RURAL – URBAN DIFFERENCES IN HEALTH CARE QUALITY ASSESSMENT

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ABSTRACT

Aim: To determine the rural–urban differences in primary care practice, hospital inpatient care and total services. Methods: This cross-sectional study used data from Zenica-Doboj Canton in Federation of Bosnia and Herzegovina (FBiH). The overall sample size for the study was 1,995. Individual interviews were conducted in one randomly selected day of the week, except Monday and Friday, on the basis of EUROPEP (European Task Force on Patient Evaluations of General Practice Care) standardized questionnaire. Results: Out of total number (n=1,995), 47.9% was urban population and median of age was 42 years for both populations. The most of urban residents (81.4%) had finished high school or higher education compared with rural residents (58.5%) (p < 0.001). There are significant differences in employment status between rural and urban population (p < 0.001). Rural residents are more likely to travel more than 15 minutes to see their health facilities compared with urban residents (61.7% vs. 24.4%, respectively). Median of distance (kilometers) from residence location to the nearest hospital was statistically significantly higher in rural Me = 8.0 (5.0 do 14.5) km compared to urban population Me = 1.5 (1.0 to 3.0) km (p < 0.001). The rural population was more likely to buy drugs for medical treatment (p < 0.001) and parenteral injections in primary care practice (p < 0.001). Conclusion: There are significant differences in the overall health care assessment of rural populations as compared to urban populations.

Key words: health care system, rural-urban population.

1. INTRODUCTION

The one of the principal reforms of health system in Federation of Bosnia and Herzegovina (FBiH) is focused on strengthening of primary health care and rationalization of hospital care (1). Despite the various methods of classifying what constitutes a rural or urban location, studies continue to find that differences in health and the health care of rural populations and their urban peers are real (2,3,4,5). Rural uninsured rates are higher than urban (6) and the uninsured often have difficulty obtaining needed care (7). The factors with the clearest relationship to satisfaction with health care system include the accessibility of medical care, the organizational structure of clinics, treatment length, perceived competence of physicians, clarity and retention of physicians’ communication to patients, physicians’ affiliative behavior, physicians’ control and patients’ expectations (8). Residents living in rural U.S. counties are more likely to have poorer health outcomes along a variety of measurements that comprise the County Health Rankings’ indexed domains of health quality (9). Clinical Care research indicates that often there is a shortage in resources available to rural residents (10). Studies have shown that rural residents have a higher proportion of preventable hospital stays for acute and chronic conditions (11,12). There are no reliable data dealing with the rural – urban differences within health care system in FBiH, and we aimed our study to determine the rural-urban differences in primary care practice, hospital inpatient care and total services in one canton in FBiH.

2. METHOD

A cross-sectional study was conducted and included all 12 municipalities of Zenica-Doboj Canton. A stratified sample of 146 primary health care practices was recruited. The achieved number of patients was 1,995 (14 per practice). Out of total number (n=1,995), 47.9% was urban population and median of age was 42 years for both populations. The study included patients with recent experience in general practice, aged 18 years or older. Individual interviews were conducted in one randomly selected day of the week, except Monday and Friday. The questionnaire was made on
the basis of EUROPEP standardized questionnaire, related to the patient satisfaction with a health care (13,14,15). A patient satisfaction was rated on a 5 point scale, response categories being poor, fair, good, very good, and excellent. Statistical analysis was performed using the IBM SPSS version 21.0 for Windows system (SPSS Inc., Chicago, Illinois, USA). Data are presented as mean ± standard deviation or as median with interquartile range (IQR, 25th to 75th percentiles) dependent on normality of variables distribution. The Kolmogorov–Smirnov statstic test with a Lilliefors significance level was used for testing normality of distribution. In the case of categorical variables, counts and percentages were reported.

3. RESULTS
The most of urban residents (81.4%) had finished high school or higher education compared to rural residents (58.5%) (p < 0.001). There are significant differences in employment status between rural and urban population (p < 0.001) (Table 1).

<table>
<thead>
<tr>
<th>Residence</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>rural (n=1040)</td>
<td>urban (n=955)</td>
</tr>
<tr>
<td>Patient age (yrs)</td>
<td>42 (30 to 53)</td>
</tr>
<tr>
<td>Male</td>
<td>53.0%</td>
</tr>
<tr>
<td>Level of education</td>
<td>Without education 14.6%</td>
</tr>
<tr>
<td>Elementary school</td>
<td>27.0%</td>
</tr>
<tr>
<td>High school</td>
<td>50.0%</td>
</tr>
<tr>
<td>Higher education</td>
<td>8.5%</td>
</tr>
<tr>
<td>Employment</td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>31.1%</td>
</tr>
<tr>
<td>Unemployed</td>
<td>41.4%</td>
</tr>
<tr>
<td>Student</td>
<td>9.8%</td>
</tr>
<tr>
<td>Retiree</td>
<td>17.7%</td>
</tr>
<tr>
<td>Financial status</td>
<td>Excellent 2.7%</td>
</tr>
<tr>
<td>Good</td>
<td>46.1%</td>
</tr>
<tr>
<td>Fair</td>
<td>17.4%</td>
</tr>
<tr>
<td>Poor</td>
<td>4.3%</td>
</tr>
</tbody>
</table>

Table 1. Socio-demographic characteristics rural and urban population

As Figure 1 demonstrates, rural residents are more likely to travel more than 15 minutes to see their health facilities compared to urban residents (61.7% vs. 24.4%, respectively).

Median of distance (kilometers) from residence location to the nearest hospital was statistically significantly higher in rural (Me = 8.0; IQR= 5.0 to 14.5) km compared to urban population (Me = 1.5; IQR = 1.0 to 3.0) km (p < 0.001) (Figure 1).

Rural residents are more likely to use public transport (26.0% vs. 3.0%), taxi service (9.2% vs. 4.0%) but not walking (23.4% vs. 51.1%) to reach health facilities, compared to urban residents, respectively (p < 0.001). Our results indicate that every fourth patient in rural (25.1%) and urban population (23.2%) waits for admission in doctor’s office less than 15 minutes, for 30.1% of rural and 26.0% of urban population the waiting time is more than an hour. There was not statistically significant differences in waiting time for admission in doctor’s office in primary health care between rural and urban population (p = 0.487).

There was not a statistically significant association be-
sional conduct during the hospital stay (p = 0.805). (Figure 2).

Rural residents are more likely to buy drugs for medical treatment (93.4% vs. 87.2%; χ²=21.940; df=1; p<0.001) and parenteral injections in primary care practice compared to urban residents (54.8% vs. 46.6%, respectively; χ²=12.976; df=1; p<0.001) (Figure 3).

There was not a statistically significant association between residence and: visiting a physician in the last month (χ²=0.674; df=1; p=0.412); if they have health problems in the past 12 months but they did not request medical treatment (χ²=0.401; df=1; p=0.527); ordering for a physical examination (χ²=0.031; df=1; p=0.860), unofficial payments to someone from medical staff (χ²=0.002; df=1; p=0.968).

Urban residents are more satisfied with Primary Health Care Center (p = 0.001), Ambulatory Health Care (p < 0.001) and Specialist Services (p = 0.022) compared to rural residents (Figure 4).

Figure 4. Rural – urban differences in patient’s satisfaction with: Q1 – Primary Health Care Center; Q2 – The General Hospital in Tesanj; Q3 – The Cantonal Hospital in Zenica; Q4 – Ambulatory Health Care; Q5 – Specialist Services (NS p > 0.05; * p < 0.05; ** p < 0.01; *** p < 0.001).

4. DISCUSSION

This study compared urban and rural populations in Zenica-Doboj Canton in FBiH about Health Care Quality Assessment. Rural residents in Zenica-Doboj Canton usually travel long distance from the village to Ambulatory Health Care or higher level hospitals to deal with complicated situations and to receive better services. The study of Timothy J. Anderson et al., argued that residents living in rural U.S. counties have statistically significantly (p ≤0.05) lower scores in such areas as health behavior, morbidity factors, clinical care, and the physical environment (9). In our study, rural residents are more likely to use public transport and cab service to reach health facilities, and more likely to buy drugs for medical treatment and parenteral injections in primary care practice which suggests that rural populations spent more on travelling and medication. In the study of Farmer J et al., Satisfaction with local doctors and hospital services was higher in rural locations (16). In the study of Zhihua Yan et al, rural patients were generally more satisfied with healthcare service compared to urban and suburban residents, also (17). In our study, urban residents are more satisfied with Primary Health Care Center, Ambulatory Health Care and Specialist Services compared to rural residents. These findings could be explained by that urban population have a grater possibility of health care professionals’ choice.

5. CONCLUSION

Our results indicate that there are significant differences in the overall health care assessment of rural populations compared to urban populations. We believe public health professionals and policy makers in the FBiH must continue to consider these differences and to identify essential elements in the improvement of health status in rural areas when implementing programs addressing the needs of a geographically diverse population. Our results cannot be representative for the planning of public health policy but can certainly point out to weaknesses of health system and contribute its reform in FBiH.

CONFLICT OF INTEREST: NONE DECLARED.

REFERENCES