Makivić I, Kersnik J, Klemenc-Ketiš Z. The role of the psychosocial dimension in the improvement of quality of care: a systematic review.
Zdrav Var 2016; 55(2): 142-151.

THE ROLE OF THE PSYCHOSOCIAL DIMENSION IN THE IMPROVEMENT OF QUALITY OF CARE: A SYSTEMATIC REVIEW

VLOGA PSIHOSOCIALNE DIMENZIJE V IZBOLJŠEVANJU KAKOVOSTI OBRAVNAVE BOLNIKA: SISTEMATIČNI PREGLED LITERATURE

Irena MAKIVIĆ[1*], † Janko KERSNIK[1], Zalika KLEMENC-KETIŠ[2]

[1]University of Ljubljana, Faculty of Medicine, Department of Family Medicine,
Poljanski nasip 58, 1000 Ljubljana, Slovenia
[2]University of Maribor, Faculty of Medicine, Department of Family Medicine, Taborska ul. 8, 2000 Maribor, Slovenia

Received: Feb 23, 2015
Accepted: Jul 02, 2015

Review article

ABSTRACT

The aim of our systematic review was to analyse the published literature on the psychosocial dimension of care in family medicine and its relationship with quality of care. We wanted to find out whether there is any evidence on the psychosocial approach in (family) medicine. The recommended bio-psycho-social approach, besides the biomedical model of illness, takes into account several co-influencing psychological, sociological and existential factors. An online search of nine different databases used Boolean operators and the following selection criteria: the paper contained information on the holistic approach, quality indicators, family medicine, patient-centred care and/or the bio-psycho-social model of treatment. We retrieved 743 papers, of which 36 fulfilled our inclusion criteria. Including the psychosocial dimension in patient management has been found to be useful in the prevention and treatment of physical and psychiatric illness, resulting in improved social functioning and patient satisfaction, reduced health care disparities, and reduced annual medical care charges. The themes of patient-centred, behavioural or psychosocial medicine were quite well presented in several papers. We could not find any conclusive evidence of the impact of a holistic bio-psycho-social-approach. Weak and variable definitions of psychosocial dimensions, a low number of well-designed intervention studies, and low numbers of included patients limited our conclusions.

Keywords:
general practice, social problems, psychosocial care, quality of health care, reviews

IZVLEČEK

Priporočen biopsihosocialni pristop poleg biomedicinskega modela bolezni upošteva številne psihološke, socialne in eksistenčne dejavnike. Želeli smo izvedeti, ali v družinski medicini obstajajo dokazi o psihosocialnem pristopu. Cilj našega sistematičnega pregleda je bil analizirati objavljeno literaturo s področja psihosocialne dimenzije dela zdravnika družinske medicine in njegovo povezavo s kakovostjo obravnave bolnikov. Spletno iskanje je potekalo v devetih bazah s pomočjo Boolovih operatorjev in vključenimi kriteriji iskanja, kot so, da članek vsebuje nekaj o celostni medicini, kazalnikih kakovosti, družinski medicini, modelu, usmerjenem na pacienta, ali/in biopsihosocialnem modelu obravnave. Vključeni so bili tudi članki, povezani z družinsko medicino, ki so poročali o meritvah kazalnikov kakovosti. Iskanje je ponudilo 743 zadetkov, od teh je 36 člankov izpolnilo kriterije za vključitev v analizo. Psihosocialna obravnava se je izkazala za uporabno pri preventivi ter pri obravnavi telesnih in psihiatričnih bolezni. Rezultati takšne obravnave so izboljšano socialno funkcioniranje, večje zadovoljstvo pacientov, zmanjšane razlike pri zdravstveni oskrbi in nižji letni stroški zdravljenja. Teme, kot sta osredotočenost na pacienta in psihosocialna medicina, so v člankih kar dobro zastopane. Ni pa bilo možno najti nobenih virov o vplivu celostnega biopsihosocialnega pristopa. Nepopolna in različna definicija psihosocialne dimenzije, majhno število dobro osnovanih intervencijskih raziskav na tem področju in majhno število vključenih pacientov so omejitve, ki so vplivale na sklepe te raziskave.

Ključne besede:
splošna medicina, socialne težave, psihosocialna obravnava, kakovost zdravstvene oskrbe, pregled literature

***Corresponding author:** Tel: +386 40 66 88 27; E-mail: irena.makivic@mf.uni-lj.si

1 INTRODUCTION

The majority of modern healthcare is based on a biomedical model of illness, which allows the identification and treatment of a very large number of diseases, fails to recognise the multi-factorial and complex nature of many (including non-organic) illnesses (1). A biomedical approach considers only the easily measurable biological aspects of the patient's body during the illness episode – the patient's feelings and ability to function are outside the responsibility of the health care (2). From a biomedical perspective, the patient is just a passive recipient of the doctor's instructions, and treatment is focused on the repair of malfunctions in the patient's body. For many diseases, this approach is not sufficient (3). The psychosocial dimension takes into account various different factors which influence health, health care, and health care outcomes (4). This results in differences in disease prevalence, health outcomes, and access to health care based on the characteristics of the population (5). Keeping psychosocial problems hidden in the consulting room can lead to the medicalization of normal life events and trigger unwarranted illness behaviour in patients (6). A combination of bio-psycho-social approachesaddresses the complexity of the presentation of illness in modern family practice(7). A view of the human body that goes beyond the reductionist tendencies of naturalistic and social constructionist perspectives sees the body as an unfinished, biological and social phenomenon (8).

Quality of care encompasses patients (the adequate identification of vulnerable/eligible patients), doctors, and resources (9). There have been different definitions of quality, but the most recent one (from 2001) defines six criteria: patient-centred, safe, effective, timely, efficient and equitable (10). The use of evidence-based measures (indicators) has been suggested as a part of the process of quality improvement (11). Quality of health care may be reflected in (health-related) quality of life. Illness, disease and their treatments can have significant impact on mobility, mood, life satisfaction and social roles. Health-related quality of life also encompasses the patient's general well-being and satisfaction with treatment, as well as education, housing, income and the context of cultural and value systems (12). According to a definition by the World Health Organisation, health as a social phenomenon is a state of physical, mental and social well-being, and not merely the absence of disease or infirmity (13).

Diseases can have somatic and psychological causes on the one hand, and physical and social/environmental influences on the other. Such a framework is required in order to capture diverse disease and health conditions and their intricate relationships (14). Health and happiness go together and both result in more productive and viable communities (15). The community, i.e. the social environment we live in, and its capacity for both harm and good, are integral to personal health (16). People's health may also depend on the size and quality of their social network. Further associations arise between education, work and social class, resulting in different healthcare outcome rates or even mortality rates (17). Social characteristics (gender, class, ethnicity, etc.) lead to different positions in working life (18). Changes in social and environmental conditions could do much to improve living conditions and the health status of the population (17).

Primary care is the entry point into the health care system for all patient's health problems and needs. The approach to the patient is personal, lasts for an appropriate length of time, is comprehensive, and includes the possible coordination or integration of other options or levels of health care (19). One of family medicine's definitions is that it sees health in a broader way, dealing with health problems from a psychological, social, cultural and existential perspective (20), as well as a medical one. The family physician is aware of a patient's social environment, which leads to more effective and humane care. This does not mean that comprehensive care means using a less scientific approach; on the contrary, it means being even more scientific and individually-oriented (21). Understanding and trust between the doctor and the patient must be achieved for quality health care (22). Primary care is oriented towards people and populations and not just towards pre-defined diseases or interventions (23). A comprehensive approach to family medicine is also defined by Wonca Europe as one of the six essential characteristics (knowledge and skills) of a family physician (24). A family physician's ability should be in using a bio-psycho-social approach while taking into account cultural and social dimensions (20). First contact with the health care system, i.e. with primary care, is extremely important. It has been shown that countries with a superior primary care infrastructure have better health outcomes (22). Strong and effective primary care leads to better health of the whole population (23, 25).

It is difficult to measure the quality of psychosocial health care, because the model does not lend itself to easy definition or measurement. The aim of our systematic review was to analyse the published literature on the psychosocial dimension of care in family medicine and its relationship with quality of care. We wanted to find out whether there is any evidence on the psychosocial approach in (family) medicine and its outcomes. This was the first time that the relationship between well-known quality indicators and the less clearly defined psychosocial model of health care was investigated.

2 METHODS

Online databases were used to search several key-words in October 2011. Different combinations of Boolean operators were included, such as: social medicine, psychosocial model, comprehensive health care, holistic health, holistic nursing, patient-centred care, health care, well-being, quality indicators, general practice/family practice/family medicine, and comparative effectiveness research. We also applied different search parameters: the paper was published in the last five years, concerned human beings, was written in English and had the search expressions in the title or abstract.

We carried out searches on: Pubmed, Google Scholar, EBSCOHost, JSTORE, the Cochrane Library, OVID MEDLINE, Embase, All EBM Reviews and PSYCInfo. While searching online with Boolean operators, the selection criteria were that the paper contained something on: holistic medicine, quality indicators, family medicine, patient-centred care or the bio-psycho-social model of treatment. We did not include papers which were not related to family medicine or did not measure quality indicators. We excluded articles about education, educational programs, palliative nursing or alternative medicine. The final selection criteria included papers concerning prevention methods, communication between doctor and patient, the holistic approach and holistic healing, chronic disease management and evidence-based medicine. From a total of 743 hits, 63 papers matched all the inclusion criteria. A detailed reading of these papers resulted in 36 final hits for the purpose of this review (see Figure 1).

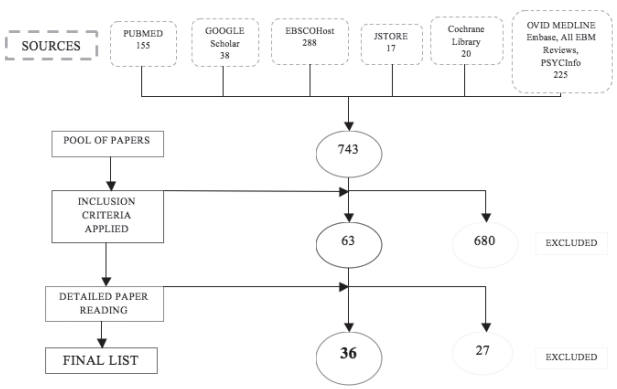

Figure 1. Flow diagram.

Those 36 hits were first classified according to study type, and then the findings were summarized according to the topic of the study, size of the sample, methods and main results (see Table 1). For the second evaluation, two independent researchers evaluated all the listed papers on a rating scale from 1 to 3, where 1 means that this study did not measure quality (directly or at all), 2 means that the measurement of quality was a secondary outcome, and 3 means that measure of quality was the primary aim of the study.

On PUBMED, there were 155 papers from various searches: social medicine AND quality indicators (6); quality indicators AND general practice AND comprehensive health care (27); social medicine AND family practice (47); comparative effectiveness research AND holistic nursing OR holistic health AND family medicine (15); patient centred care AND quality indicators, health care (56). We applied four search limits: the paper was published in the last five years, concerned human beings, was written in English and had the search expressions in the title or abstract.

On GOOGLE SCHOLAR (search expressions: holistic nursing OR holistic health OR quality indicators OR health care) we found 38 papers written from 2007 onwards with the key words in the title.

EBSCOHost gave us 288 papers (holistic nursing OR holistic health AND quality indicators AND Health care (147); patient centred care AND family medicine (141)) limited to publications in the last five years.

JSTORE gave us 17 papers (holistic nursing OR holistic health AND Quality indicators AND Health care (1); psychosocial model (16)) limited to the last five years and written in English.

In the Cochrane Library we found 20 systematic review papers (psychosocial model (17); quality of care AND family medicine (3)) with the search words in the abstract and written between 2007 and 2011.

From OVID MEDLINE, Embase, All EBM Reviews and PSYCInfo we got 225 papers with different search terms (patient-centred AND family medicine AND quality indicators (95); well-being AND family medicine AND quality indicators (69); psychosocial-model (61)) with the limits of publication in the last five years, written in English and about human beings.

3 RESULTS

There were ten randomised controlled and uncontrolled trials or cohorts (26-35), one meta-analysis (32), twelve cross-sectional studies (36-47), three case control studies (48-50), and ten qualitative study designs (focus groups (19, 51-53) and interviews (54-60)).

Thirty-six of the included papers were written from different perspectives. Some papers measured quality of health (care) (58), outcomes (38) or quality of life (59); others measured patient-centred care (35), or a holistic (19) or (bio)psychosocial approach (28); and some papers focused on preventive approaches in primary care: health promotion (30, 50), avoiding hospitalization (48, 33), prevention (34), or physical activity (26).

The main results, including sample size, applied methods and our rating of how much the paper measures the impact of the psychosocial dimensions on quality of care, and what exactly is measured, are presented in Table 1. For the purpose of the evaluation, the following scale was used – 1: the study measured only the psychosocial approach; 2: the study measured quality of care as a secondary outcome; 3: the study measured quality of care as the primary outcome. Here quality meant not just the quality of health care, but also quality of life and health as a whole (we included indirect measures, such as satisfaction, lower costs, etc. to show the quality of care). Altogether, there were 16 papers measuring both the psychosocial approach (or one aspect of it) and quality (health care or health outcomes, quality of life and outcomes that could affect quality – for instance, (higher) satisfaction could result in (higher) quality if we measured it afterwards). There were 19 papers that measured only the psychosocial field, without quality indicators. One paper measured only quality according to primary care or family medicine, but without a special field covering the psychosocial dimension. Only one paper really directly measured the quality of the psychosocial approach, and unfortunately this paper had too small a sample to draw firm conclusions.

Table 1. Findings.

Paper	Topic, study question	Sample size	Methods	Main results	Rating of the results[1]
(26)	Measuring the quality of motivation for physical activity from the health worker and whole professional team (pilot study)	N=424 (both sexes, over age 18, with a low level physical activity)	Systematic random sampling; intervention (professional health worker and team support physical activity) or control group	Motivational intervention by a physician and primary care team increased physical activity and improved social support	2
(27)	Differences in health care costs, doctor's visits, quality of well-being according to wellness intervention	N=33, N= 28 (23 finished the first and 15 the last study)	Intervention (1: relaxation and problem-solving practice; 2: psycho-educational and skill oriented: nutrition, relaxation, exercise, etc.) or control group; pre- and post- test values	Short wellness program in family medicine improved quality of life	3
(49)	Testing what influences adherence to medication	N=236 (mean 41 years, male majority, mostly African-Americans)	To test a model of medication adherence among individuals taking anti-retroviral medication	Taking of medication was affected by different psychosocial variables (self-efficacy, depression, and social support) and provided directions for adherence intervention	1
(28)	Measuring depression outcomes, satisfaction and functioning in women	N=123 (women with depression)	2 interventions (social intervention and anti-depressants) and control group (only antidepressants); tested after 3 and 9 months	Social treatment improved social functioning and satisfaction	3
(50)	Measuring the quality of promotion of physical activity	N= 38 patients (out of 55) over 65 years visiting a medical practice by appointment N=12 physicians for 2 focus groups	Activity counselling in primary care: written assessment and personal counselling evaluated by focus group with primary care physicians, second mailing to inactive patients, evaluated by questionnaire	Physical activity promotion must be included in multidimensional health promotion; promotion through primary care has high potential (healthy aging)	3

Paper	Topic, study question	Sample size	Methods	Main results	Rating of the results[1]
(29)	Measuring the association between health beliefs and negative health outcomes	Sample 1 N=202, Sample 2 N= 209	Prospective 2-panel design; psychosocial model of behaviours: social cognitive theory and theory of planned behaviour	Perceptions of the efficacy of treatment predicted outcomes of treatment and prevention	2
(30)	Measuring the influence of physical activity on drug prescribing in PC on physical activity levels, stages of change and quality of life	N=481 (both sexes, 12 to 81 years)	Uncontrolled clinical study; individualized physical activity on prescription (follow up at 6 months)	Increased self-reported physical activity level, stages of action and maintenance of physical activity; quality of life increased	3
(36)	Measuring satisfaction which can influence health care outcomes	N=702 patients (from 38 resident doctors)	Expectations before visit, measures after visit, telephone interview about fulfilled expectations	The fulfilment of patient expectations influenced satisfaction and consultation outcomes	2
(35)	Measuring how practice style influences outcomes	N=509 (adult patients)	Care by family physicians or general internist	More frequent patient-centred care offered by a family physician reduced annual medical care charges	1
(31)	Measuring clinical effectiveness of primary care model for diabetic patients	N=335 (experimental group N=185, control N=145)	Model of diabetes care provided by primary care service in comparison to care provided at specialist diabetes clinic	Model of diabetes care provided by primary care service combined patient focus and holistic care well	2
(32)	Effects of psychosocial intervention on substance reduction in people with mental illness	N=25 RCTs	Meta-analysis	No compelling evidence that supports any one psychosocial treatment over another was found	1
(37)	Impact of physical limitations on perceived quality of care	N=674 (adult family medicine patients)	Telephone survey of family patients	People with physical limitations experienced a disparity in perceived quality of care	3
(38)	Model with accessibility of services and professional-patient relationship, coordination within health care team and scientific-technical quality of the service	N=213 (primary health care teams)	Descriptive study	Identified model with three dimensions: inter-personal relationships (physician's information, attention to user's needs, time dedicated to the user, etc.), team organisation (support from colleagues, work feedback, etc.) and scientific-technical quality (quality of prescription standard, % anti-depressant medications, etc.)	2

Paper	Topic, study question	Sample size	Methods	Main results	Rating of the results[1]
(39)	Association between social factors and depression	N=122 (residents in family medicine and psychiatry)	Survey at intervals	Parenting was found to be a protective factor from burnout; women not as vulnerable as previously reported	1
(40)	Assessing patient-centred decision making, interpersonal style and communication	N=1664 (adult general medicine patients)	Telephone interview	Better interpersonal process of care may predict more favourable patient outcomes and present one of the efforts to reduce health care disparities in our patients	1
(41)	Influence of work and living conditions on health	N=5666	Cross-sectional study	The greater the financial distress and shame, the greater risk of psychosocial ill health	1
(42)	Nine quality indicators in 4 countries	N=4 (countries)	Data from health statistics agencies	Socioeconomic disparities in health care quality and health status were found	3
(43)	Patient-centred medical home and preventive services	N=24 (primary care settings)	Cross-sectional analysis	Patient-centred medical home highly correlated with preventive services delivery	2
(48)	Lowering hospitalizations in association with check-ups	N=660 (hospitalized patients)	Random sample	Regular health check-ups outside of the Family Health Strategy doubled the likelihood of hospitalization	1
(44)	Quality of life (health, independence, psychological and emotional well-being) affected by frailty status (reduced energy levels, depressive status, etc.)	N=239 (community dwelling outpatients aged 65+)	Cross-sectional survey	Quality of life was negatively affected by frailty status	3
(45)	Diabetes management and quality of life	N=400 (primary care patients with diabetes)	Cross-sectional survey	Diabetes-related complications, worse subjective health and dissatisfaction with medical care influenced worsening of QoL	3
(46)	Bio-psycho-social view associated with medical prescription	N=8430 (all general practices in England)	Ecological study	Socio-economic status, ethnic density, chronic disease explained 44% of the variance in the volume of antidepressants prescribed	1
(47)	Status of behavioural medicine in psychiatric and medical illness	N=9 (family medicine residency programs)	Survey	Behavioural medicine was found to be useful in the prevention and treatment of physical and psychiatric illness	1

Paper	Topic, study question	Sample size	Methods	Main results	Rating of the results[1]
(33)	Intervention (quality improvement program; patient-oriented medical model) led to reduction in hospitalization and more optimal allocation of healthcare resources	N=808 (elderly 65+ in single clinic)	Evaluation of intervention program for reduction in the hospitalization of elderly people	Allocation of resources in primary care brought about a decrease in hospitalization figures	1
(34)	Prevention and chronic disease management as main points in primary health care	N=30 (primary care practices)	Before and after study; intervention first 12 months; preventive care, and after this another 3-9 months, chronic illness management	Intervention (preventive manoeuvres according to Canadian Task Force on Preventive Health Care recommendations) was effective in producing improvements in preventive care performance also beyond the intervention period	1
(54)	Therapeutic model that has influence on quality of life	N=15 (gastroenterological patients)	Semi-structured interviews	The sample was too small for conclusions about the psychosocial treatment on quality of life of patients	3
(19)	Holistic work (stated as) especially important in preventive work and palliative care	N=7 (focus groups with 22 GPs and 30 DNs)	Focus groups	The possibility to use (w) holistic model in their work gave family physicians and district nurses a strong motivation; organisation of primary care was shown to be a barrier or facilitator	1
(51)	Quality of consultation composed of: family physicians' competence and their empathy/caring	N=11 (72 patients)	Focus groups with local community groups (n=8) and other local residents (n=3)	Patients from deprived areas expected a holistic family physician	3
(52)	Impact of evidence -based and patient- centred care on quality of care	N=5 (45 members)	Focus groups	Evidence-based and patient-centred care may influence the quality of care	1
(53)	Patients' perceptions of development of quality indicators for chronic disease	N=6 (focus groups for adults with epilepsy); N=15 (experts)	Focus groups; Delphi study; 10 patient-generated quality indicators; 5 rated by experts	Patients' perceptions of quality may be incorporated into future development of quality indicators for chronic disease	3
(55)	Model with influence on health outcomes	N=35 (married or previously married women with depressive disorder)	Qualitative investigation - interviews	Recommendation of using the psychosocial model for public health interventions and mental health promotion (in Indian context)	1

Paper	Topic, study question	Sample size	Methods	Main results	Rating of the results[1]
(56)	Bio-psychosocial model in chronic pain management strategy	N=25 (members of pain management teams)	Semi-structured interviews	Little impact of social factors in managing chronic pain, so the model may not achieve its full potential	1
(57)	Meeting patient needs to improve quality of care	N=13 (senior citizens, 65-91 years)	Semi-structured interviews	For older people with growing health problems, continuity of care, trust, free choice of family physician and an open attitude are highly valued	3
(58)	Effect of interpersonal process quality of medical consultations	N=21 (adult patients from 3 primary care clinics)	Semi-structured interviews	Patients with lower socio-economic status are least likely to expect holistic care or empowerment, judging the quality of the treatment outcomes according to human skills and attitudes (empathic and engaged family physicians) and perceived outcomes of treatment	2
(59)	Importance of holistic approach to treatment and support in methadone	N=159 (opiate-dependent individuals 5 years after start of methadone treatment)	Interviews	QoL defined by psychological well-being and other psychosocial variables	3
(60)	maintenance treatment How the patient's and physician's sociocultural influences shape health and health care	N=22 (family physicians)	Semi-structured in-depth interviews	Medicine and physicians should be socially and culturally neutral; by seeking to avoid bias, physicians might be denying the role of sociocultural influences in patients' health (access, treatment, outcomes)	1

[1]Rating scale 1-3;
(1): the study measured only the psychosocial approach
(2): the study measured quality of care as a secondary outcome
(3): the study measured quality of care as the primary outcome.

4 DISCUSSION

The themes of patient-centred behavioural medicine or psychosocial medicine are quite well presented in several papers, but there is little evidence of how effective these approaches are in the management of family practice patients.

Some studies addressed the impact of socioeconomic status and psycho-social variables on health care outcomes. Socioeconomic status (finance, shame, physical limitations, ethnic density, parenting, etc.) has an impact on quality of care (29, 37, 42, 46), especially when measured through quality of life (44). Quality of life is also associated with psychosocial variables, such as depression, social support, self-efficacy, chronic disease, etc. (29, 49, 59). A better interpersonal process predicts a more favourable outcome for the patient (28, 40, 46), as well as a strong motivation for family physicians and

nurses in their work (19). Not only does such a (w) holistic psychosocial approach result in higher quality outcomes (26, 27, 30, 50) but it is also very useful for prevention and treatment of not merely physical but also psychiatric illnesses (26, 47, 50). Well-developed primary care services are very important for the health of the population as well as for health care systems (33-35, 43, 48). According to the articles, the psychosocial factor or approach is very important in raising quality of life and therefore quality of medical treatment. It is therefore important that family physicians use it frequently in their medical encounters. Teachers should also highlight this part of being a family doctor in family medicine specialty training.

The strength of our study is that we can see that there is a paucity of literature concerning the effectiveness of the psychosocial approach in medicine. The fact that we found 36 papers concerning this topic, but nothing particular on the psychosocial aspects, calls for further research. We did not find any articles about the association between a broader, holistic bio-psycho-social approach and quality of care. We included quality of life, quality of care, quality of consultation, quality of well-being, perceived quality, satisfaction, good steps in prevention, lower health care costs, medication adherence, social functioning, health care disparities, lower levels of hospitalization and medical prescriptions. A further problem is the poor definition of the psychosocial approach; in our review, interventions covering patient-centred care, holistic care, prevention, socio-economic status, psychosocial well-being, and health beliefs, expectations, etc. were included.

The limitations of our study are that it was done in 2011, covering the years from 2007; there are other articles before and especially after October 2011. There are also some articles that are not available online (e.g. master's or doctoral theses), and others in languages other than English which were excluded. The main challenge in performing and presenting a review of this type is asking and answering a clear question. The predictor variable (the application of a psychosocial approach) and the outcome variable (improvements in quality of care) are not clearly defined in any of those papers. As a result, we are left with a description of many papers that seem irrelevant to the question.

5 CONCLUSIONS

The evidence of effectiveness of the psychosocial approach available in the literature is scarce and inconclusive, so further studies are needed. Studies in the field of doctors' holistic approach or doctors' psychosocial orientation which influences the relationship between the doctor and the patient, and the quality outcomes of the treatment and the healing process, should be carried out.

Although the bio-psycho-social model is well proclaimed, it has little support in the available literature, mainly due to the lack of sound research which studies differences in quality of care between traditional biomedical and bio-psycho-social approaches in patient management. As there is some evidence that some aspects of the bio-psycho-social approach correlate with better quality of care, this opens a whole new field of research.

CONFLICTS OF INTEREST

The authors declare that no conflicts of interest exist.

FUNDING

There was no financial support.

ETHICAL APPROVAL

Not requested.

REFERENCES

1. Derick WT. Holistic Health Care: what is it, and how can we achieve it? United Kingdom: Oxford Centre for Enablement, 2009.
2. Siebens HC. Proposing a practical clinical model. Top Stroke Rehabil 2011; 18: 60-5.
3. Munro S, Lewin S, Swart T, Volmink J. A review of health behaviour theories: how useful are these for developing interventions to promote long-term medication adherence for TB and HIV/AIDS? BMC Public Health 2007; 7: 104.
4. Ahmed T, Haboubi N. Assessment and management of nutrition in older people and its importance to health. Clin Interv Aging 2010; 5: 207-16.
5. DeHaven MJ, Gimpel NE. Reaching out to those in need: the case for community health science. J Am Board Fam Med 2007; 20: 527-32.
6. Brandling J, House W. Social prescribing in general practice: adding meaning to medicine. Br J Gen Pract 2009; 59: 454-6.
7. Maes M, Twisk FN. Chronic fatigue syndrome: Harvey and Wessely's (bio)psychosocial model versus a bio(psychosocial) model based on inflammatory and oxidative and nitrosative stress pathways. BMC Med 2010; 8: 35.
8. Shilling C. The body and social theory. London: SAGE Publications, 2003.
9. Chin WY, Lam CL, Lo SV. Quality of care of nurse-led and allied health personnel-led primary care clinics. Hong Kong Med J 2011; 17: 217-30.
10. Goodrich J, Cornwell J. Seeing the person in the patient. London: King`s Found, 2008.
11. McColl A, Roderick P. Clinical governance in primary care groups: the feasibility of deriving evidence-based performance indicators. Qual Health Care 2000; 9: 90-7.
12. O'Boyle CA. Measuring the quality of later life. Philos Trans R Soc Lond B Biol Sci 1997; 352: 1871-9.
13. Organization WH. Declaration of Alma Ata: International Conference on Primary Health Care, 1978.
14. Pourbohloul B, Kieny MP. Complex systems analysis: towards holistic approaches to health systems planning and policy. Bull World Health Organ 2011; 89: 242.

15. Hunter DJ. Health needs more than health care: the need for a new paradigm. Eur J Public Health 2008; 18: 217-9.
16. Gottlieb LM. Learning from Alma Ata: the medical home and comprehensive primary health care. J Am Board Fam Med 2009; 22: 242-6.
17. Marmot M. Health in an unequal world. Lancet 2006; 368: 2081-94.
18. Harenstam A. Exploring gender, work and living conditions and health - suggestions for contextual and comprehensive approaches. Scand J Work Environ Health 2009; 35: 127-33.
19. Strandberg EL, Ovhed I, Borgquist L, Wilhelmsson S. The perceived meaning of a (w)holistic view among general practitioners and district nurses in Swedish primary care: a qualitative study. BMC Fam Pract 2007; 8: 8.
20. Wonca Europe. Evropska definicija družinske medicine. Združenje zdravnikov družinske medicine. Barcelona: Evropski urad Svetovne zdravstvene organizacije, 2004.
21. Dickinson WP. Is there room for the family in our medical home? Fam Med 2011; 43: 207-9.
22. Shi L, Starfield B, Kennedy B, Kawachi I. Income inequality, primary care, and health indicators. J Fam Pract 1999; 48: 275-84.
23. van Weel C. Person-centred medicine in the context of primary care: a view from the World Organization of Family Doctors (Wonca). J Eval Clin Pract 2011; 17: 337-8.
24. Wonca Europe. European definition of general practice/family medicine. WONCA Europe Council, 2011.
25. van Weel C. Family practices registration networks contributed to primary care research. J Clin Epidemiol 2006; 59: 779-83.
26. Gine-Garriaga M, Martin C, Martin C, Puig-Ribera A, Juan JA, Guiu A. et al. Referral from primary care to a physical activity programme: establishing long-term adherence?: a randomized controlled trial: rationale and study design. BMC Public Health 2009; 9: 31.
27. McGrady A, Brennan J, Lynch D. Effects of wellness programs in family medicine. Appl Psychophysiol Biofeedback 2009; 34: 121-6.
28. Gater R, Waheed W, Husain N, Tomenson B, Aseem S, Creed F. Social intervention for British Pakistani women with depression: randomised controlled trial. Br J Psychiatry 2010; 197: 227-33.
29. Schmiege SJ, Aiken LS, Sander JL, Gerend MA. Osteoporosis prevention among young women: psychosocial models of calcium consumption and weight-bearing exercise. Health Psychol 2007; 26: 577-87.
30. Kallings LV, Leijon M, Hellénius ML, Ståhle A. Physical activity on prescription in primary health care: a follow-up of physical activity level and quality of life. Scand J Med Sci Sports 2008; 18: 154-61.
31. Askew DA, Jackson CL, Ware RS, Russell A. Protocol and baseline data from The Inala Chronic Disease Management Service evaluation study: a health services intervention study for diabetes care. BMC Health Serv Res 2010; 10: 134.
32. Cleary M, Hunt GE, Matheson S, Siegfried N, Walter G. Psychosocial interventions for people with both severe mental illness and substance misuse. Cochrane Database Syst Rev 2008; 23: 1.
33. Peleg R, Press Y, Asher M, Pugachev T, Glicensztain H, Lederman M. et al. An intervention program to reduce the number of hospitalizations of elderly patients in a primary care clinic. BMC Health Serv Res 2008; 8: 36.
34. Hogg W, Lemelin J, Moroz I, Soto E, Russell G. Improving prevention in primary care: evaluating the sustainability of outreach facilitation. Can Fam Physician 2008; 54: 712-20.
35. Bertakis KD, Azari R. Determinants and outcomes of patient-centered care. Patient Educ Couns 2011; 85: 46-52.
36. Ruiz-Moral R, Pérula de Torres L, Jaramillo-Martin I. The effect of patients' met expectations on consultation outcomes. a study with family medicine residents. J Gen Intern Med 2007; 22: 86-91.
37. Rohrer JE, Wilkinson JM, Barnes DE, Adamson SC. Physical limitations and perceived quality of care among family medicine patients. Clin Rehabil 2008; 22: 283-7.
38. Gene-Badia J, Ascaso C, Escaramis-Babiano G, Sampietro-Colom L, Catalan-Ramos A, Sans-Corrales M. et al. Personalised care, access, quality and team coordination are the main dimensions of family medicine output. Fam Pract 2007; 24: 41-7.
39. Woodsid JR, Miller MN, Floyd MR, McGowen KR, Pfortmiller DT. Observations on burnout in family medicine and psychiatry residents. Acad Psychiatry 2008; 32: 13-9.
40. Stewart AL, Napoles-Springer AM, Gregorich SE, Santoyo-Olsson J. Interpersonal processes of care survey: patient-reported measures for diverse groups. Health Serv Res 2007; 42: 1235-56.
41. Starrin B, Åslund C, Nilsson K. Financial stress, shaming experiences and psychosocial ill-health: studies into the finances-shame model. SOCI 2009; 91: 283-98.
42. Hussey P, Anderson G, Berthelot J-M, Feek C, Kelley E, Osborn R. et al. Trends in socioeconomic disparities in health care quality in four countries. Int J Qual Health Care 2008; 20: 53-61.
43. Ferrante JM, Balasubramanian BA, Hudson SV, Crabtree BF. Principles of the patient-centered medical home and preventive services delivery. Ann Fam Med 2010; 8: 108-16.
44. Bilotta C, Bowling A, Case A, Nicolini P, Mauri S, Castelli M. et al. Dimensions and correlates of quality of life according to frailty status: a cross-sectional study on community-dwelling older adults referred to an outpatient geriatric service in Italy. Health Qual Life Outcomes 2010; 8: 56.
45. Ayalon L, Gross R, Tabenkin H, Porath A, Heymann A, Porter B. Determinants of quality of life in primary care patients with diabetes: implications for social workers. Health Soc Work 2008; 33: 229-36.
46. Walters P, Ashworth M, Tylee A. Ethnic density, physical illness, social deprivation and antidepressant prescribing in primary care: ecological study. Br J Psychiatry 2008; 193: 235-9.
47. Oyama O, Kosch SG, Burg MA, Spruill TE. Understanding the scope and practice of behavioral medicine in family medicine. Fam Med 2009; 41: 578-84.
48. Fernandes VB, Caldeira AP, Faria AA, Rodrigues Neto JF. Hospitalizations sensitive to primary care as an evaluation indicator for the Family Health Strategy. Rev Saude Publica 2009; 43: 928-36.
49. Dilorio C, McCarty F, DePadilla L, Resnicow K, McDonnell-Holstad M, Yeager K. et al. Adherence to antiretroviral medication regimens: a test of a psychosocial model. AIDS Behav 2009; 13: 10-22.
50. Schmid M, Egli K, Martin BW, Bauer G. Health promotion in primary care: evaluation of a systematic procedure and stage specific information for physical activity counseling. Swiss Med Wkly 2009; 139: 665-71.
51. Mercer SW, Cawston PG, Bikker AP. Quality in general practice consultations; a qualitative study of the views of patients living in an area of high socio-economic deprivation in Scotland. BMC Fam Pract 2007; 8: 22.
52. Lacy NL, Backer EL. Evidence-based and patient-centered care: results from an STFM group project. Fam Med 2008; 40: 417-22.
53. Bokhour BG, Pugh MJ, Rao JK, Avetisyan R, Berlowitz DR, Kazis LE. Improving methods for measuring quality of care: a patient-centered approach in chronic disease. Med Care Res Rev 2009; 66: 147-66.
54. Rakovec-Felser Z. The biopsychosocial model of treatment the patients with inflammatory chronic bowel disease. Coll Antropol 2011; 35: 453-61.
55. Pereira B, Andrew G, Pednekar S, Pai R, Pelto P, Patel V. The explanatory models of depression in low income countries: listening to women in India. J Affect Disord 2007; 102: 209-18.
56. Harding G, Campbell J, Parsons S, Rahman A, Underwood M. British pain clinic practitioners' recognition and use of the bio-psychosocial pain management model for patients when physical interventions are ineffective or inappropriate: results of a qualitative study. BMC Musculoskelet Disord 2010; 11: 51.
57. Berkelmans PG, Berendsen AJ, Verhaak PF, Meer van der K. Characteristics of general practice care: what do senior citizens value?: a qualitative study. BMC Geriatr 2010; 10: 80.
58. Fung CS, Mercer SW. A qualitative study of patients' views on quality of primary care consultations in Hong Kong and comparison with the UK CARE Measure. BMC Fam Pract 2009; 10: 10.
59. De Mayer J, Vanderplasschen W, Lammenrtyn J, van Nieuwenhuizen C, Sabbe B, Broekaert E. Current quality of life and its determinants among opiate-dependent individuals five years after starting methadone treatment. Qual Life Res 2011; 20: 139-50.
60. Beagan BL, Kumas-Tan Z. Approaches to diversity in family medicine: "I have always tried to be colour blind". Can Fam Physician 2009; 55: e21-8.