Dissatisfaction between medical providers and patients in the Republic of Kazakhstan.

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Abstract

Background: Dissatisfaction among patients towards health care providers remains a serious concern in the Republic of Kazakhstan that requires further attention(1-3). Patient-centred care, trust between patients and medical providers, the involvement of patients in their own treatment process, and effective communication are major areas in need of strengthening in order to improve outcomes of medical care (4-7). The objective of this study was to broaden the investigation of patient dissatisfaction to various departments from different medical facilities in the city of Nur-Sultan and examine additional factors that may be influencing provider-patient communication and contributing to patient dissatisfaction.

Methods: This cross-sectional study of 500 patients (response rate, 85.4%) and 500 health care providers (response rate, 86.4%) from one private and one state hospital and two state policlinics (outpatient departments) in the city of Nur-Sultan, Kazakhstan, used questionnaires containing the Patient-Practitioner Orientation Scale (PPOS) and scales assessing life and job satisfaction, job effort-job reward balance, and patient evaluation of communication.

Results: Our study showed that the majority of health care providers and patients were doctor-centred as opposed to patient-centred in their expectations of the doctor visit. The patient-centred orientation of health care providers was negatively correlated with age (P=0.000218) and life satisfaction (P=0.000001). In patients, contrarily, patient-centredness was enhanced by higher life satisfaction (P=0.040), although negatively correlated with age (P=2.659E-21).

Conclusions: The results of this study demonstrate that younger health care providers and those with lower life satisfaction expect a more patient-centred approach to the doctor visit. Older respondents and those with higher life satisfaction, in contrast, reported doctor-centred attitudes. The majority of younger patients have a stronger belief in good health associated with patient-centred care whereas the older population preferred a more doctor-centred approach to care. In all patients, the preference for patient-centred care was associated with higher satisfaction in life.

Background

The World Health Organization has declared that quality medical service provided by all medical personnel ought to be delivered in a manner that is "effective, safe, people-centred care that is timely, equitable, integrated and efficient"(8). Patient-centred care is an important aspect of high-quality care(7, 9). A variety of constructive approaches to patient-centred care are being employed around the world as a response and means of change to the doctor-centred practices, policies, and attitudes still prevalent. To be doctor-oriented or doctor-centred is defined as an approach to treatment that deindividualizes the patient and focuses instead on what way is expedient for the doctor to treat instead of what is in the patient's best interest and expressed preferences (10). These approaches to increasing patient-centredness include trainings and workshops that address tailoring treatment options, stress and emotion management, motivational interviewing, and expressing empathy (11). They are mostly aimed

at teaching doctor-patient communication skills to healthcare providers and medical students (12). Various scholars have found that developing the skills and qualities mentioned above are crucial for medical residents to practice effective patient-centred care (13).

While the improvement of doctor-patient communication skills would likely address dissatisfaction among patients, the results of other studies, alongside the gradual increase of patients' complaints against medical care providers in Kazakhstan, show that a lack of communication skills is not the only cause of patient dissatisfaction and therefore cannot be the only solution (3, 14). During the Soviet period, Kazakhstan was affected by many political and economical factors that eventually resulted in neglect of the social sector, including medicine. However, since independence there has been significant progress in medical services and technologies but with an apparent inclination towards doctor-centred care(3). The Ministry of Health has reported that a majority of the complaints received have been based on problems with the organization of medical care and poor quality of medical services, including medicinal provision and the qualifications of and communication provided by medical personnel(14). The specific factors surrounding the dissatisfaction of medical care by patients is still not well understood, and further steps in the transformation of services towards patient-centred medicine are needed in Kazakhstan(1-3, 14). A previous study mentioned current policies that punish organizations for high complaint ratings instead of examining the causes of complaints and working with providers and facility management for possible solutions. Patient satisfaction was not valued highly during the Soviet era and patient satisfaction surveys are still not common practice in post-Soviet health systems (3). Our previous study examined the patient-centredness of doctors and patients to explore the role of the perceptions and expectations of doctors and patients about themselves and the other, which demonstrated the dominance of a doctor-centredness among both. Results of Communication Assessment Tool for patients (CAT) which was defined as a reliable method for evaluating patient perceptions of doctoral communication skills (15) showed that among patients, higher patient-centred scores were associated with higher satisfaction in communication with a doctors and with life satisfaction. But limitations of this study were a relatively small sample size of <200 usable provider and patient responses, as well as all participants were from the same hospital (2). Another limitation in our previous research design was the modification of the PPOS scale, to increase the ease of answering by patients. In the present study we used the original version of the PPOS scale for medical providers and patients, and number of all participants were increased and recruited from different departments and hospitals.

Some studies link patient satisfaction and the perception of quality with state-of-the-art equipment and modern technologies in medical facilities (12, 16). However, other studies show that new technologies and equipment are not necessarily the key to delivering patient-centred care or even in gaining patient satisfaction (17, 18). Organizational influences that emphasize the use of technology and other factors in patient-centred care include policies, resources, social norms, managerial commitment, training programs, and employee empowerment. It has been noted that the effects on patients of implementing technological measures—for example, information technology—can vary widely depending on the setting (17), presumably due to differences in the social-organizational environment such as workflow, work

tasks and processes, and the people in the environment (19, 20). Such examples have been reported by highly equipped general hospitals in developed countries (18, 19, 21) which have implemented systems that can deliver feedback on efforts surrounding patient-centred care and refine policies and practices accordingly.

Poor medical quality and patient dissatisfaction continue due to a number of factors, including an unrestrained increase in the number of private clinics not following the regulations of national health systems, inadequate medical training programs, inefficiencies in the healthcare system, and unsupportive policies in human resources (3). Patient perceptions of the physician consultation, provision of information to patients and the environment of delivering services are what determine the patient's perception of quality of services in clinics (1, 22). For patients, the process and quality of interactions with health professionals had more significant effects on the patients' perceived value rather than environmental features of quality of service delivery which had no significant effect on perceived value or overall satisfaction (5, 6).

The absence of quality interactions can affect the perceptions patients have of the overall performance of medical care which may lead to outcomes such as miscommunication that would negatively affect patient-centredness and leave the patient dissatisfied (7, 22). Where patients did feel satisfied with their care, such as in a study which included the countries of the USA, Australia, and Canada, it was due to various factors including doctors making tailored treatment plans for patients which took into account the preferences of patients(23, 24). This same study showed that more than the half of physicians asked the patients for their opinions about the treatment, demonstrating patient-centred orientations in care (23).

Patient-centred care involves the implementation of personal preferences, needs, and requirements through effective doctor-patient communication which consequently leads to a proper treatment and commitment on the part of the patient (10). Meanwhile, there are many factors which affect the physician's performance, including the level of proficiency, skillfulness, working conditions, and attitudes towards patient care. Physicians can build relationships of trust and gain the confidence of their patients through their communication style and how they recommend treatments and/or actions on the part of the patient. However, physicians who lack knowledge or necessary skills often fail to provide high quality care, including proper patient communication, which leads to a lack of trust by patients and other negative outcomes (2, 25).

Objectives

The objective of this study was to broaden the investigation of patient dissatisfaction to various departments from different medical facilities in the city of Nur-Sultan and examine additional environmental factors that may be influencing provider-patient communication and contributing to patient dissatisfaction. We sought to obtain answers to the research questions and test the following hypotheses:

RQ1: What is the preferred orientation to the doctor visit across departments and hospitals for doctors and patients?

RQ2: What relationships do attitudes towards work and life have on orientations towards the doctor-patient visit?

H1: Doctors and patients with low life satisfaction will be more doctor-centred than those with high life satisfaction.

H2: Doctors who are doctor-centred will also have a lower effort-reward ratio as opposed to doctors who are patient-oriented.

H3: Patients who are patient-oriented towards the doctor visit will have higher scores on the CAT.

Methods

Study design

A cross-sectional study was carried out among 500 patients and 500 healthcare providers, including doctors and nurses, from 2 general hospitals and 2 polyclinics in the city of Nur-Sultan, Kazakhstan. All participants were asked to complete a survey which included the Patient-Practitioner Orientation Scale (PPOS) and scales assessing life and job satisfaction, effort-reward balance of healthcare professionals, and the patients' perceptions of communication. All participants sealed their responses in given envelopes after completion and send them to a locked box in the hospital to ensure confidentiality.

Participants

500 medical providers were asked to participate in the study, and 432 agreed to fill out the questionnaire (86.4% response rate). All participants from medical professions were randomly selected from different departments to obtain a representative sample of the hospital staff. A total of 500 patients from randomly selected departments (endocrinology, cardiology, vascular surgery, general surgery) with chronic disease but in stable condition at the moment of our investigation were also asked to participate in the study, and 427 of them agreed (85.4 % response rate). There were no missing data in the survey responses.

Ethical consideration

Full ethical approval was received from the Institutional Research Ethics Committee at Nazarbayev University, Nur-Sultan, Kazakhstan, and the study complies with the Declaration of Helsinki Ethical Principles for Medical Research. Permissions and approvals were obtained from each hospital's management. Prior to participation, the participants were provided with detailed information about the study in Kazakh and Russian languages. Written consent was obtained from each participant.

Questionnaires

The Provider-Patient Orientation Scale (PPOS) (9) was developed to assess doctors' and patients' orientations toward one another during the doctor visit. We chose the PPOS because it can be given to both providers and patients, and their answers can be compared for congruence. The original PPOS contains 18 questions, responses are recorded on a 6-point scale (higher score means more patient orientation), and the response scores are summed. The scale has previously been translated into Russian, and that translation was checked for consistency in meaning using back translation with different translators to compare to the original English scale.

Several other scales were included on the questionnaire for doctors, nurses, and patients to explore other influences on patient dissatisfaction: the Satisfaction with Life Scale (SLS) (5 items)(25), the Job Satisfaction Scale (JSS) (16 items)(26), and the Effort-Reward Imbalance Questionnaire (ERIQ) (22 items)(27). The imbalance between effort and reward was measured by the ER ratio, with the effort score being the numerator and reward score the denominator, multiplied by a correction factor to allow for an unequal number of questions in the numerator and denominator, as previously proposed by Siegrist et al (27). For an evaluation of patient satisfaction with medical providers, patients completed the Communication Assessment Tool (CAT) (15 items)(15). Patients' responses cover general experience rather than experience with a specific medical provider.

Data analysis

All questions were re-coded for the same direction (higher score means more patient orientation) and summed. The PPOS mean was calculated by dividing the sum by the number of responses. The PPOS mean was dichotomized with the cutoff point at 3.5 points (the midpoint between disagree and agree). The binary variable was calculated by collapsing categories: strongly disagree, somewhat disagree, and disagree on the one hand (value 1) and strongly agree, somewhat agree, and agree on the other hand (value 2). A similar binary variable was created for patients by collapsing strongly and slightly disagree (value 1) and slightly and strongly agree (value 2); again, the cutoff point was at 3.5 points.

Descriptive analyses of the binary measures of provider-patient orientation were conducted using cross-tabulations, calculation of percentages, and chi-square tests. Associations of the provider-patient orientation with covariates were assessed using Pearson correlation coefficients and linear regression. In additional sensitivity analyses, multivariable logistic regression (binary provider-patient orientation outcome variable) and linear regression (continuous binary provider-patient orientation outcome variable) were used to adjust for all other available covariates, using the maximum number of participants with valid data in a given model. Differences in mean scores were analyzed by analysis of variance (ANOVA). SPSS statistics software was used for all analyses.

Results

Demographic Characteristics

Patients were similarly distributed throughout the age groups, and all patients were over 18 years old (all child patients in Kazakhstan are treated at separate hospitals). However, doctors and nurses, all current practitioners with licenses, were distributed more heavily in the younger age groups (25≤30 years old). The nurses were almost all female, while the sex distribution of doctors was similar to that of patients. The distribution of participants by age and sex is shown in Table 1. We found no differences in the sex distribution of providers between different hospital departments.

PPOS Data for Providers (Doctors and Nurses)

Analysis (chi-square test) of PPOS scores in doctors and nurses showed higher scores in nurses when compared to doctors (p=0.034). No difference was found between male and female providers (doctors and nurses) (p=0.888). Table 2 shows the proportions of providers who could be characterized as patient-centred. Two features are noteworthy. First, the vast majority of providers were doctor-centred. Overall, only 10,6 % of providers identified themselves through the PPOS as patient-centred. Second, the proportions were similar between males and females, but the proportion of patient-centred providers was smaller among doctors (8,7%) than among nurses (15,7%). The proportion of patient-centred providers is higher among the ages of 31-40 years old (16,2%) and 41-50 years old (10,4%) than among the ages of 25- 30 years old (5,1%) and older than 50 years old (5,3%).

Other Variables for Providers and Correlations with PPOS Data

The other variables collected from providers were life satisfaction, job satisfaction, job effort, job reward, and the ER ratio as a measure of ER imbalance. Most variables were distributed symmetrically, and we found no major differences between doctors and nurses or between males and females. Table 3 shows the correlation coefficients between the PPOS and other factors measured in providers. Correlation coefficient estimates the direction and strength of association between 2 continuous variables; the square of the coefficient indicates the proportion of variation in dependent variables (PPOS) explained by independent variables. There was a negative correlation between PPOS and age (R -0,18, P value 0,000218), and PPOS and life satisfaction (R -0,23, P value 0,000001).

Other Variables for Patients and Correlations with PPOS Data

The other variables collected from patients were SLS (mean 3.4±1.37), and CAT (mean 5.0±0.99). Our findings showed that score for SLS and CAT were higher among the females (mean 3.55±1.47 and 5.21±0.96, respectively) compared to males (3.19±1.12 and 4.58±0.93, respectively) (p=0.009 for SLS and p<0.0001 for CAT).

Table 2 shows the proportions of patients who could be characterized as patient-centred. Overall, 13.8% of patients identified as patient-centered from their PPOS score. The proportion of patient-centred patients was higher among the ages ≤ 40 years old (34,6%) and ≥60 years old (35,3%).

The correlations between PPOS and other variables (age, sex, SLS, CAT for patients suggest that life satisfaction was significantly associated with PPOS; patients with higher scores on life satisfaction were

more patient-centered (R 0,44, *P* value 2,659E-21). The age variable was inversely associated with PPOS; elder patients were less patient-centred (R -0,10, *P* value 0,040). (Table 4).

Comparing the PPOS between Providers and Patients

Using the dichotomized PPOS scale with a cutoff at 3.5 points, the proportion of patient-centred participants was highest among nurses (15,7%) compared to patients (13.8%) and doctors (8.7%). The difference between the 3 groups was statistically significant (*P*=0.049). (Not shown in the table). In a multivariable analysis, the difference between providers and patients could be explained by adjusting for age (OR:1,07 (95% CI 1.00-1.15), *P* value 0,040 – for nurses) and for life satisfaction (OR:0,19 (95% CI 0.08-0.50), *P* value 0,01- for nurses; OR:1,99 (95% CI 1.59-2.49), *P* value 1,261E-9 - for patients) (Table 5).

ANOVA showed that job satisfaction among doctors (mean score 4.4) was higher when compared to nurses (mean score 4.2), (*P*=0.047). Job satisfaction among all medical providers was higher among males (mean score 4.6) compared to females (mean score 4.2), (*P*=0.001) (not shown in table).

Discussion

Interpretation of results

Our study shows that the overwhelming majority of health care providers and even patients are doctor-centered. The patient-centred orientation of health care providers is negatively correlated with age (P=0.000218) and life satisfaction (P=0.000001). In patients, contrarily, patient-centredness is enhanced by higher life satisfaction (P=0.040), although negatively correlated with age (P=2.659E-21).

Our data show that only 10,6 % of overall medical providers identify themselves as patient-centred, but this proportion was smaller among doctors (8,7%) compared to that of nurses (15,7%) with no difference between males and females. This finding suggests that more nurses scored as patient-centred than doctors, and this may be in part due to different aspects of standard interactions with patients. Nurses spend more time with patients during regular medical visits and procedures in the hospital or outpatient clinics, and these interactions require more attentive care and communication skills in order to instruct patients and reduce their anxiety (28). However, the results of the PPOS still showed that significantly more nurses scored as doctor-centred rather than patient-centred (7).

The proportion of patient-centred providers is higher among the ages of 31-40 years old (16,2%) and 41-50 years old (10,4%) than among the ages of 25- 30 years old (5,1%) and older than 50 years old (5,3%). The proportion of patients who identify as patient-centred is 13,8%. The proportion of patient-centred patients was higher among the ages ≤ 40 years old (34,6%) and ≥60 years old (35,3%).

This study found that more of the younger health care providers and those with lower life satisfaction are patient-centred. More older participants and those with higher life satisfaction, in contrast, reported doctor-centred attitudes. The majority of younger patients have a stronger belief in good health associated with patient-centred care whereas the majority of older population preferred a more doctor-

centred approach. In all patients, the preference of patient-centred care was associated with higher satisfaction in life. Overall, this study shows the high prevalence of doctor-centred medical providers and doctor-centred patients compared to patient-centred medical providers and patients.

The Life Satisfaction Scale (25) in this context appears to be a relevant measure in identifying additional factors in patient satisfaction beyond what happens in clinics. Life satisfaction is related to the preference of patient-centred care among our respondents rather than doctor-centered health care. However, it is different for providers, depending on their age group, and different for patients. Younger health care providers and those with lower life satisfaction are more patient-centred. Older respondents and those with higher life satisfaction, in contrast, reported doctor-centred attitudes. The majority of younger patients have a stronger belief in good health associated with patient-centred care whereas the older population preferred a more doctor-centred approach. In all patients, the preference of patient-centred care was associated with higher satisfaction in life.

Current healthcare policies that focus on punishing organizations for high complaint ratings instead of encouraging the examination of underlying causes for possible solutions were identified as facilitating factors in doctor orientation (3, 14). A punitive environment can encourage an adversarial relationship with patients rather than a cooperative one. The Ministry of Health recently revealed policies to regulate provider performance through commission which applies to all medical providers. These commissions would be based on an assessment of provider knowledge and medical skills, the purpose of which is to increase the quality of medical care by encouraging professional development in these areas. However, such incentives are being rolled out without any preliminary investigation of current challenges and successes of medical services and existing personnel(3, 14). An incentive for development of medical but not clinical (i.e. patient-centered) skills will only exacerbate the problem.

National policies establish rules and regulations which are then enacted by healthcare management, and little to no feedback or communication from medical professionals about difficulties they face makes its way back to policy makers. We suspect that this top-down management of the health system has contributed to the current environment and will continue to decrease the motivation of providers to work towards patient-centredness, regardless of years of experience(3, 20). In most cases, medical providers are not satisfied with the working environment because their expressed needs and problems are not taken into account. Such neglect and frustration likely affects provider attitudes and influences their interactions with patients who typically come with high expectations of quality without understanding contextual factors which lead to miscommunication and disappointment in medical care(29). This is one of the driving forces of miscommunication and different expectations which continue to have a place among healthcare providers and patients in Kazakhstan, making patient-centeredness less possible.

In our study we found that at the beginning of their careers, the younger healthcare providers are more patient-centred, possibly due to their newly gained skills and perceived role in serving society(11). Younger doctors have high expectations in job reward. Years of negative life experience, economic

instability and a punitive working environment likely will lead to emotional distress and decreased motivation or burnout, as described by Reith et al.

(20). Even after establishing themselves as professionals and achieving a higher salary, these other environmental factors may cause them to become less motivated to update their professional skills that serve patient needs (11, 20, 29).

Most patients in this study, regardless of social status, still expect the doctor to be authoritative, not only prescribing the solution but curing the patient's illness (30). Many doctors tend to overestimate their ability to communicate with patients, especially when that communication requires explanation of complex medical concepts and relationship building for greater trust (31). Furthermore, a treatment prescribed by a provider may not bring anticipated results, and not in an anticipated timeframe. In this study, doctor-centred patients visit doctor-centred doctors which still results in dissatisfaction. The finding that experienced health care providers which were satisfied with life remained doctor-centred suggested an area for more detailed investigation and improvement. Traditional doctor-patient relationships in Kazakhstan are based on paternalistic attitudes, common among post-communist countries (32). The patient-centred approach considers patient autonomy, defined as the patient's right to make treatment decisions independently, which is widely known but not always practiced (32, 33). Today these approaches are gaining acceptance, and patient autonomy in practice, which is not easy to implement, needs to be publicly clarified and promoted. Improving doctor-patient communication is possible, but it takes time and a supportive environment (30).

Poor doctor-patient communication affects overall medical care (4, 5, 22, 30), but in the case of Kazakhstan we have revealed that miscommunication is just one of the factors affecting doctor-patient interactions. From 2017 to 2018, all medical schools in Kazakhstan implemented "Communication skills" as a separate and mandatory course in the medical curriculum (34). Further development of a patient-centred communication guideline, based on cultural and local communicative specificities, will be essential if it is to be used by practitioners in their daily medical practice. The skills, along with valuing the importance of understanding the environmental influences on interacting with patients, is needed to improve provider communication with patients.

Limitations of the study

Limited time and resources constrained the number and representativeness of the participants. To have access to a more representative and diverse group of participants, more formal arrangements with hospital administrations will be necessary. Additionally, the duration of hospitalized patients typically lasts no longer than 3-6 days, giving us a limited window to approach patients and secure their participation. Hospital administration allowed the research team to approach patients in a stable condition with predominantly chronic diseases which were able to complete provided questioners without assistance.

An additional challenge in this study is the lack of published data covering this research area of patient dissatisfaction with health care and providers, as well as the convoluted official information about the exact number and types of patient complaints in the Republic of Kazakhstan. The available information is from scattered newspaper and news website articles, and some articles published as official reports for the World Health Organization (1, 3, 34, 35).

Conclusions

The majority of medical providers and patients in this study are not patient-centred, and additional environmental factors which may be affecting life satisfaction, are leading to dissatisfaction from the patients' side. We believe that doctor-centred expectations from patients results in high expectations of health care providers to be able to solve any health problem without patient input, and at the same time we see that a lack of patient-centred care among health care providers leads to distrust and unsuccessful treatment (9).

This disparity in expectations and attitudes, which ultimately leads to miscommunication and frustration, is understandably difficult for professionals to address. The principle of autonomy in medical decision-making among medical providers and patients requires increased prioritization and support (32, 33). In order for medical care to improve and for both patients and providers to experience greater satisfaction in their interactions, shifts in policy that create a supportive environment for greater autonomy are needed.

Abbreviations

H: Hypothesis;

RQ: Research question;

PPOS: Provider-Patient Orientation Scale;

SLS: Satisfaction with Life Scale;

JSS: Job Satisfaction Scale;

ERIQ: Effort-Reward Imbalance Questionnaire;

CAT: Communication Assessment Tool.

Declarations

Ethics approval and consent to participate

This study and consent form was approved by Institutional Research Ethical Committee on Feb.20, 2013. Nazarbayev University, Kazakhstan, Nur-Sultan city. All participants were provided with detailed

information about the study in Kazakh and Russian languages. Written informed consent was obtained from all participants.

Consent for publication

Not applicable

Availability of data and material

Data are available on request due to privacy or other restrictions. The data that support the findings of this study are available on request from the corresponding author A.Z. The data are not publicly available due to them containing information that could compromise research participant privacy/consent.

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Tables

Table 1. Distribution of respondents with valid data on the provider-patient orientation scale by age and sex

Variable	Doctors N=311	Nurses N=121	Patients N=427
Age group			
25≤30 years	35 (11.3%)	44 (36.4%)	96 (22.5%)
31-40 years	114 (36.7%)	46 (38%)	132 (30.9%)
41-50 years	101 (32.5%)	24 (19.8%)	107 (25.1%)
51-60 years	49 (15.8%)	7 (5.8%)	75 (17.6%)
60-65 years	12 (3.9%)	0 (0%)	17 (4.0%)
Sex			
Male	95 (30.5%)	14 (11.6%)	150 (35.1%)
Female	216 (69.5%)	107 (88.4%)	277 (64.9%)

Table 2. Patients-oriented providers and patients with valid data on the provider-patient orientation scale.

Variable	Providers N=432	Patients N=427
Overall	46/432 (10.6%)	59/427 (13.8%)
Sex		
Male	12/109 (11%)	22/150 (14.7%)
Female	34/323 (10.5%)	37/277 (13.3%)
Provider		
Doctor	27/311 (8.7%)	
Nurse	19/121 (15.7%)	
Age group		
25≤30 years	4/79 (5.1%)	18/96 (18.7%)
31-40 years	26/160 (16.2%)	21/132 (15.9%)
41-50 years	13/125 (10.4%)	8/107 (7.5%)
51-60 years	3/56 (5.3%)	6/75 (8.0%)
60-65 years	0/12 (0.0%)	6/17 (35.3%)

Table 3. Correlation between provider-patient orientation scale (PPOS) and covariates for providers (n=432)

Variable	Correlation coefficient	P value
Age	-0.18	**0.000218**
Sex	-0.05	0.305
Doctor/nurse	0.001	0.976
Life satisfaction	-0.23	**0.000001**
Job satisfaction	0.07	0.158
Job effort	0.002	0.962
Job reward	0.02	0.685
Job effort-reward ratio	-0.016	0.742

Table 4. Correlation between provider-patient orientation scale (PPOS) and covariates for patients (n=427)

Variable	Correlation Coefficient	P value
Age	-0.10	0.040
Sex	0.02	0.680
Life satisfaction	0.44	2.659E-21
Communication assessment	0.08	0.094

Table 5. Effects of covariates age, sex and life satisfaction (SLS) on the PPOS* in providers (doctors/nurses) and patients [1]

Covariate	Doctors N=311		Nurses N=121		Patients N=427	
	OR (95%CI)	P Value	OR (95%CI)	P Value	OR (95%CI)	P Value
Age	0.98 (0.94-1.03)	0.457	1.07 (1.00-1.15)	0.040	1.00 (0.98-1.03)	0.759
Sex**	0.93 (0.39-2.25)	0.875	1.66 (0.36-7.62)	0.513	1.66 (0.88-3.13)	0.114
SLS	0.77 (0.53-1.12)	0.178	0.19 (0.08-0.50)	0.001	1.99 (1.59-2.49)	1.261E-9

*PPOS scale was dichotomized with a cutoff of >3.5 points   **Female sex was set as an indicator