4426. doi: 10.1136/qshc.2007.022822.
 23. Rick J, Rowe K, Hann M, Sibbald B, Reeves D, Roland M et al. Psychometric properties of the Patient Assessment Of Chronic Illness Care measure: acceptability, reliability and validity in United Kingdom patients with long-term conditions. *BMC Health Serv Res*. 2012;12:293. doi: 10.1186/1472-6963-12-293.
 24. Cramm JM, Nieboer AP. High-quality chronic care delivery improves experiences of chronically ill patients receiving care. *Int J Qual Health Care*. 2013;25(6):689-95. doi: 10.1093/intqhc/mzt065. Epub 2013 Oct 11.
 25. Aragones A, Schaefer EW, Stevens D, Goure-

- vitch MN, Glasgow RE, Shah NR. Validation of the Spanish translation of the Patient Assessment of Chronic Illness Care (PACIC) survey. *Prev Chronic Dis.* 2008;5(4):A113.
26. Wensing M, Van Lieshout J, Jung HP, Hermsen J, Rosemann T. The Patients Assessment Chronic Illness Care (PACIC) questionnaire in The Netherlands: a validation study in rural general practice. *BMC Health Serv Res.* 2008;8:182.
 27. Gensichen J, Serras A, Paulitsch MA, Rosemann T, Koenig J, Gerlach FM et al. The Patient Assessment of Chronic Illness Care Questionnaire: evaluation in patients with mental disorders in primary care. *Community Ment Health J.* 2011;47(4):447-53. doi: 10.1007/s10597-010-9340-2.
 28. Maindal HT, Sokolowski I, Vedsted P. Adaptation, data quality and confirmatory factor analysis of the Danish version of the PACIC questionnaire. *Eur J Public Health.* 2012;22(1):31-6. doi: 10.1093/eurpub/ckq188.
 29. Wensing M, Baker R, Szecsenyi J, Grol R. Impact of national health care systems on patient evaluations of general practice in Europe. *Health Policy.* 2004;68(3):353-7.
 30. Campbell SM, Hann M, Hacker J, Burns C, Oliver D, Thapar A et al. Identifying predictors of high quality care in English general practise: observational study. *BMJ.* 2001;323(7316):784-7.
 31. Greenhalgh T, Heath I. Measuring quality in the therapeutic relationship - part 1: objective approaches. *Qual Saf Health Care.* 2010;19(6):475-8. doi: 10.1136/qshc.2010.043364.
 32. Chapple A, Campbell S, Rogers A, Roland M. Users' understanding of medical knowledge in general practice. *Soc Sci Med.* 2002;54(8):1215-24.
 33. Evans RG, Edwards A, Evans S, Elwyn B, Elwyn G. Assessing the practising physician using patient surveys: a systematic review of instruments and feedback methods. *Fam Pract.* 2007;24(2):117-27.