

The Effects of Underbudgeting of Public Hospitals on the Level of Out-of-Pocket Expenditures, Socio-Economic Impact and Patient Satisfaction on Hospital Services

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Abstract

The public spending on health has a large impact on patient satisfaction simply because health services are perceived to be provided free of charge by the state. By introducing of new health law in 2012, Kosovo Ministry of Health aimed to the reform entire health sector including reform of financing of the health sector. This research has been conducted in different units of General Hospital of Gjilan/ Kosovo. A questionnaire consisting of 30 questions has been applied aiming to analyze several aspects including patient demographic data, length of health worker daily activities with patients and availability of services, general satisfaction with medical service and medical care, technical quality, communication, general patient satisfaction of hospital hygiene, out-of-pocket payments and the nature of this expenditure. All respondents have given high grades to the physicians and to the nurses; there were no significant differences in the perception of the quality of hospital services from the perspective of all four analyzed constants. Results have proven a significant negative correlation between out-of-pocket expenditures and financial and patients' social burden. The results of our research have demonstrated that the patient satisfaction with hospital services provided were correlated to several factors including physicians and nurses' engagements with patients, access to the hospital facilities, the effectiveness of hospital administration, technical services, and hospital environment as are ward conditions, hygiene, and patient privacy. The study has emphasized the main key to solving hospital shortages is adequate and sustainable budgeting. Current level of public financing is not covering all hospital needs and is also related to a low level of GDP for health.

Keywords: *Patient, satisfaction, service, hospital*

1. Introduction

The rapid growth of total health expenditure has become a topic of major concern in most of the developing countries¹. A study shows that a large amount of funds was exchanged between the households and health care services, while the out-of-pocket money spending in parallel with governing expenditures to buy the health services has become a burning concern, especially for the third world countries². It has been proven by many studies that extra individual expenditures on health can lead to a catastrophic effect on the financial status of the

people, especially that of the poor people. Moreover, many factors such as income, education, taxation, social security, and user fees depend on health expenditure³. Patients are usually dissatisfied with the out-of-pocket payments they are required to make informally to physicians for treatment, including PHC services, or to “jump” queues in overloaded hospitals⁴. A study in the region confirmed expectations for deterioration of access to and provision of healthcare services, increasing out-of-pocket contributions, and growing monitoring and efficiency issues⁵. The public spending on health has a large impact on patient satisfaction simply because health services are perceived to be provided free of charge by the state. The latter is more important for countries which are less wealthy. The negative relation between private health spending and patient satisfaction seems reasonable if one takes into consideration that citizens of all countries, although contribute to public health expenditures through taxation, they pay out of their pockets to receive (better) private healthcare when public healthcare fails⁶. Nine factors determine the healthcare services: technical care, interpersonal care, physical environment, accessibility, availability, financial resources, organizational characteristics, continuity of treatment, and care result. Research that examined the physical environment in relation to patient satisfaction ratings on social media discovered that environmental variables such as parking, cleanliness, and waiting rooms contributed to patient satisfaction². Patient characteristics such as age, gender, education, socioeconomic status, marital status, race, religion, geographic characteristics, frequency of visits, length of stay, health status, personality, and expectations were all investigated to ascertain their associations with patient satisfaction⁷.

By introducing of new health law in 2012, Kosovo Ministry of Health aimed to the reform entire health sector including reform of financing of the health sector. However, Kosovo Government finances the health sector with only 4.1% of GDP, a level that does not cover all sectorial needs⁸. Through a new organization called Kosovo Hospital and University Clinical Service, all hospital services have been centralized, this centralization has made operation of hospitals more complicated and has limited the decision-making power of hospital managers^{8,9}.

The aim of this study is an assessment of patient satisfaction with provided hospital services, the level of out-of-pocket expenditures, the nature of these expenditures, and the impacts of these expenditure on socioeconomic status of patients.

2. Materials and methods

This research has been conducted in different units of General Hospital of Gjilan/ Kosovo. A questionnaire consisting of 30 questions has been applied aiming to analyze several aspects including patient demographic data, length of health worker daily activities with patients and availability of services, general satisfaction with medical service and medical care, technical quality, communication, general patient satisfaction of hospital hygiene, out-of-pocket payments and the nature of this expenditure. Each variable has been measured by asking respondents to rate their overall satisfaction with the quality of services rendered in the hospitals using grades from 0-10 and a five-point Likert scale: very satisfied (1), satisfied (2), not enough satisfied (3), dissatisfied (4), very dissatisfied (5). A total of 130 respondents were involved in the research. The structure of the research sample was as follows: gender—male/female: 49/81 (37.7% / 62.3%); age: under 20 y/o: 5(3.8%), 20-30 y/o: 28 (21.5%), 31-49 y/o: 45 (34.6%), 50-65 y/o: 26 (20%) and above 65 y/o: 26 (20%); education level: primary to secondary school: 100 (76.9%), university: 30 (23.1%); civil status: unmarried: 26 (20%), married 90 (69.2%), separated and widowed: 14 (10.7%); employment/ social status: unemployed 61 (46.9%), employed 38 (29.2%), retired: 22 (16.9%), and dependent on social assistance: 9 (6.9%); monthly income: zero incomes 57 (43.8%), less than 150€: 37 (28.5%),

150-250€: 11 (8.5%), 250-400€: 16 (12.3%), 400-600€: 8 (6.2%) and above 600€: 1 (0.8%);
 The collected data are analyzed by SPSS 26.

3. Results

As is shown in Table nr. 1, for the analysis of patient satisfaction has been taken in consideration four independent variables: gender, age, employment status, and monthly incomes, and eleven dependent variables, all representing different factors with considerable effect on patient satisfaction regarding perceived quality of received hospital services. Though all respondents have given high grades to the physicians (8.4) and the nurses (8.8), however there were no significant differences in the perception of the quality of hospital services from the perspective of all four analyzed constants. Main patient dissatisfactions regarding the quality of services were related to hospital technical conditions, easiness of access, perceived efficacy of hospital administration, overall hygiene and patient privacy.

Table 1: Employment status/Monthly incomes/ Gender/ Age/ Satisfaction factors

| Table nr. 1: Employment status/Monthly incomes/ Gender/ Age/ Satisfaction factors. | Employment status | | | Monthly incomes | | | Gender | | | Age | | |
|--|-------------------|----|------|-----------------|----|------|----------------|----|------|----------------|----|------|
| | x ² | df | sig | x ² | df | sig | x ² | df | sig | x ² | df | sig |
| Average grades given by patients to doctors services! (8.4). | 38.887 | 24 | .028 | 67.22 | 40 | .004 | 5.896 | 8 | .662 | 29.795 | 32 | .579 |
| Average grades given by patients to nurse services! (8.8). | 42.17 | 27 | .032 | 23.275 | 45 | .997 | 8.66 | 8 | .469 | 24.389 | 36 | .929 |
| Length of doctor's activities with hospital inpatients, within a day! | 27.647 | 21 | .15 | 41.997 | 35 | .194 | 4.479 | 7 | .723 | 30.685 | 28 | .331 |
| Perceived quality of advice given by ward doctor. | 18.557 | 12 | .101 | 9.757 | 20 | .972 | 4.737 | 4 | .388 | 23.254 | 16 | .107 |
| Perceived quality of advice given by ward nurse. | 23.184 | 12 | .026 | 14.856 | 20 | .787 | 1.322 | 4 | .988 | 11.936 | 16 | .748 |
| Overall work conditions of hospital units. | 15.796 | 12 | .201 | 18.596 | 20 | .525 | 4.534 | 4 | .339 | 21.354 | 16 | .165 |
| Easiness of access to all hospital facilities. | 7.147 | 12 | .846 | 5.983 | 20 | .999 | 6.581 | 4 | .16 | 11.828 | 16 | .765 |
| Perceived efficacy of hospital administration services! | 21.231 | 12 | .007 | 19.541 | 20 | .486 | 3.695 | 4 | .449 | 6.749 | 16 | .977 |
| Perceived level of hygiene in the wards! | 23.084 | 12 | .631 | 17.344 | 20 | .631 | 1.259 | 4 | .868 | 15.02 | 16 | .523 |
| Perceived level of hygiene in the ward toilets! | 18.063 | 12 | .114 | 24.044 | 20 | .24 | 2.017 | 4 | .733 | 11.084 | 16 | .804 |

| | | | | | | | | | | | | |
|--|-------|----|------|--------|----|-----|-------|---|------|--------|----|------|
| Perceived level of privacy in the ward and ward toilets! | 8.688 | 12 | .727 | 22.973 | 20 | .29 | 3.314 | 4 | .989 | 17.276 | 16 | .356 |
|--|-------|----|------|--------|----|-----|-------|---|------|--------|----|------|

Our results have confirmed significant correlation between the daily engagements of physicians ($r = .698$; $p = .000$) and nurses ($r = .554$; $p = .000$) with hospital patients and patient satisfaction with hospital services. Also, a significant correlation has been found between patient satisfaction with the received services and overall hygiene of hospital facilities ($r = .621$; $p = .000$), patient privacy ($r = .485$; $p = .000$), and the perceived efficacy of hospital administration services ($r = .446$; $p = .000$).

This study confirmed that the improvement of eight factors directly related to health providers' engagements with hospital patients will significantly raise satisfaction for 61.4% of all hospital patients and the improvements of hospital overall technical and environmental conditions will raise patient satisfaction for 64.1%! (Table nr. 2)

Table 2: Service assessment

| Table nr. 2: Service assessment | Subject of assessment | Correlation | | Regression | | | | |
|--|---|-------------|------|------------|-------|--------|------|----|
| | | r= | sig. | β | R^2 | F | sig. | df |
| Factors that affect patient perception regarding quality of hospital services! | Doctors' services and the average grade is given by patients (8.4). | .698 | .000 | .516 | .614 | 10.482 | .000 | 17 |
| | Nursing services and average grade is given by patients (8.8). | .554 | .000 | | | | | |
| | The length of time spent by doctors with patients. | .205 | .000 | | | | | |
| | The quality of advice given by ward doctors. | .303 | .000 | | | | | |
| | The quality of advice given by ward nurses. | .367 | .000 | | | | | |
| | Overall work conditions of hospital units. | .39 | .000 | | | | | |
| | Easiness of access to all hospital facilities. | .205 | .000 | | | | | |
| | The level of patient satisfaction with the hospital administration! | .446 | .000 | | | | | |
| Factors that affect patient | Level of hygiene in the hospital wards! | .435 | .000 | .434 | .641 | 10.605 | .002 | 17 |

| | | | | | | | | |
|--|--|------|------|--|--|--|--|--|
| satisfaction in relation to hospital environmental conditions! | Level of hygiene in the ward toilets! | .621 | .000 | | | | | |
| | The level of privacy in the wards and toilets! | .485 | .000 | | | | | |

Third factor with a strong effect on patient satisfaction with hospital services was related to out-of-pocket expenditures for medicines, other materials, and diagnostic procedures that are supposed to be provided by hospital. However, due to budget shortages, patients were obliged to ensure themselves of these materials, either from private pharmacies or private clinics.

An analysis of socio-economic status shows that from 130 respondents, 61 (46.9%) were unemployed and had declared zero monthly incomes, while 57 of 61 unemployed and with no incomes have spent in average 140 € for drugs and other materials and 4 of 61 have spent in average 150 € for different diagnostic procedures. The second vulnerable category of involved respondents were these dependent on state social support with monthly incomes less than 150 €/monthly, from which 6 of 9 have spent an average 140 € for medicines and other materials and 3 of 6 have spent in an average 150 € for different diagnostic procedures. The third vulnerable category of involved respondents were patients in retirement with average monthly incomes between 150-250 € monthly, 20 of 22 of them have spent an average 90 € for drugs and other materials and 2 of 22 have spent in average 88 € for the diagnostic procedures. On average from all categories, 115 (88.5%) of respondents have spent 130.7 € for drugs and other materials and 15 (11.5%) have spent 138.2 € for different diagnostic procedures that were supposed to be offered by hospital. If we compare average wage of Kosovo⁸ of 512 € for 2022 to employment status and monthly incomes of respondents, results that about 70.1% of total hospital patients involved in this study are living in poverty or in line of poverty! (Table nr. 3)

Table 3: Nature and the level of out-of-pocket expenditures

| Table no. 3: Nature and the level of out-of-pocket expenditures. | | | |
|--|---|---|----------|
| Employment status/ Nature and the level of expenditures. | For drugs and other materials/ Average of expenditures in €. | For diagnostic procedures/ Average of expenditures in €. | Total/ % |
| Unemployed | 57/140 | 4/150 | 61/ 46.9 |
| Employed | 32/138 | 6/140 | 38/ 29.3 |
| Retired | 20/90 | 2/88 | 22/ 16.9 |
| Dependent on social support | 6/140 | 3/150 | 9/ 6.9 |
| Total/ Average | 115/ 130.7 | 15/138.2 | 130 |

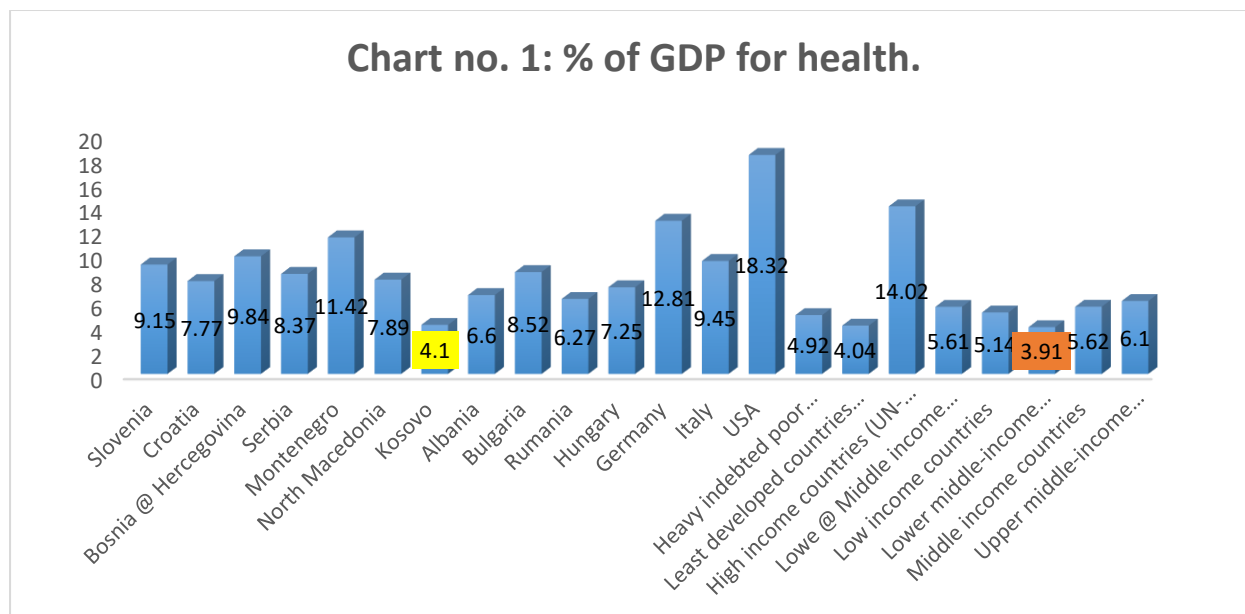
Table nr. 4 presents the effects of out-of-pocket expenditures on the socio-economic burden of patients for the services that should have been provided by hospital! Results have proven a significant negative correlation between out-of-pocket expenditures and financial ($r=-.791$; $p=.000$) and patients' social burden ($r= -.745$; $p=.000$). Based on these results, out of pocket

expenditures have significantly worsened patient socio-economic conditions, especially to these with no incomes or with low incomes (less than 250 €/ month)! Results of regression analysis show that a better supply of hospital with all needed materials, including drugs, diagnostic technology, improvement of technical and environmental conditions, and continual provision of services would increase patient satisfaction by 62-68% and would lower significantly patient socio-economic burden! (Table nr. 4)

Table 4: Effects of out-of-pocket payments for hospital services on patient socioeconomic burden

| Table nr. 4: Effects of out-of-pocket payments for hospital services on patient socioeconomic burden | | x ² | df | r | β | R ² | F | sig. |
|--|-------------------|----------------|----|-------|-------|----------------|--------|------|
| Effects on the financial burden | Employment status | 101.696 | 9 | -.26 | 2.669 | .681 | 9.37 | .000 |
| | Monthly incomes | 158.472 | 15 | -.791 | 2.813 | .629 | 8.48 | .000 |
| Effects on social burden | Employment status | 85.498 | 9 | -.249 | 4.606 | .626 | 214.15 | .000 |
| | Monthly incomes | 132.49 | 15 | -.745 | 5.166 | .556 | 16.13 | .000 |

Last 10 years, Kosovo government has covered health sector with 3.6-4.1% of GDP, the lowest level of financing compared to region countries like Albania (6.6%), North Macedonia (7.89%), Croatia (7.77), and Slovenia (9.15%). Kosovo budget for health is at a similar level to lower middle-income countries (3.91%) and heavy-indebted poor countries (UN classification)⁹. (Chapter nr. 1)



4. Discussions

Patient satisfaction is the most important indicator of quality of care and is considered an outcome of healthcare services^{10, 11}. In today's patient-oriented healthcare, the quality of care

received is a major component of the hospital quality management system. Patients need their problems diagnosed and treated properly, their function restored, and/or symptoms relieved¹².

Based on our research results, involved patients have been satisfied with physicians and nurses' care, they have vaulted them with grades between 8.4 and 8.8 for their services and there were no significant changes in perceived quality of services for all four analyzed components: age, gender, employment status, and individual monthly incomes. Evidence confirms that patients who are more satisfied with their care are more likely to follow medically prescribed regimens thus contributing to the positive influence on health¹³.

The results of our research have demonstrated that patient satisfaction with hospital services provided were correlated to several factors including physicians' and nurses' engagements with patients, ($\beta=.516$), access to the hospital facilities, effectiveness of hospital administration, technical services and hospital environment as are ward conditions, hygiene and patient privacy ($\beta=.434$).

In general, Ministry of Finance of a country allocates a considerable portion of the budget for health expenditure in a fiscal year. This allocated budget has been reported in different studies as unequal for the developed and developing countries¹⁴. Several studies have documented that health services and health expenditures are determined by the level of GDP divided by health sector¹⁵. Though the scale of total investment in healthcare should be as large as the countries can afford because of the population aging and non-communicable diseases increase alongside treatment innovations in medicine and pharmaceutical development¹⁶, however, there is quite a difference between developed and undeveloped countries regarding investments in health. Patients habitant of high-income countries have a probability of being satisfied with the country's health system about 3400 times higher compared to patients' satisfaction from low-income countries¹⁷. Last 10 years, Kosovo government has covered health sector with 3.6-4.1% of GDP, which is the lowest level compared to region countries. Due to insufficient budgets, hospitals often face difficulties in supplying medicine and other materials and have low investments in health technologies, factors that have had a direct impact on patient satisfaction with provided hospital services. This study has confirmed that due to hospitals insufficient supplies of medicines and other materials, often patients had to ensure different medicines and also perform different diagnostic procedures in the private sector. All this has led patients to extra out-of-pocket expenditures and having in mind social status, level of employment, and level of monthly income, extra out-of-pocket expenditures have presented a heavy financial and social burden for all patients ($\beta=.466$). Based on results, during hospital treatment, patients have spent on average 130.7 € for medicines and other materials and 138.2 € for diagnostic procedures. Adding to this the fact that 70.1% of our patients live in poverty or the line of poverty, this socio-economic burden should rise serious concern of the Ministry of Health authorities. A study in region has confirmed patient's dissatisfaction when they have had out-of-pocket expenditures for any health service and these expenditures have been estimated to cover more than 20% of the total private expenditures¹⁸.

The results of our research provide valuable information for policymaking and for national health plan developers who need information on the quality of health care provided, the reasons for patient dissatisfaction, and how to eliminate them. Knowledge of this information is also necessary for solving the issues related direct effects of insufficient budget on quality of health services and the satisfaction of patients with provided services.

5. Conclusions

There is broad consensus that improving patients' experience as they obtain healthcare is an intrinsically desirable goal. Some elements of that improved experience are likely to be universal: patients value short waiting times and clean facilities, and they appreciate providers who respond to their needs and treat them with respect¹⁹. Our patients involved in this study have been satisfied with services offered by physicians and nurses, but there's a lot of space for improvement of hospital technical and environmental conditions especially in regards to hospital supply with medicaments and other materials and as well as diagnostic technologies. Also, studies have emphasized the main key to solving hospital shortages is adequate and sustainable budgeting. Because, it is proven that as more satisfied patients are, more liable to recommend the hospital to family and friends²⁰.

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