

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

Anara Zhumadilova (✉ [azhumadilova@nu.edu.kz](mailto:azhumadilova@nu.edu.kz))

Nazarbayev University <https://orcid.org/0000-0001-7514-9705>

Aizhan Kozhakhmetova

Nazarbayev University

Gaukhar Kuanyshbayeva

Nazarbayev University

Madina Kazhen

Nazarbayev University

Amina Akhmadiyeva

Nazarbayev University

Brett J. Craig

Saint Louis College of Pharmacy


---

## Research article

**Keywords:** Nurse-patient relations, Patient-centered care, Physician-patient relations, Dissatisfaction in a medical care, Doctor-centered care

**Posted Date:** March 24th, 2020

**DOI:** <https://doi.org/10.21203/rs.2.21937/v2>

**License:**   This work is licensed under a Creative Commons Attribution 4.0 International License. [Read Full License](#)

---

# Abstract

**Background:** Dissatisfaction among patients towards health care providers remains a serious concern in the Republic of Kazakhstan that requires further attention [1,2,3,4,5]. Patient-centered 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 [6-10]. 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 hospitals and two state polyclinics 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 even patients were doctor-centered as opposed to patient-centered in their expectations of the doctor visit. The patient-centered orientation of health care providers was negatively correlated with age ( $P=0.000218$ ) and life satisfaction ( $P=0.000001$ ). In patients, contrarily, patient-centeredness 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-centered approach to the doctor visit. Older respondents and those with higher life satisfaction, in contrast, reported doctor-centered attitudes. The majority of younger patients have a stronger belief in good health associated with patient centered care whereas the older population preferred a more doctor-centered approach to care. In all patients, the preference for patient-centered 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” (p. 11) [11]. Patient-centered care is an important aspect of high-quality care. [12]. A variety of constructive approaches to patient-centered care are being employed around the world as a response and means of change to the doctor-oriented practices, policies, and attitudes still prevalent. To be doctor-oriented or doctor-centered implies an approach to treatment that deindividualizes the patient and focuses instead on what way is expedient for the doctor to treat rather than what is in the patient’s best interest and expressed preferences. These approaches to increasing patient-centeredness include trainings and workshops that address tailoring treatment options, stress and emotion management, motivational interviewing, and expressing empathy [13]. They are mostly aimed at teaching doctor-patient communication skills to healthcare providers and medical students [14]. Various scholars have found that developing the skills and qualities mentioned above are crucial for medical residents to practice effective patient-centered care [15].

While the improvement of doctor-patient communication skills would likely address dissatisfaction among patients, the results of this study, 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 [4]. 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-oriented care [1-3]. 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 [4].

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-centered medicine are needed in Kazakhstan [1-3]. 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. The study examined the orientations of doctors and patients during the doctor visit to explore the role of the perceptions and expectations of doctors and patients about themselves and the other, the results of which demonstrated the dominance of a doctor-orientation among both [2].

Some studies link patient satisfaction and the perception of quality with state-of-the-art equipment and modern technologies in medical facilities [7, 14, 16]. However, other studies show that new technologies and equipment are not necessarily the key to delivering patient-centered care or even in gaining patient satisfaction [9, 10, 12]. Organizational influences that determine emphases on the use of technology and other factors in

patient-centered 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 [18]. Such examples have been reported by highly equipped general hospitals in developed countries [12, 17, 18] which have implemented systems that can deliver feedback on efforts surrounding patient-centered care and refine policies and practices accordingly.

Other studies highlight how poor medical quality and patient dissatisfaction is due to inefficiencies in the healthcare system, unsupportive policies in human resources, inadequate medical training programs, and the unrestrained increase in the number of private clinics which do not always follow the regulations of national health systems [7]. 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 [9]. 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 [10].

When quality interactions are not emphasized, the overall performance of medical care is negatively affected and miscommunication becomes the outcome that thwarts patient-centeredness and leaves the patient dissatisfied. [19]. 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 [20, 21]. This same study showed that more than the half of physicians asked the patients for their opinions about the treatment, demonstrating patient-centered orientations in care [20].

Patient-centered 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. 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 that 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, 19, 22].

## **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-oriented than those with high life satisfaction.

H2: Doctors who are doctor-oriented 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 sent 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)<sup>23</sup> 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) [24], the Job Satisfaction Scale (JSS) (16 items) [25], and the Effort-Reward Imbalance Questionnaire (ERIQ) (22 items). 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 [26]. For an evaluation of patient satisfaction with medical providers, patients completed the Communication Assessment Tool (CAT) (15 items) [27]. 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)**

We found no significant differences in PPOS scores between doctors and nurses or between male and female providers (doctors and nurses). Table 2 shows the proportions of providers who could be characterized as patient-oriented. Two features are noteworthy. First, the vast majority of providers were doctor-oriented. Overall, only 10,6 % of providers identified themselves through the PPOS as patient-oriented. Second, the proportions were similar between males and females, but the proportion of patient-oriented providers was smaller among doctors (8,7%) than among nurses (15,7%). The proportion of patient-orientated 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  $3.4 \pm 1.37$ ), and CAT (mean  $5.0 \pm 0.99$ ). Our findings showed that score for SLS and CAT were higher among the females (mean  $3.55 \pm 1.47$  and  $5.21 \pm 0.96$ , respectively) compared to males ( $3.19 \pm 1.12$  and  $4.58 \pm 0.93$ , 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-oriented. Overall, 13.8% of patients identified as patient-oriented from their PPOS score. The proportion of patient-orientated patients was higher among the ages  $\leq 40$  years old (34,6%) and  $\geq 60$  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-oriented ( $R = 0,44$ ,  $P$  value  $2,659E-21$ ). The age variable was inversely associated with PPOS; elder patients were less patient-oriented ( $R = -0,10$ ,  $P$  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-oriented 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 results:**

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).

#### **Interpretation of results**

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

Our data shows that only 10,6 % of overall medical providers identify themselves as patient-oriented, but this proportion was smaller among doctors (8,7%) compared to that of nurses (15,7%) with no difference between males and females. The proportion of patient-orientated 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-oriented is 13,8%. The proportion of patient-orientated patients was higher among the ages  $\leq 40$  years old (34,6%) and  $\geq 60$  years old (35,3%).

#### **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, 4, 11].

### **Improvements based on the limitations of a previous pilot study**

In a previous pilot study [2], we confirmed our hypothesis that the majority of doctors and nurses in the general hospital of Astana city (Nur-Sultan city from 2019), Kazakhstan, are doctor-oriented, but surprisingly the majority of patients in that study showed the same results [2]. One problem in our previous research design was the modification of the PPOS scale, to increase the ease of answering by patients. In all questions we reduced six variants of answers into four, while for doctors and nurses the original form of the scale with six variants was used. Another limitation is that we had a smaller number of patients and departments where they have been hospitalized. 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 several different departments and hospitals.

## **Discussion**

This study found that younger health care providers and those with lower life satisfaction are more patient-centered. Older participants and those with higher life satisfaction, in contrast, reported doctor-centered attitudes. The majority of younger patients have a stronger belief in good health associated with patient-centered care whereas the older population preferred a more doctor-centered approach. In all patients, the preference of patient-centered care was associated with higher satisfaction in life. Overall, this study shows the high prevalence of doctor-oriented medical providers and doctor-oriented patients compared to patient-centered medical providers and patients.

The Life Satisfaction Scale [24] 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-centered 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-centered. Older respondents and those with higher life satisfaction, in contrast, reported doctor-centered attitudes. The majority of younger patients have a stronger belief in good health associated with patient-centered care whereas the older population preferred a more doctor-centered approach. In all patients, the preference of patient-centered care was associated with higher satisfaction in life.

In the previous pilot study, current healthcare policies that focus on punishing organizations for high complaint ratings instead of examining the problem for possible solutions were identified as facilitating factors in provider orientation [2]. 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 [4]. 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-centeredness, regardless of years of experience [28]. 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-oriented, possibly due to their newly gained skills and perceived role in serving society [30]. Younger doctors have high expectations in job reward, but if years of negative life experience, economic instability and a punitive working environment follows, it likely will lead to emotional distress and decreased motivation to make an effort to be patient-centered. 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 [29, 30].

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 [31]. 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 [32]. Furthermore, a treatment prescribed by a provider may not bring anticipated results, and not in an anticipated timeframe. In this study, doctor-oriented patients visit doctor-oriented doctors which still results in dissatisfaction. The finding that experienced health care providers which were satisfied with life remained doctor-centered 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 [33]. The patient-centered approach considers patient autonomy, defined as the patient's right to make treatment decisions independently, which is widely known but not always practiced [33,34]. 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 [31].

In the previous pilot study, we discussed that poor doctor-patient communication affects overall medical care, 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 [35]. Further development of a patient-centered 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.

## Conclusions

The majority of medical providers and patients in this study are not patient-centered, and additional environmental factors which may be affecting life satisfaction, are leading to dissatisfaction from the patients' side. We believe that doctor-centered 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-centered care among health care providers leads to distrust and unsuccessful treatment [23]. 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 [33, 34]. 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; 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.

### Consent for publication

Written informed consent to participate and for publication was obtained from the patient. The signed informed consent form is available to the Editor upon request.

### Availability of data and materials

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.

### Competing interests

The authors declare that they have no competing interests.

### Funding

Funding for this study was provided by Ministry of Science and Education of the Republic of Kazakhstan (Grant: AP05132694). The funding body had no role in the design of the study, data collection, analysis, and interpretation or in the writing the manuscript.

### Author's contributions

A.Z., B.J.C. – conception and design of study, A.K.-acquisition of data, A.Z.,A.K.-analysis and interpretation of data, literature review and data collection – G.K.,M.K.,A.A.

### Acknowledgements

Nazarbayev University, School of Sciences and Humanities, Ministry of Science and Education of the Republic of Kazakhstan

### Author information

<sup>1</sup>Anara Zhumadilova (corresponding author)- Nazarbayev University, School of Sciences and Humanities, Department of Biology, 53 Kabanbay batyr, Nur-Sultan city, 010000, Kazakhstan; +77056706780, azhumadilova@nu.edu.kz

<sup>2</sup>Aizhan Kozhakhmetova- Nazarbayev University, School of Sciences and Humanities, Department of Biology, 53 Kabanbay batyr, Nur-Sultan city, 010000, Kazakhstan; akozhakhmetova@nu.edu.kz

<sup>3</sup>Gaukhar Kuanyshbayeva- Astana Medical University, Basics of Medicine Department, 28/1 Kabanbay batyr, Nur-Sultan city, 010000; gaukhar.kuanyshbayeva@gmail.com

<sup>2</sup>Madina Kazhen- Nazarbayev University, School of Sciences and Humanities, 53 Kabanbay batyr, Nur-Sultan city, 010000, Kazakhstan; madina.kazhen@nu.edu.kz

<sup>2</sup>Amina Akhmediyeva- Nazarbayev University, School of Sciences and Humanities, 53 Kabanbay batyr, Nur-Sultan city, 010000, Kazakhstan; amina.akhmediyeva@nu.edu.kz

<sup>4</sup>Brett J. Craig- St. Louis College of Pharmacy, Department of Health Communication, 4588 Parkview Place, St. Louis, MO, 63110, USA; brettjcraig@gmail.com

## References

1. Craig B J, Kapysheva A & World Health Organization. Regional Office for Europe. Tailoring communication training for health care providers: a case study in translating research into practice. Public health panorama. 2018; 04 (04), 564 - 573.
2. Zhumadilova A, Craig BJ, Bobak M. Patient-Centered Beliefs Among Patients and Providers in Kazakhstan. Ochsner J. 2018 Spring; 18(1):46-52. PMID: 29559869; PMCID: PMC5855422.
3. Tursynkhan A. Patient satisfaction with physician-patient communication in outpatient care: A pilot study. 2018. Nazarbayev University School of Medicine. Available at: <https://nur.nu.edu.kz/handle/123456789/3307?show=full>. Date accessed 21 Feb.2020.
4. Number of complaints about medical services in Kazakhstan increased by 25% - Birtanov. АО «Республиканская газета «Казахстанская правда». 2019. <https://www.kazpravda.kz/en/news/society/number-of-complaints-about-medical-services-in-kazakhstan-increased-by-25-Birtanov>. Date accessed 12 Nov. 2019.
5. Syzdykova AM., Turgambayeva AK., Karibekov TS. Risk management in healthcare system. Clinical medicine of Kazakhstan. 2014; №3 (33). Available online: <http://www.clinmedkaz.org/upload/sayi/5/JCMK-00146.pdf>. Date accessed 20 Nov. 2019.
6. Ford S. Patient-centered Medicine, Transforming the Clinical Method (2nd edition). Health Expect. 2004 Jun; 7(2):181–2. doi: 10.1111/j.1369-7625.2004.00270.x.
7. De Man J, et al. Patient-Centred Care and People-Centred Health Systems in Sub-Saharan Africa: Why So Little of Something So Badly Needed? Int J Pers Cent Med. 2017; 6(3):162–73.
8. Lee AV, Moriarty JP, Borgstrom C, Horwitz LI. What can we learn from patient dissatisfaction? An analysis of dissatisfying events at an academic medical center. J Hosp Med. 2010 Nov-Dec; 5(9):514-20. doi: 10.1002/jhm.861.
9. Abbasi-Moghaddam MA, Zarei E, Bagherzadeh R, Dargahi H, Farrokhi P. Evaluation of service quality from patients' viewpoint. BMC Health Serv Res. 2019 Mar 15; 19 (1):170. doi: 10.1186/s12913-019-3998-0.
10. Zarei E, Arab M, Tabatabaei SM, Rashidian A, Forushani AR, Khabiri R. Understanding patients' behavioral intentions: evidence from Iran's private hospitals industry. J Health Organ Manag. 2014; 28(6):795-810. doi: 10.1108/jhom-11-2012-0218.
11. WHO, OECD (Organisation for Economic Co-operation and Development), and World Bank. Delivering quality health services: A global imperative for universal health coverage. Geneva, Switzerland: WHO, OECD, and World Bank; 2018.

- <http://apps.who.int/iris/bitstream/handle/10665/272465/9789241513906-eng.pdf?ua=1> Date accessed 13 Aug. 2019.
12. Snyder CF, Wu AW, Miller RS, Jensen RE, Bantug ET, Wolff AC. The role of informatics in promoting patient-centered care. *Cancer J*. 2011 Jul-Aug; 17(4):211-8. doi: 10.1097/PPO.0b013e318225ff89.
  13. Stewart, M., Brown J B, Weston W W, McWhinney I R, McWilliam C L and Freeman T R. Patient-centered medicine – transforming the clinical method. 2nd Edition. Radcliffe Medical Press. ISBN 1 85775 981 8. Published 2003.
  14. Bensing JM, Verhaak PF, van Dulmen AM, Visser AP. Communication: the royal pathway to patient-centered medicine. *Patient Educ Couns*. 2000 Jan; 39(1):1-3. doi: 10.1016/s0738-3991(99)00107-x.
  15. Liu X, Rohrer W, Luo A, Fang Z, He T, Xie W. Doctor-patient communication skills training in mainland China: a systematic review of the literature. *Patient Educ Couns*. 2015; 98(1):3-14. doi: 10.1016/j.pec.2014.09.012.
  16. Mosadeghrad AM. Factors influencing healthcare service quality. *Int J Health Policy Manag*. 2014 Jul 26; 3(2):77-89. doi: 10.15171/ijhpm.2014.65.
  17. Ammenwerth, E., Iller, C. & Mahler, C. IT-adoption and the interaction of task, technology and individuals: a fit framework and a case study. *BMC Med Inform Decis Mak*. 6,3. <https://doi.org/10.1186/1472-6947-6-3>.
  18. Gail Powell-Cope; Audrey L. Nelson; Emily S. Patterson. Patient Safety and Quality: An Evidence-Based Handbook for Nurses. Rockville (MD): Agency for Healthcare Research and Quality (US); Apr 2008. Chapter 50.
  19. Sofaer S, Firminger K. Patient perceptions of the quality of health services. *Annu Rev Public Health*. 2005; 26:513–559. doi:10.1146/annurev.publhealth.25.050503.153958
  20. Osborn R, Squires D, Doty MM, Sarnak DO, Schneider EC. In New Survey Of Eleven Countries, US Adults Still Struggle With Access To And Affordability Of Health Care. *Health Aff (Millwood)*. 2016;35(12):2327–2336. doi:10.1377/hlthaff.2016.1088.
  21. Mosadeghrad AM. Factors Affecting Medical Service Quality. *Iran J Public Health*. 2014 Feb; 43(2):210-20.
  22. Jess White. How communication problems put patients, hospitals in jeopardy. *Healthcare news & insights*, Feb. 17, 2016. Available at: <https://www.healthcarebusinessstech.com/communication-patient-harm>. Date accessed: 21 Feb.2020.
  23. Krupat E, Rosenkranz SL, Yeager CM, Barnard K, Putnam SM, Inui TS. The practice orientations of physicians and patients: the effect of doctor-patient congruence on satisfaction. *Patient Educ Couns*.2000; 39(1):49–59. doi:10.1016/s0738-3991(99)00090-7
  24. Diener E, Emmons RA, Larsen RJ, Griffin S. The satisfaction with life scale. *J Pers Assess*. 1985 Feb; 49(1):71-75.
  25. Warr P, Cook J, Wall T. Scales for the measurement of some work attitudes and aspects of psychological well-being. *J Occup Psychol*. 1979; 52:129-148.
  26. Siegrist J, Starke D, Chandola T, Godin I, Marmot M, Niedhammer I, Peter R. The measurement of effort-reward imbalance at work: European comparisons. *Soc Sci Med*. 2004 Apr; 58(8):1483-1499.
  27. Makoul G, Krupat E, Chang CH. Measuring patient views of physician communication skills: development and testing of the communication assessment tool. *Patient Educ Couns*. 2007 Aug; 67(3):333-342.
  28. Polly Kettley. Is flatter is better? : Delaying the management hierarchy. The Institute of Employment Studies. Microgen UK. 1995, ISBN 1-85184-255-1.
  29. Bragard I, Etienne AM, Merckaert I, Libert Y, Razavi D. Efficacy of a communication and stress management training on medical residents' self-efficacy, stress to communicate and burnout: a randomized controlled study. *J Health Psychol*. 2010; 15(7):1075–1081. doi:10.1177/1359105310361992
  30. Tsugawa Y, Newhouse JP, Zaslavsky AM, Blumenthal DM, Jena AB. Physician age and outcomes in elderly patients in hospital in the US: observational study. *BMJ*. 2017; 357:j1797. Published 2017 May 16. doi:10.1136/bmj.j1797
  31. Komrad MS. A defence of medical paternalism: maximising patients' autonomy. *J Med Ethics*. 1983; 9(1):38–44.
  32. Ha JF, Longnecker N. Doctor-patient communication: a review. *Ochsner J*. Spring; 2010; 10(1): 38-43.
  33. Murgic L, Hébert PC, Sovic S, Pavlekovic G. Paternalism and autonomy: views of patients and providers in a transitional (post-communist) country. *BMC Med Ethics*. 2015; 16(1):65. Published 2015 Sep 29. doi:10.1186/s12910-015-0059-z
  34. *The Principles of Biomedical Ethics* in 1977 by Beauchamp and Childress and its subsequent editions (now in its 7<sup>th</sup> edition). [Oxford University Press](#).
  35. Коммуникативные навыки - предмет преподавания в медицинском вузе (Communicative skills- teaching course in the medical university). 2010. [https://online.zakon.kz/Document/?doc\\_id=31043157](https://online.zakon.kz/Document/?doc_id=31043157). Date Accessed 10 Jan. 2020.

## 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