

Assessment of health services in East Jerusalem: A cross-sectional study

Doğu Kudüs'teki sağlık hizmetlerinin değerlendirilmesi: Kesitsel bir çalışma

Abstract

Aim: This study aims to evaluate healthcare service delivery and population indicators in East Jerusalem (EJ) for use in health planning, evaluation, and decision-making at both institutional and policy levels.

Methods: A mixed-methods approach was adopted. The quantitative component involved a household survey that assessed health conditions and healthcare utilization across 3,747 households, covering 16,433 individuals. The qualitative component included semi-structured interviews with healthcare institution managers.

Results: Among children, respiratory illnesses (0.50%) and cardiovascular diseases (0.30%) were the most common. In adults, diabetes (4.32%) and cardiovascular diseases, including hypertension (2.84%), were prevalent. The five hospitals in EJ, with a total of 651 beds, serve residents of EJ, the West Bank, and Gaza. In 2018, EJ hospitals treated over 80,000 inpatients and 240,000 outpatients. The Palestinian Ministry of Health referred 43,256 cases to EJ hospitals, accounting for 40% of all external referrals. Smoking prevalence among adults over 18 was 29.0%. Rehabilitation services were available in 55% of health centers, but mental health services were limited. Around 63% of patients expressed satisfaction with healthcare services, though language barriers and long wait times were issues when referred to Israeli hospitals.

Conclusions: EJ hospitals operate near capacity, providing essential tertiary healthcare services and managing substantial referrals from the West Bank and Gaza. Key challenges include long waiting times, high competition among healthcare centers, and shortages in mental health, physiotherapy, and rehabilitation staff. Drug use, particularly in Shu'fat, is a significant social issue. Although patient satisfaction is high, Israeli hospitals are often preferred due to their advanced technologies. There is a clear need to invest in local healthcare centers, improve service quality, and increase specialized care availability, particularly in diagnostics, rehabilitation, and mental health services.

Keywords: Child health services; health services; health services accessibility; quality of health care

Öz

Amaç: Bu çalışma, Doğu Kudüs'te (DK) sağlık hizmetlerinin sunumu ve nüfus göstergelerini değerlendirmeyi amaçlamakta olup, sağlık planlaması, değerlendirilmesi ve karar alma süreçlerinde hem kurumsal hem de politika düzeyinde kullanılabilir.

Yöntemler: Mix yöntem yaklaşımı benimsenmiştir. Nicel bileşen, sağlık koşulları ve sağlık hizmetleri kullanımını değerlendiren bir hane halkı anketini içermektedir; bu anket, 3.747 hane halkı ve 16.433 bireyi kapsamıştır. Nitel bileşen ise, sağlık kurumları yöneticileriyle yapılan yarı yapılandırılmış görüşmeleri içermektedir.

Bulgular: Çocuklar arasında en sık görülen hastalıklar solunum hastalıkları (%0,50) ve kardiyovasküler hastalıklardır (%0,30). Yetişkinlerde ise diyabet (%4,32) ve hipertansiyon dâhil kardiyovasküler hastalıklar (%2,84) yaygındır. Doğu Kudüs'teki beş hastane, toplamda 651 yatak kapasitesiyle DK, Batı Şeria ve Gazze'deki hastalara hizmet vermektedir. 2018 yılında bu hastanelerde 80.000'den fazla yatan hasta ve 240.000 ayakta hasta tedavi edilmiştir. Filistin Sağlık Bakanlığı aynı yıl 43.256 vakayı DK hastanelerine sevk etmiş olup, bu rakam dış sevklerin %40'ına tekabül etmektedir. Sigara kullanımı 18 yaş üstü yetişkinler arasında %29,0 olarak belirlenmiştir. Rehabilitasyon hizmetleri sağlık merkezlerinin %55'inde mevcutken ruh sağlığı hizmetleri sınırlıdır. Hastaların yaklaşık %63'ü sağlık hizmetlerinden memnuniyetini belirtmiş, ancak İsrail hastanelerine sevklerde dil engelleri ve uzun bekleme süreleri gibi sorunlar dile getirilmiştir.

Sonuçlar: DK hastaneleri, Batı Şeria ve Gazze'den gelen önemli sevklerle tam kapasiteye yakın çalışarak temel üçüncü basamak sağlık hizmetleri sunmaktadır. Ancak uzun bekleme süreleri, sağlık merkezleri arasındaki yüksek rekabet ve ruh sağlığı, fizyoterapi ve rehabilitasyon alanlarında personel yetersizliği gibi zorluklar bulunmaktadır. Özellikle Shu'fat bölgesinde uyuturucu kullanımı ciddi bir sosyal sorundur. Hasta memnuniyeti yüksek olmakla birlikte, ileri teknoloji ve profesyonellik açısından İsrail hastaneleri tercih edilmektedir. Yerel sağlık merkezlerine yatırım yapılması, hizmet kalitesinin artırılması ve teşhis, rehabilitasyon ve ruh sağlığı gibi alanlarda uzmanlaşmış bakım hizmetlerinin artırılmasına yönelik belirgin bir ihtiyaç vardır.

Anahtar Sözcükler: Çocuk sağlık servisleri; sağlık hizmetleri; sağlık hizmetlerine ulaşılabilirlik; sağlık hizmeti kalitesi

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INTRODUCTION

Following the occupation of the West Bank and Jerusalem in 1967, Israel incorporated East Jerusalem (EJ) into its administrative framework, resulting in a different legal status for its residents compared to Palestinians in the West Bank and Gaza. Since the early 2000s, EJ has been further physically separated from the rest of the West Bank by the construction of the separation barrier. As of 2017, the Palestinian population in EJ was estimated at 435,753, experiencing higher population density and growth rates compared to the rest of Palestine (1).

Health services in EJ play a crucial role within the Palestinian healthcare system, delivering essential services to both the local population and those in the West Bank and Gaza Strip. The healthcare system in EJ is a complex tapestry woven from multiple providers, including Palestinian non-governmental organizations (NGOs), Israeli Sick Funds, and The United Nations Relief and Works Agency (UNRWA) (2). The system comprises hospitals that provide tertiary care and primary healthcare centers offering general medical services, obstetric care, and mental health services. Tertiary hospital services in EJ are a significant component of the Palestinian healthcare system, demonstrating substantial development in specialty care and adhering to recognized quality standards. In 2018, more than 300,000 visits were reported to outpatient and emergency departments, with the majority of inpatient services provided to patients referred from the West Bank and Gaza Strip (approximately 38,000 referrals in 2018). Generally, EJ hospitals operate at high capacity, achieving a bed occupancy rate of 90%. The one to two weeks of waiting times for inpatient services indicates a pressing need for additional beds in primary hospitals such as Makassed, Augusta Victoria, and St. Joseph.

While infant mortality rates are lower in EJ (5.7 per 1,000 live births) compared to the rest of Palestine (18 per 1,000), a notable percentage of infants are born with low birth weight (9.3%) (5). The total fertility rate in EJ is 3.13 births per woman, accompanied by a high birth rate and a relatively low mortality rate. However, access to modern contraceptive methods remains limited (6). Additionally, diabetes and hypertension are prevalent, with 5.6% and 5.4% of the

population receiving treatment for these conditions, respectively (1). The disability rate in EJ is lower than in other Palestinian territories (1.4% in 2011), with mobility disabilities being the most common type (7). Drug addiction poses a significant social and health issue, impacting a substantial percentage of Palestinian households in EJ. Data from the Palestinian Central Bureau of Statistics (PCBS) Jerusalem social survey in 2013 indicates that approximately 59.4% of Palestinian households in Jerusalem believe that there is a drug addict in their environment, a figure that rises to about 63.2% in J1 localities (1).

These complexities underscore the urgent need for a comprehensive and equitable healthcare system that effectively meets the diverse needs of all residents in EJ. The goal of this study is to assess the provision of health services in EJ, evaluate health indicators, and identify the challenges confronting healthcare institutions.

METHODS

Study design

This cross-sectional study employed a mixed-methods approach to gather quantitative and qualitative data. The household survey was designed to assess health conditions, healthcare utilization, and patient satisfaction. Additionally, semi-structured interviews were conducted with managers of healthcare institutions to explore the challenges and needs of the healthcare system in EJ.

Study setting and sample

The study involved multiple components, including a household survey, a survey for healthcare institutions, and a patient satisfaction survey. For the household survey, a total of 3,747 households were selected across 15 residential neighborhoods in EJ, covering 16,433 individuals. This sample size was designed to generate the required statistical insights into the population's health status and service utilization.

In the healthcare institutions (hospital, healthcare centers, psychological and counseling centers, rehabilitation and physiotherapy) survey, all hospitals in EJ were included, alongside a convenient sample of ambulatory care centers from the northern, central, and southern regions of the city.

For the patient satisfaction survey, a convenience sample of 330 patients who attended the targeted healthcare institutions during August-September 2019 was selected. Six distinct questionnaires were used for data collection, each tailored to different aspects of the study.

Outcomes

Primary outcomes: The primary outcomes of the study included health conditions (e.g., prevalence of chronic diseases), healthcare utilization (e.g., frequency of healthcare visits), and patient satisfaction levels with the services received.

Secondary outcomes: Secondary outcomes encompassed insights into the challenges faced by healthcare institutions, accessibility of services, and barriers to care experienced by residents.

Data analysis

A quantitative design was utilized to assess health conditions, services provided by hospitals in EJ, outpatient treatment, rehabilitation, and mental health services. In addition to that, a qualitative design was used to complement data collection and to understand the views of providers about provided services and needs.

In this study, a power analysis was conducted to determine the sample size using the G*Power Statistical Program version 3.1.9.4 (Universität Düsseldorf, Germany). The analysis was performed with 80% power and a 0.05 significance level to calculate the minimum sample size required to ensure reliable results.

Quantitative data were analyzed using SPSS version 18. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were calculated. Qualitative data were analyzed using thematic content analysis to identify major themes related to healthcare service provision and institutional challenges

Ethical approval

Permission to conduct the study was granted by the Union of Charitable Societies for all selected healthcare institutions. Participants in the household surveys and interviews were informed about the study's purpose and assured of confidentiality. Verbal consent was obtained from all participants, including administrators, managers, and patients, prior to data collection.

Limitations

While this study provides important insights into healthcare delivery in East Jerusalem, it has certain limitations. First, the cross-sectional nature of the research restricts the ability to establish cause-and-effect relationships between health conditions and healthcare utilization. Additionally, data were collected during a specific period, preventing the observation of long-term changes or seasonal variations.

The sampling design, which predominantly focused on urban populations, may also limit the representation of healthcare experiences in rural areas. Lastly, political tensions between Israeli and Palestinian regions have led to constraints in healthcare access and service quality, potentially impacting the comprehensive interpretation of findings. Despite these limitations, this study offers valuable information regarding the current state of healthcare services in East Jerusalem and provides important insights for health planning and policy development.

RESULTS

The average age of the patients was 36.4 years (with a standard deviation of 14.2). 42% of the patients were between the ages of 18-30, 52% were between the ages of 31-64, and 5% were between the ages of 65-102. The percentage of females is higher because Red Crescent Maternity Hospital and center customers are females.

The principal findings regarding various health conditions, services provided by hospitals in East Jerusalem (EJ), outpatient treatment, rehabilitation, mental health services, and patient satisfaction are summarized (Table 1).

Health conditions

Among the surveyed population in EJ, approximately 10% of participants reported having pre-existing health conditions. In the pediatric cohort, the most frequently reported conditions included pulmonary diseases (0.50%) and cardiovascular diseases (0.30%). In contrast, diabetes emerged as the predominant health condition among adults, affecting 4.32% of respondents, followed closely by cardiovascular diseases and hypertension, each affecting 2.84% of the adult population. Notably, residents of the Old City reported

Table 1. Summary of key findings

Categories	Brief information (n= 16,433)
Health Conditions	Smoking prevalence is 29.0% among adults and 1.4% among children, with the highest rates in Sur Bahir (33.8%). Disabilities affect 1.5% of the population, mostly mobility impairments (0.7%), with the highest rate in Kafr Aqab (3.9%). Health insurance coverage is 97.7%, mostly Israeli insurance (96.8%). Drug abuse is identified as a common issue by 89.24% of respondents, particularly in Shu'fat (99.4%).
East Jerusalem Hospital Services	IT adoption is limited, with inconsistent use of electronic health records. The hospitals have 651 beds, and in 2018 treated 80,717 inpatients, 240,000 outpatients, and 58,530 emergency cases, with 43,256 referrals from the West Bank and Gaza. Jerusalemites made up 24% of inpatients and 64.8% of outpatients. Waiting times for surgeries are around two weeks, and emergency care is typically provided within one hour. Radiology services are available but limited by resources, and 2,203 personnel are employed, mostly full-time.
Ambulatory Health Care Services	There are 20 health centers spread across the city, operating six days a week. Patient volume varies from 40 to 300 daily, with services including general medicine, gynecology, and emergency care. Specialized services like orthopedics are offered in some centers, but only 40% provide psychiatric care. IT use is minimal, and staff shortages are common, with 633 personnel. 85% of health centers refer patients to hospitals, mostly Israeli. Challenges include long waiting times and resource competition.
Rehabilitation & Physiotherapy	Four centers were surveyed, treating neurological, orthopedic, and cardiopulmonary cases. Services include physical, occupational, speech therapy, and hydrotherapy. Staffing is limited, with 39 personnel, mostly full-time. The centers face financial constraints, insufficient session allocations, and long approval times. Licensing and quality management are inconsistent. Future plans include expanding autism care and improving infrastructure.
Mental Health Services	Four mental health centers were surveyed, offering psychological counseling, therapy, and health promotion services. There are 226 personnel, but only 27% are full-time, leading to staffing issues. Challenges include stigma, lack of Arabic-speaking professionals, and resource limitations. Future plans involve expanding services, including trauma therapy, and increasing awareness to reduce stigma.
Patient Satisfaction	Overall, 63% of patients are satisfied with healthcare services, with 63% preferring Israeli hospitals for their professionalism and service quality. Meanwhile, 31% prefer Arab hospitals due to ease of communication and cultural respect. Major challenges include long waiting times, language barriers, and high out-of-pocket costs for certain services.

the highest rates of health issues, with approximately 19.7% indicating the presence of chronic health conditions, followed by Kafr Aqab at 13.6%. These findings underscore the urgent necessity for targeted preventive health services and early diagnostic programs in these high-burden areas.

Smoking and disability

The survey further revealed concerning prevalence rates of smoking: 29.0% among adults aged 18 and older and 1.4% among children. The highest rates of smoking were recorded in Sur Bahir and Um Toba (33.8%) as well as the Old City (32%), while the lowest prevalence was observed in Sharafat (20%). These statistics indicate a significant public health concern, highlighting the need for organized campaigns to raise awareness about the dangers of smoking and to promote cessation programs within the community.

Disability prevalence was assessed, revealing that 1.5% of the surveyed population reported having at least one type of disability, with mobility impairment being the most common (0.7%). The highest disability rate was recorded in Kafr Aqab (3.9%). These findings suggest the need for enhanced rehabilitation services and support systems for individuals with disabilities in EJ.

Drug abuse

The survey identified drug abuse as a significant social issue within the communities of EJ. Approximately 89.24% of respondents believed that drug abuse is a prevalent problem in their neighborhoods. The highest reported prevalence of this belief was in Shu'fat, where an alarming 99.4% of respondents acknowledged the presence of drug abuse. In contrast, the lowest perception of drug abuse prevalence was found in Isawiya

and Sheikh Jarrah, with only 56.67% of respondents sharing this view.

Moreover, more than half of the participants (53.24%) reported believing that drug trafficking and/or abuse occurs within or near their neighborhoods. The highest percentage of respondents perceiving drug trafficking in their vicinity was noted in Silwan, where 83.47% reported such activities. Conversely, Isawiya and Sheikh Jarrah had the lowest reported perception of drug trafficking at 9.05 %.

Healthcare services

The healthcare infrastructure in EJ comprises five hospitals, collectively offering 651 beds. These hospitals serve not only the local population but also patients from the West Bank and Gaza Strip. In 2018, a total of 80,717 patients were admitted to these hospitals, and approximately 240,000 were treated in outpatient clinics. Additionally, 58,530 patients sought care in emergency departments. The hospitals reported 7,474 births and performed 16,365 surgical operations throughout the year.

The hospitals demonstrated a high bed occupancy rate of 90%, indicating a significant demand for inpatient services. However, the average waiting time for elective surgeries was two weeks, reflecting the need for additional hospital beds and surgical capacity. Emergency departments provided care promptly, with most patients being seen within one hour. In outpatient clinics, however, the wait time extended to approximately 1.5 hours, raising concerns about access to timely care.

In terms of staffing, hospitals in EJ employed a total of 2,203 personnel, with 95% classified as full-time employees. Notably, 74% of the staff held West Bank identity cards, which may impact their ability to work efficiently given the prevailing political landscape.

Primary healthcare centers

Twenty health centers were surveyed, with services ranging from general medicine and gynecology to emergency care. However, only 55% of these centers offered post-surgical and rehabilitation services, and mental health services were available in just 40% of the centers. Patient satisfaction was 63%, with most respondents preferring Israeli hospitals for their high service quality and professionalism.

Rehabilitation and mental health services

Four out of six rehabilitation centers participated in the study. These centers provided services to between 600 and 6,000 outpatients annually. Staffing shortages and financial constraints were identified as significant challenges, with only 39 personnel working in rehabilitation centers, 82% of whom were full-time. In mental health centers, the average daily client load ranged from 15 to 50. The main barriers to mental health service utilization were social stigma and a lack of awareness about the importance of mental health support.

Patient satisfaction

Overall, patient satisfaction was recorded at 63%, indicating a moderate level of contentment with healthcare services in EJ. Respondents who preferred Israeli hospitals cited higher service quality, professionalism of staff, and a wider range of services as key reasons for their preference. In contrast, those who chose Arab hospitals highlighted better communication, respect for cultural and religious beliefs, and proximity to their residences. However, patients faced challenges such as long waiting times for appointments and referrals, as well as language barriers when accessing services in Israeli institutions. Additionally, out-of-pocket costs posed significant financial barriers for low-income groups, complicating access to necessary health services.

Fertility

In 2017, among the Arab population, the birth rate was 26.4 births per 1,000 (8,900 babies) while the death rate was 2.6 deaths per 1,000 (7). About 99.1% of the deliveries occur in health facilities with a 24.8% cesarean section rate. About 48.2% of currently married women age 15-49 years who are using (or whose partner is using) a modern contraceptive method, and 10.8% of women with unmet need for family planning (8).

DISCUSSION

This study provides critical insights into the healthcare landscape of EJ, particularly concerning chronic diseases, smoking, drug abuse, and overall healthcare service delivery. The findings indicate that chronic conditions such as diabetes and cardiovascular diseases are

prevalent, underscoring the urgent need for targeted public health interventions. The high rates of diabetes (4.32%) and cardiovascular conditions (2.84%) in adults highlight a significant burden on the healthcare system. These health issues necessitate the implementation of effective prevention programs, including health education, early screening, and disease management strategies, particularly in high-burden areas like the Old City and Kafr Aqab.

The prevalence of smoking remains a major public health concern, with rates reported at 29.0% among adults and 1.4% among children. Variations in smoking rates across different neighborhoods suggest the necessity for community-based interventions focused on smoking cessation. It is imperative that healthcare providers are trained to integrate smoking cessation advice into routine care, as brief interventions have been shown to be effective in promoting cessation.

Moreover, the study reveals a high level of awareness regarding drug abuse within the communities of EJ, with 89.24% of respondents acknowledging it as a prevalent social problem. This awareness is critical, yet it also indicates a potential normalization of drug use in certain neighborhoods, particularly in Shu'fat. The evident gap in comprehensive treatment and rehabilitation programs highlights the insufficiency of current services to meet the demands of those affected. Community engagement and the development of accessible rehabilitation services are vital in addressing this pressing issue.

Mental health is another area of critical need for the EJ population. Following the transfer of responsibility for hospital and ambulatory mental health services to health funds in 2015, the findings highlight disparities in access to these services. (3). In EJ, there are six specialized psychological centers and two main centers in West Jerusalem. The findings also highlight disparities in access to mental health services. Despite the recognition of mental health as a critical area of concern, only 40% of surveyed health centers provide psychiatric services. The stigma surrounding mental health issues can deter individuals from seeking help, further complicating the situation. Strategies aimed at reducing stigma and improving mental health literacy within the community are essential for encouraging individuals to pursue the care they require.

The patient satisfaction measure has become an acceptable tool for the evaluation of the quality program and health services provided, adding to that the patient's needs and preferences being a valuable issue in the health system (9). Regarding satisfaction with services received in EJ's healthcare institutions—comprising hospitals, health centers, and rehabilitation care—results indicate that approximately two-thirds of respondents expressed satisfaction. However, 30% reported moderate satisfaction, and only 7% were dissatisfied. In addition, two-thirds (63%) prefer to be treated in Israeli hospitals compared to 31% prefer Arab hospitals. This is related to the availability of advanced capacities/technologies, professional manner of qualified staff, and better quality of services available in Israeli institutions. The main reasons for preferring Arab hospitals were the easy communication and respect for patients' religion and traditions. Therefore, Arab hospitals in their plans should concentrate on developing the capacity of staff and the use of new diagnostics treatment technologies.

Moreover, the healthcare infrastructure in EJ demonstrates both strengths and weaknesses. Hospitals operate at high capacity and treat significant numbers of patients. However, challenges such as long waiting times for elective surgeries and limited rehabilitation services in primary health centers indicate areas requiring urgent attention. Addressing these challenges necessitates increased investments in healthcare resources, including staffing and infrastructure improvements.

CONCLUSION

This study highlights the significant healthcare needs in East Jerusalem (EJ), particularly concerning chronic disease management, smoking cessation, drug rehabilitation, and mental health services. The high prevalence of chronic diseases and associated risk factors indicate a requirement for effective public health interventions focused on prevention, early diagnosis, and management.

Although hospitals in EJ deliver essential tertiary care, notable gaps exist in primary healthcare services, particularly in rehabilitation and mental health. Addressing these gaps through targeted investments in

healthcare infrastructure, staffing, and service accessibility may contribute to improving health outcomes in the region. The most basic fundamental strategy in the health sector in EJ is the is establishing a network of primary health and public health services. This will be achieved through developing the infrastructure of the health centers and providing public health services.

Moreover, community engagement appears to be an important component for the effectiveness of interventions related to drug abuse and smoking. Collaborative efforts among healthcare providers, community organizations, and local authorities could facilitate the development and implementation of comprehensive treatment programs, potentially fostering a healthier environment for the residents of EJ. By prioritizing these areas, stakeholders may work towards a more effective and equitable healthcare system that addresses the diverse needs of the population.

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