The Influence of In-Group Membership on Trust in Health-Care Professionals in Kazakhstan

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Abstract
Background: Trust in providers is key to positive health outcomes. However, perceptions of trust in health-care professionals can vary by population. Factors beyond the immediate behaviors of health-care professionals such as group association may influence perceptions of trust. Objective: To examine the possible association of in-group membership and levels of trust in health-care professionals in Kazakhstan. Method: We used an online survey including the General Trust in Physicians scale along with demographic questions and a question regarding family members as health-care professionals. Bivariate analysis was used to compare the mean differences between general levels of trust and sociodemographic characteristics. Then multivariate analysis was conducted to examine the association between having a family member who is a health-care professional and general level of trust in health-care professionals among Kazakhstani citizens. Statistical tests were 2-sided. Results: A total of 497 Kazakhstani participants completed the survey. In adjusted multivariate regression, participants with family members as health-care professionals scored significantly higher on the trust scale (P < .001), and other factors such as language (P < .001) and interaction term of language and education (P < .05) were also shown to be influential in the general level of trust. Conclusion: Further examinations of how group membership influences reported trust levels in health-care professionals in Kazakhstan are warranted. Such studies would be beneficial if trust in health-care professionals is to be understood and improved in order to achieve more desirable health outcomes.

Keywords
trust, cultural characteristics, language, Kazakhstan, health-care professionals

Introduction
There are many positive outcomes when trust is present in the patient–provider relationship. When patients have greater trust in their provider, they have been more comfortable disclosing sensitive information (1), more satisfied with the interaction (2–4), and more adherent to treatments prescribed by their providers (2,5,6). Conversely, patients who report difficulty in disclosing sensitive information to their providers are less likely to be accurately diagnosed (7–9) and adhere to the treatment (2,6). Greater patient trust is also associated with greater persuasiveness of provider communication (5), patient perceptions of improved health status (6), and higher ratings of provider caring (7). The positive outcomes of a trusting relationship with a doctor are significant but understanding what creates trust in health-care providers is not as straightforward, and it may extend beyond provider behavior.

Trust in Health-Care Providers
Trust is characterized as a patients’ confidence in a doctor’s ability to choose the best course of action in a vulnerable situation, to keep a patient’s best interests in mind when choosing the course of treatment (3,10–12). Trust is central to the provider–patient interaction because the situation

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itself is one of vulnerability, where the patient is dependent on the assistance of the provider (4,12,13). Trust or a lack of trust can emerge from this dependence through the provider’s behavior.

Behaviors that contribute to building patient trust include nonverbal cues (10), verbal messages (3,13), and empathy and listening skills (1,2,10,13,14). As a result of trust established through interaction, providers make more accurate diagnoses (9) and persuade patients to address a health concern and change behavior (5).

A patient’s perception of a provider’s medical competence was another requirement for trust (1,11,15,16). Technical excellence in performing medical procedures is not enough for a patient to trust a provider (13). A provider’s effective conveyance of all the nuanced medical language in lay terms promotes patients’ trust (13).

**Beyond Patient–Provider Interactions**

In addition to the factors immediately relevant to the interpersonal interactions between providers and patients that influence trust, there are other factors which contribute to provider behaviors and attitudes which can then influence patient trust. For example, a negative work environment which creates distress among physicians can prevent them from providing quality care (7,17). Additionally, providers that are inundated with time-consuming bureaucratic work lose time and energy on tasks, leaving little left for their patients (7). These work-related factors occur outside the provider–patient interaction but are relevant as they influence provider behavior which then influences patient trust.

Similarly, factors outside of the provider–patient interaction and even outside of work-related factors can influence both provider and patient behavior in health-care settings. At the societal level are norms that govern group membership, and interactions provide the space for these norms to play out. Therefore, in issues of trust and perception, cultural contexts and political histories become relevant in contemporary provider–patient interactions. In societies where social group boundaries often take precedence over individual identities, the salience of such boundaries can greatly influence the regulation of relationships with in-group and out-group members (18). Social group boundaries frequently include race, ethnicity, gender, and age while in some context, boundaries are drawn at even smaller levels to distinguish who belongs and who is familiar and who is not (19–22). Group membership relates to trust (23), and another’s group membership can cue someone to either trust or not trust (24).

**Trust and Health Care in Kazakhstan**

Trust in health-care professionals during Soviet times suffered as doubts about the government’s ability to provide medical services that created feelings of abandonment within the population (25). Many changes have occurred since independence in the early 1990s, with a move toward a primary health-care model that aims to be patient-centered rather than disease-centered (26). However, corruption and informal payments are still prevalent (27,28), and Kazakhstan continues to struggle toward promised universal health coverage (29). Promises made by Kazakhstan’s government of providing health care to all were not reflected in reality as out of pocket costs increased while quality did not (29). Perceptions of low quality were (and continue to be) influenced by long queues, disrespectful attitudes from providers, and the lack of available medicines. Thus, informal payments increasingly became necessary in accessing quality or even low-quality services (30,31).

Research in Western settings indicates a predisposition of general trust in health-care providers (32,33). However, many post-Soviet countries are described as having a general lack of trust, and some evidence suggests that Kazakhstan experiences some of this as well due to these historical influences (25,27,28,30,34). This could be in large part due to continued inequality in access to publicly funded health-care services and perceptions of quality (34).

In addition to historical influences on the perception of health care, contextual influences such as social identities that affect interactions are also relevant. Among Kazakhs, ethnicity and family are very important, having an indirect effect on interpersonal trust in others. This lack of trust includes the belief that others will not try to be helpful if a need presents itself (20). The following research has found contemporary perceptions and preferences that also influence provider–patient interactions. A prioritization of familial support over health literacy in maternity care (35) as well as the salience of ethnic identities in patient responses to provider attempts to encourage health behavior change (36) that indicates the relational aspects of trust as it pertains to in-group belonging. The salience of group boundaries and preference for family networks may add additional influences on trust in providers in Kazakhstan. In order to examine whether having family members as health-care providers in Kazakhstan affected the general level of trust in health-care providers, we tested the following research questions:

**R1:** What is the general level of trust in health-care professionals among Kazakhstani citizens?

**R2:** Do people in Kazakhstan with family members as health-care professionals trust health-care professionals in general more than those without family members in the health-care field?

**Methods**

**Participants**

After receiving approval from ethics committees from research and educational institutions in both the United States and Kazakhstan, we conducted an online questionnaire. Eligible participants were citizens of the Republic of Kazakhstan. We designed a short online questionnaire that asked whether participants had family members who worked in health care and that assessed the general level of trust in health-care providers.
Kazakhstan and at least 18 years of age. After being presented with informed consent information, participants completed structured questionnaires containing basic demographic questions as well as a scale measuring general trust in physicians. Participants were able to complete the questionnaire in either Russian or Kazakh, depending on language preference. We used snowball sampling through an online posting of the questionnaire on social media sites to recruit participants to take the questionnaire and then repost upon completion.

Measures

The questionnaire contained the following variables which were collected by self-report: language (Russian and Kazakh), ethnicity (Russian, Kazakh, and Other), gender, age in years, years of education, and region of residence. For the region of residence, we coded responses as belonging to 1 of the 14 regions in Kazakhstan, including the 4 cities (Almaty, Astana, Baikonur, and Shymkent) not belonging to the surrounding regions. In addition, a question regarding whether the participant has a family member in the health-care professions was included.

The General Trust in Physicians scale is one measure that can be used to assess trust in physicians in general and not a specific provider (37). This scale uses the definition of trust as

…the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party. (p. 712, 38)

Building on this definition of trust, the scale measures general trust (as opposed to interpersonal trust) which focuses on the attitudes toward collective systems or social organizations (39). The scale measures a participant’s general level of trust in physicians by soliciting responses to statements such as “Doctors always use their very best skill and effort on behalf of their patients” or “Doctors in general care about their patients’ health just as much or more as their patients do.” The scale contains 11 statements, and scores range from 11 to 55 with higher scores indicating more trust in doctors generally. Questions requiring recoding were recoded before analysis and summed. The scale was translated into both Russian and Kazakh languages and then back-translated into English by different translators. Any discrepancies were then resolved.

Statistical Analysis

This study hypothesized that participants with family members as health-care professionals would have a higher level of general trust than those without family members in the health-care field. We used descriptive statistics to describe sociodemographic characteristics of eligible participants. Then bivariate analysis was conducted to see the mean differences between groups. Two-sample t test was used for 2 groups (gender, language preference, and whether a person has a doctor-relative or not in the family) and 1-way analysis of variance (ANOVA) was used for multiple groups (ethnicity, residential region, age, and education level). The dependent variable in bivariate analysis was the general level of trust in health-care professionals. If ANOVA showed significant differences, then Tukey simultaneous test was conducted to see the mean differences between a pair of groups. Further, we conducted multiple linear regression analysis to predict the effect of having a family member who is a health-care professional on the general level of trust in health-care professionals after adjusting for language preference, education level, residential region, and age groups. The language preference was recoded as 1 for Kazakh and 0 for Russian, education level was recoded as 1 for graduate level and 0 for otherwise, and having a doctor-related was recoded as 1 for yes and 0 for no. Other variables (region and age) had categorical responses. We also included the interaction term between education level and language preference. All statistical tests were conducted at a 2-sided significance level of 0.05 using R software (version 3.5).

Results

A total of 497 participants completed the online questionnaire, and 490 of them were eligible to participate in our study. Individuals excluded from the study (n = 7) did not meet the citizenship criteria (n = 3) or did not answer the citizenship question (n = 4).

Demographic Characteristics

The sociodemographic characteristics of participants (n = 490) can be seen in Table 1. A majority of the participants were young adults aged either between 18 and 24 (37.6%) or 25 and 34 (43.7%). There were more female participants (69.2%), and more than three-quarters (76.7%) preferred to take the Russian version of the questionnaire.

More than 90% of the individuals were ethnic Kazakhs, whereas ethnic Russians consisted of 6%. Most of the participants had a college degree (65.5%), and the region with the largest percentage of participants (46%) was living in the capital city, Astana. Around half of the participants answered that they have a family member who is a medical professional (51.3%) in their household (Table 1).

Bivariate Analysis

Two-sample t test analysis showed that there was significant population mean differences between those who have family members who are medical professionals and those who do not, and the former had an average of 31.6 score, whereas the latter had a slightly lower score, 28.2 (P value < .001, 95% confidence interval [CI]: 1.93-4.86; Table 2). We also
Table 1. Demographic Characteristics of Eligible Participants in Trust Study (N = 490).

| Question Items                  | n (%)      | Question Items                  | n (%)      |
|---------------------------------|------------|---------------------------------|------------|
| **Age**                         |            | **Residential region**          |            |
| 18 to 24                        | 184 (37.6) | Astana                          | 224 (46.5) |
| 25 to 34                        | 214 (43.7) | Almaaty                         | 106 (22)   |
| 35 to 44                        | 53 (10.8)  | Kyzylorda                        | 74 (15.3)  |
| 45 to 54                        | 30 (6.1)   | Karaganda                        | 14 (2.9)   |
| 55 to 64                        | 9 (1.8)    | Pavlodar                         | 9 (1.9)    |
| Total                           | 490        | Aktoobe                          | 35 (7.3)   |
| **Gender**                      |            | **Other**                       |            |
| Female                          | 339 (69.2) | Total                            | 482        |
| Male                            | 151 (30.8) | Education                        |            |
| total                            | 490        | High school                      | 25 (4.9)   |
| **Language**                    |            | **College degree**               |            |
| Russian                         | 375 (76.7) | Total                            | 489        |
| Kazakh                          | 114 (23.3) | Are any of your family members medical professionals? | | |
| **Ethnicity**                   |            | **Yes**                          | 251 (51.3) |
| Kazakh                          | 443 (90.6) | Total                            | 238 (48.7) |
| Russian                         | 29 (5.9)   | Total                            | 489        |
| Other                           | 17 (3.5)   |                                  |            |
| **Total**                       | 489        |                                  |            |

Table 2. Bivariate Analysis to Compare the Mean Differences Between Groups.

| Variables                      | Mean Scores | P Value  | 95% CI       |
|--------------------------------|-------------|----------|--------------|
| **Language**                   |             | .09      | (−3.62 to 0.32) |
| Russian                        | 29.6        |          |              |
| Kazakh                         | 31.2        |          |              |
| **Doctor-relative**            |             | <.001    | (1.93 to 4.86) |
| Yes                            | 31.6        |          |              |
| No                             | 28.2        |          |              |
| **Gender**                     |             | .91      | (−1.76 to 1.56) |
| Male                           | 30          |          |              |
| Female                         | 29.9        |          |              |
| **Region**                     |             |          |              |
| Aktoobe–Kyzylorda               | 5.94        | .007     | (1.01 to 10.87) |
| Aktoobe–Astana                 | 5.71        | .002     | (1.39 to 10.04) |

Table 3. Multiple Linear Regression Analysis to Predict the Effect of Having a Family Member Who Is a Health-Care Professional on the Estimated Average of General Level of Trust in Health-Care Professionals in Kazakhstan (N = 417).

| Predictors                   | Estimates | 95% CI        | P     |
|------------------------------|-----------|---------------|-------|
| Intercept                    | 28.23     | 26.27 to 30.18 | .001  |
| Age                          | <.001     | 28.27 to 30.18 |       |
| Language (Kazakh)            | 3.87      | 1.73 to 6.01  | .11   |
| Education (graduate degree)  | −0.46     | −2.80 to 1.87 | .696  |
| Region (Astana)              | Reference |             |       |
| Almaty                       | 1.12      | −0.80 to 3.03 | .252  |
| Kyzylorda                    | −0.99     | −3.25 to 1.27 | .39   |
| Karaganda                    | 1.45      | −2.58 to 5.47 | .48   |
| Pavlodar                     | −1.47     | −6.40 to 3.46 | .558  |
| Aktoobe                      | 5.62      | 2.85 to 8.39  | .001  |
| Other                        | 2.51      | −1.45 to 6.47 | .214  |
| Doctor-Relative (Yes)        | 3.78      | 2.33 to 5.22  | .001  |
| Language × Education         | −4.74     | −8.60 to −0.88| .016  |

Abbreviation: CI, confidence interval. Bold values significance p<.05.

*Goodness-of-fit of the model. R²: 0.135 or 13.5% of variation explained by the model. Adjusted R²: 0.112 or 11.2% of variation explained by the model after adjusting for the included predictors.

compared the mean differences between Russian-speaking and Kazakh-speaking groups and their general trust level in health-care professionals. Although Kazakh speakers had a higher average score (31.2) than Russian speakers (29.6), the differences in their mean scores were not statistically significant (P value = .09). Also, there was no statistically significant mean difference between female and male participants and their total trust scores (P value = .91). One-way ANOVA test did not show any statistically significant differences between groups except for the regional differences and the participants’ general trust level in health-care professionals in Kazakhstan (P = .004; data not shown). Furthermore, the Tukey’s simultaneous test revealed that there are significant population mean differences between the Aktoobe region and Astana residents (P = .002, 95% CI: 1.39-10.04) and between the Aktoobe and Kyzylorda regions’ responses (P value = .0073, 95% CI: 1.01-10.87; Table 2).

Multivariate Analysis

After controlling for covariates, respondents who have a doctor-relative had a statistically significant estimated mean trust score that is 3.78 points higher than those respondents who do not have a doctor-relative in their households (P value < .001, 95% CI: 2.33-5.22; Table 3). In addition, Aktoobe residents had statistically significant higher (by 5.62 points) than the Astana residents (P value < .001, 95% CI: 2.85-8.39). Also, Kazakh speakers had an estimated trust score that was 3.87 points higher than Russian speakers (P value < .001, 95% CI: 1.73-6.01). Respondents’ age and education level did not show statistically significant differences from the given reference categories. The interaction term between education level and language preference showed a statistically significant difference between groups as well (P value = .016, 95% CI: −8.60 to −0.88).

Discussion

The clearest finding in this study is that there is a significant difference in general trust in health-care professionals among those with a family member in that profession than
those without. The fact that participants with a family member as a health-care professional on average scored higher on the trust scale indicates that this familial relationship may influence their perception of health-care professionals as a whole. This could be due to this family member being cognitively accessed as a prototypical example when asked about trust in health-care professionals or even because of experience receiving care from this family member. This seems to indicate that having a family member as a health-care professional makes health-care professionals in general more familiar and more trustworthy to these participants, either due to in-group favoritism or experience.

When people view themselves and others as members of different groups, those outside the group are viewed as less trustworthy compared to those within the group (40). Similarly, favoring those in one’s own group has long been observed which causes individuals to hold more positively held views of themselves and their own group and more negative views of those categorized as outside their own group (18). This categorization process does not have to be that meaningful for it to create judgmental effects on the intergroup perceptions of the members (41). It is possible that family relations are influencing the perceptions of the public in Kazakhstan regarding the familiarity and subsequent trustworthiness of health-care professionals, and future research should examine these dynamics.

While general trust scores were not significantly different among Kazakh- and Russian-speaking participants in bivariate analysis, the multivariate analysis revealed a significantly higher average trust score among Kazakh speakers. When language and education level were examined together, it became clear that both Kazakh and Russian speakers had lower trust scores the more education they received. While neither language nor education made a significant difference in trust, speakers of each language were significantly less trusting of health-care professionals in general when they had a graduate-level education compared with those within the same language group of a lower education level. The cultural influence of language on perceptions of norms of interaction as well as education may be relevant and should be examined further in future studies.

Language preference most likely indicates the language of instruction in the participant’s educational experience, but it does not necessarily equate to ethnicity. In Kazakhstan, approximately 63% of the population is ethnically Kazakh while less than 24% is ethnically Russian (42). However, many ethnic Kazakhs speak Russian due to the history of Russian-European presence and sociocultural influence in Kazakhstan, also known as Russification (43). Language preference also indicated a degree of cultural influence as ethnic Kazakhs living in more russels areas took on more culturally Russian behaviors (44). The prevalence of ethnic Kazakhs preferring to use the Russian language is demonstrated by the participants of this study as nearly 77% chose to complete the questionnaire in Russian while less than 6% reported to be ethnically Russian.

The Russification of some Kazakhs may also help explain the significant differences found when comparing participants living in different regions within Kazakhstan. While there were no significant differences between many of the regions, participants living in the region of Aktobe were significantly more trusting of health-care professionals than the regions of Astana in multivariate analysis. A possible explanation could be that the proximity of the region of Aktobe to Russia has caused it to be more russels than other regions in Kazakhstan. In 2017, both Aktobe and Astana cities had 77% ethnic Kazakhs; however, 16% of Aktobe residents were Russians and other ethnic minorities included Ukrainians, Tatars, and Germans. On the other hand, 14% of Astana residents were Russians, and other ethnicities included Ukrainians, Uzbeks, and other Turkic ethnic groups (45). In addition, Aktobe is located in the western part of the country and 1 of the 4 oil-producing regions with the highest gross regional product (46). Multiculturalism and diversity have been found to reduce the effects of categorization salience and in-group bias (47). More ethnic diversity within the region of Aktobe could have led to less group salience when it comes to trust in general which would have an effect in health care as well as other social settings. Other historical and social factors could play a role in this level of trust as well, but taken with the other findings related to group salience and trust, it is likely that the cultural importance of group membership and trust may be related to how culturally homogenous a region is. This does, however, conflict with the finding that the average trust score of Russian speakers overall was lower than Kazakh speakers.

Perhaps the most important finding of this study, among these several variations that could be affecting trust in health-care professionals, is that the total average trust score out of a possible total of 55 for this sample is in the neutral to low range ($M = 29.9, SD = 7.78$) (37,48). However, we should also keep in mind that our regression model explains only 11.2% of the variability in the general trust score, and there might be other social, cultural, and clinical predictors that could influence the participants’ trust level. Hence, while a low level of trust in physicians in a post-Soviet country may not come as a surprise (25,49,50), it is important to recognize other sources of low trust and that they may extend beyond the doctor–patient interaction if efforts are to be made to increase trust. Nevertheless, in social sciences, it is difficult to predict all the variability of the response data, and in our model, we could still find significant results, and variables such as language preference, a specific region, and having a relative who is a health-care professional were associated with the general trust level.

**Limitations**

There are several limitations to this study given that it was a pilot study to explore possible relationships between general levels of trust in health-care professionals and sociocultural
factors. This study was conducted online with participants who had social media accounts and thus excluded participants who are not on social media. These findings should not be generalized to the larger population because of the limits in sample size and representation (age, region, gender, and ethnicity). Furthermore, we cannot make a causal inference due to the observational nature of the study. However, the results do suggest that the low levels of trust in health-care professionals do vary by social group and thus merit further research.

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