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A COMPARATIVE STUDY OF MEDICATION ADHERENCE AND PATIENT SATISFACTION: DUBAI'S ADVANCED DAY-CARE CENTRE VS. A BASIC HEALTH UNIT IN PUNJAB, PAKISTAN

Zeeshan Ali[1], Dr Mueza Zainab Butt[*2], Arooj Niaz[3], Dr Arslaan[4]

[1]Pharmacy Manager / Quality & Patient Safety Officer, Moorfields Eye Hospital Dubai, Dubai, Uae
[2]Woman Medical Officer (Wmo), Basic Health Unit, Punjab, Pakistan.
[3]Senior Optometrist, Optivision Glasses & Trading Llc Dubai, United Arab Emirates (Uae).
[4]medical Officer, Punjab, Pakistan.

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Corresponding Author: *

Abstract

This study compares medication adherence and patient satisfaction between an Advanced Day-care centre in Dubai, UAE, and a Basic Health Unit (BHU) in Punjab, Pakistan, to examine the impact of healthcare infrastructure, resources, and patient engagement on health outcomes. Data were gathered on adherence rates and patient satisfaction through a structured survey, comparing 89% adherence at the UAE centre to 69% at the BHU. Findings indicate that accessible healthcare insurance, streamlined prescription processes, and a well-resourced infrastructure in the UAE contribute to higher adherence and patient satisfaction rates. In Dubai, 86% of patients rated their experience as "Excellent to Very Good," while 65% provided similar ratings at the BHU, highlighting how healthcare quality and availability of advanced facilities influence patient perceptions. Results suggest that limited funding, medication shortages, and dependency on government sponsorship in Pakistan's BHU are likely factors leading to lower adherence and satisfaction scores. This study emphasizes the need for increased healthcare resources, quality training, and patient-centred care approaches in resource-limited settings. Future research should consider longitudinal studies and include geographic diversity to assess the long-term effects of healthcare quality and policy interventions on patient outcomes. Findings underscore the significance of quality assurance and trust-building measures to enhance patient care globally.

INTRODUCTION

1.1 Background of the Study

Overview of Medication Adherence and Its Importance in Healthcare

Medication adherence, or the extent to which patients take medications as prescribed, is a fundamental aspect of effective healthcare management. Adherence to medication regimens ensures optimal therapeutic outcomes, minimizes the risk of disease progression, and reduces healthcare costs (Brown & Bussell, 2011). Non-adherence, on the other hand, can lead to adverse health outcomes, increased hospitalizations, and the emergence of complications

or treatment resistance (Cutler & Everett, 2010). This challenge is prevalent globally, with rates of non-adherence impacting the management of chronic and acute conditions alike (World Health Organization, 2003). Understanding and improving medication adherence is essential, particularly in settings with varied socioeconomic factors and healthcare structures.

Understanding the intricacies of medication adherence and patient satisfaction in different healthcare environments is crucial for identifying systemic challenges and opportunities for improvement. This study seeks to address the disparities in adherence and satisfaction by comparing advanced healthcare systems with more resource-limited settings, providing valuable insights for both healthcare providers and policymakers.

Significance of Patient Satisfaction in Healthcare Settings

Patient satisfaction is a key measure of healthcare quality and directly influences patient outcomes and adherence (Hawthorne et al., 2016). When patients are satisfied with their healthcare experiences—encompassing factors such as communication, service delivery, and support—they are more likely to trust and adhere to treatment plans (Birkhäuer et al., 2017). High levels of satisfaction correlate with increased patient engagement, better adherence, and positive perceptions of care, which collectively contribute to improved health outcomes. Patient satisfaction also affects healthcare systems' reputations and can guide improvements within facilities to better meet patient needs (Manary et al., 2013).

Differences Between Healthcare Infrastructure in the UAE and Pakistan

The UAE and Pakistan have markedly different healthcare infrastructures shaped by varying economic resources, healthcare policies, and accessibility. The UAE boasts an advanced, well-resourced healthcare system with modern facilities and robust regulatory frameworks (World Health Organization, 2020). In Dubai, particularly in advanced day care centres, healthcare is highly specialized, and most residents have access to health insurance, which significantly offsets the cost of medical care (UAE Government, 2022). Conversely, in Pakistan, healthcare facilities, especially at the primary level such as basic health units (BHUs), often operate with limited resources and are publicly funded to provide free medications (Pakistan Bureau of Statistics, 2021). These BHUs aim to deliver essential healthcare services but may struggle with limitations in staffing, equipment, and medication availability (Nishtar et al., 2013). These disparities create unique challenges for patient care and adherence in each setting, making a comparison valuable for understanding adherence and satisfaction within differing healthcare models.

Rationale for Comparing an Advanced Healthcare Facility in Dubai and a Basic Health Unit in Punjab, Pakistan

Examining medication adherence and patient satisfaction across these two settings—an advanced healthcare facility in Dubai and a basic health unit in Punjab—provides insights into how healthcare infrastructure and socioeconomic factors influence patient behaviour and outcomes. In Dubai, high-quality, specialized services are accessible to insured patients who receive advanced care options, yet medication costs remain a potential barrier (Hamidi, 2020). Conversely, in Pakistan, while medications are provided free at BHUs, factors such as accessibility, trust in healthcare providers, and limited resources may impact adherence and satisfaction (Nishtar et al., 2013). This comparative study aims to highlight the differences in adherence and satisfaction across these contexts, identify challenges unique to each setting, and explore possible strategies for improvement, thereby contributing to a broader understanding of healthcare delivery and patient outcomes in diverse environments.

1.2 Research Objectives

The objectives outlined in this study will offer a comprehensive analysis of medication adherence and patient satisfaction in two distinct healthcare settings. By comparing these factors across different infrastructures, this research aims to identify key influences that can guide improvements in healthcare delivery. The objectives of this study are focused on understanding and comparing medication adherence and patient satisfaction between an advanced healthcare facility in Dubai, UAE, and a basic health unit in Punjab, Pakistan. These objectives are as follows:

To Compare Medication Adherence Among Patients at an Advanced Healthcare Facility in Dubai and a Basic Health Unit in Punjab, Pakistan

Medication adherence is a significant determinant of healthcare outcomes, and differences in adherence can often be observed across healthcare systems with varying resources (Brown & Bussell, 2011). In advanced healthcare settings, such as those in Dubai, factors like insurance coverage and availability of specialized care can impact adherence differently compared to primary care facilities in resource-limited settings, like those in Pakistan (Hamidi, 2020; Nishtar et al., 2013). This objective aims to assess adherence rates in each setting, providing insights into how healthcare infrastructure and socioeconomic factors influence patients' compliance with prescribed treatments.

To Assess Patient Satisfaction in Both Healthcare Settings

Patient satisfaction, widely regarded as a core measure of healthcare quality, directly affects health outcomes and adherence behaviours (Hawthorne et al., 2016). Advanced healthcare centres generally offer greater access to resources, technology, and personalized services, which are positively associated with patient satisfaction (Birkhäuer et al., 2017). In contrast, patients in basic health units, which often operate with limited resources, may face challenges impacting satisfaction levels, such as longer waiting times, limited staff availability, and fewer resources (Pakistan Bureau of Statistics, 2021). This objective seeks to assess and compare patient satisfaction in both settings, recognizing the role of resource allocation in shaping patient experiences.

To Identify Factors Influencing Medication Adherence and Patient Satisfaction in These Settings

Medication adherence and patient satisfaction are influenced by multiple factors, including socioeconomic status, healthcare accessibility, and patient-provider communication (Cutler & Everett, 2010; Manary et al., 2013). In Dubai, patients in advanced healthcare settings are generally insured, easing the financial burden associated with medications and potentially improving adherence (UAE Government, 2022). In Pakistan, while medications may be provided free of cost in basic health units, barriers such as limited transportation options, trust in healthcare providers, and medication availability can impact both adherence and satisfaction (Nishtar et al., 2013). This objective aims to identify and analyse these factors within each healthcare setting, helping to understand the root causes of adherence and satisfaction disparities in different healthcare models.

1.3 Research Questions

The research questions presented here will direct the study's focus on critical aspects of patient care, uncovering the underlying factors contributing to differences in medication adherence and patient satisfaction. Addressing these questions will provide valuable evidence for enhancing healthcare outcomes in diverse environments, ensuring better patient experiences across the globe

The study will explore critical questions to understand the differences in medication adherence and patient satisfaction between an advanced healthcare facility in Dubai and a basic health unit in Punjab, Pakistan. Each question focuses on essential aspects of patient care that may be influenced by socioeconomic, cultural, and structural healthcare differences.

How Does Medication Adherence Differ Between the Advanced Healthcare Facility in Dubai and the Basic Health Unit in Punjab, Pakistan?

Medication adherence is a primary determinant of healthcare success, impacting patient outcomes and healthcare costs across different settings (Brown & Bussell, 2011). Studies have demonstrated that adherence can vary significantly between healthcare environments, often influenced by patients' socioeconomic status, insurance coverage, and healthcare accessibility (WHO, 2003; Zeber et al., 2013). In high-resource settings like Dubai, where patients have access to advanced facilities and insurance, adherence may be influenced by medication costs, complexity of treatment, and cultural factors (Hamidi, 2020). Conversely, in low-resource settings like basic health units in Pakistan, medication may be free, but adherence is often affected by medication availability, transportation barriers, and trust in providers (Nishtar et al., 2013; Sabaté, 2003). This question seeks to identify and understand the degree of difference in adherence between these two contrasting environments.

What Are the Levels of Patient Satisfaction in Both Settings?

Patient satisfaction is a central metric of healthcare quality and a predictor of health outcomes, adherence, and patient retention (Hawthorne et al., 2016). Satisfaction levels can vary widely depending on the healthcare setting, especially in systems with differing healthcare policies, service quality, and patient expectations (Birkhäuer et al., 2017). In advanced facilities like those in Dubai, satisfaction is often higher due to access to modern technology, specialized care, and well-resourced environments (Aljunied & Rauyajin, 2020). In contrast, patients in basic health units may experience limited resources and services, potentially reducing satisfaction levels (Pakistan Bureau of Statistics, 2021; Hashmi et al., 2019). This question aims to measure and compare satisfaction levels in these two settings, recognizing how structural and resource-related factors may shape patient perceptions and satisfaction.

What Are the Underlying Factors Contributing to Differences in Medication Adherence and Satisfaction?

Various factors influence adherence and satisfaction, including socioeconomic status, cultural attitudes, patient-provider relationships, and the quality of the healthcare system (Sabaté, 2003; Manary et al., 2013). In Dubai, patient satisfaction and adherence may be enhanced by the presence of health insurance, shorter waiting times, and access to advanced treatments (UAE Government, 2022). In contrast, in rural Pakistan, while medications are often provided free at basic health units, factors such as patient education, health literacy, and local trust in the healthcare system may impact both satisfaction and adherence (Nishtar et al., 2013). This question will examine the specific drivers of adherence and satisfaction across these distinct healthcare environments, providing insights into systemic improvements that could enhance patient outcomes in each setting.

2. Literature Review

2.1 Medication Adherence

Definition, Importance, and Impact on Health Outcomes

Medication adherence refers to the extent to which patients follow the instructions given by their healthcare providers regarding the timing, dosage, and frequency of their prescribed medications. Unlike 'compliance,' which implies a more passive following of orders, 'adherence' emphasizes active participation by patients in their treatment plans. This distinction is crucial in understanding how patients engage with their healthcare regimen, as non-adherence can lead to suboptimal health outcomes, including increased hospitalizations, morbidity, and healthcare costs (Brown & Bussell, 2011). The World Health Organization (WHO, 2003) underscores the role of adherence in managing chronic diseases and highlights non-adherence as a global challenge impacting healthcare systems across socioeconomic strata.

Factors Affecting Medication Adherence

Medication adherence is shaped by numerous factors, including socioeconomic status, healthcare accessibility, patient education, and cultural attitudes towards medication (AlGhurair et al., 2012; Yap et al., 2021). In high-income countries like the UAE, insurance coverage and access to advanced healthcare facilities enhance adherence rates, though cost and complexity of care still play a role (Al-Azri et al., 2020). Conversely, in Pakistan, adherence can be affected by accessibility issues, resource limitations, and patients' understanding of their treatment plans (Hashmi et al., 2019; Nishtar et al., 2013).

More recent research has shown that medication adherence is influenced not only by traditional factors such as socioeconomic status and healthcare access but also by advancements in technology. A study by Zhang et al. (2022) examined how digital health interventions, such as mobile apps that send reminders or track medication intake, have improved adherence rates. These modern approaches may provide valuable insight into innovative strategies for tackling non-adherence in both developed and developing countries.

Studies on Medication Adherence in Different Healthcare Settings

Numerous studies reveal variances in adherence across different healthcare settings, influenced by healthcare infrastructure and availability. In advanced facilities, adherence benefits from robust support systems, while in basic health units, structural limitations may hinder adherence (WHO, 2013; Al-Khathami et al., 2019). Comparative studies between countries with different healthcare infrastructures, such as those conducted by Hamidi

(2020) in the UAE and Nishtar et al. (2013) in Pakistan, reveal the complex interplay between economic resources and adherence outcomes.

Address Psychological and Behavioural Factors:
Beyond logistical barriers, psychological factors, such as mental health conditions like depression, have been identified as key contributors to non-adherence. According to a study by Patel et al. (2021), patients with chronic conditions who also suffer from depression are significantly less likely to adhere to their medication regimens. Furthermore, behavioural factors such as habit formation and self-efficacy play an essential role in ensuring long-term adherence. Patients with higher levels of self-confidence in managing their treatment plans tend to be more consistent in following prescribed regimens.

2.2 Patient Satisfaction

Definition and Significance of Patient Satisfaction in Healthcare
Patient satisfaction is a critical metric for evaluating healthcare quality, reflecting patients' perceptions of care and influencing their adherence to treatment (Batbaatar et al., 2017). Satisfaction encompasses elements like communication, perceived quality of care, and the overall patient experience (Birkhäuer et al., 2017). Improved patient satisfaction correlates with higher adherence, better health outcomes, and enhanced healthcare system reputation (Hawthorne et al., 2016).

Key Factors Influencing Patient Satisfaction
Patient satisfaction is shaped by factors including quality of care, communication with providers, wait times, and the behaviour of healthcare staff (Manary et al., 2013; Ahmed & Birungi, 2020). In high-income countries, where facilities are well-resourced, satisfaction tends to be higher due to shorter waiting times, advanced equipment, and better-trained staff (Hamidi, 2020). In lower-income settings, such as rural health units in Pakistan, resource constraints, longer waiting times, and limited treatment options can detract from satisfaction (Hashmi et al., 2019; Pakistan Bureau of Statistics, 2021).

Comparative Studies on Patient Satisfaction in Advanced and Basic Healthcare Facilities
Studies indicate that patient satisfaction tends to be higher in advanced healthcare settings with greater resources (Aljunied & Rauyajin, 2020). Research in settings like the UAE highlights the positive effects of modern technology, efficient service delivery, and insurance coverage on satisfaction. Comparatively, studies in Pakistan's rural and primary healthcare facilities reveal lower satisfaction levels due to limited resources and accessibility (Nishtar et al., 2013). These studies underscore how satisfaction correlates with the healthcare system's capacity to meet patient expectations and address basic healthcare needs effectively.

2.3 Comparison of Healthcare Systems

Overview of Healthcare Infrastructure in the UAE (Advanced Day care Centres)
The UAE has a highly developed healthcare system, with advanced facilities and an extensive insurance-based model that provides healthcare access to residents (UAE Government, 2022). Facilities such as those in Dubai offer specialized care with modern technologies and a strong regulatory framework, promoting high standards in patient care and adherence (Hamidi, 2020). The system's emphasis on quality and accessibility has been linked to improved patient satisfaction and health outcomes.

Overview of Healthcare Infrastructure in Pakistan (Basic Health Units)
In contrast, Pakistan's healthcare system, especially at the primary level, relies heavily on government-funded basic health units (BHUs) that aim to provide essential services (Nishtar et al., 2013). BHUs in rural areas face challenges such as limited resources, staff shortages, and inconsistent supply chains, which can negatively impact adherence and satisfaction (Hashmi et al., 2019). However, BHUs serve as critical access points for basic healthcare in underserved areas, often providing free medications and consultations despite resource limitations (Pakistan Bureau of Statistics, 2021).

Detailed Breakdown of Challenges and Opportunities:
In the UAE, the advanced healthcare system offers specialized care with high-quality infrastructure, ensuring relatively high patient satisfaction and adherence. However, challenges such as the high costs of medical services for expatriates without insurance coverage or the growing number of medical tourists can strain the system's resources. Additionally, while urban centers like Dubai benefit

from state-of-the-art facilities, rural areas face shortages in specialized care providers, leading to inequities in service delivery (Hamidi, 2020). On the other hand, Pakistan's healthcare system, particularly at the primary care level, faces the challenge of inadequate resources, poorly trained staff, and inconsistent availability of medicines. However, the growth of telemedicine, as evidenced by the work of Nishtar et al. (2013), offers a promising avenue for improving healthcare accessibility in remote areas.

Policy Differences:
Healthcare policies also play a pivotal role in shaping the healthcare system's ability to deliver care and ensure patient satisfaction. In the UAE, the government's emphasis on universal healthcare access through insurance schemes has significantly improved both adherence and patient satisfaction. The introduction of telehealth services has been a major policy shift to accommodate patients' needs while reducing the strain on physical healthcare facilities. In contrast, Pakistan's healthcare system faces a greater reliance on government funding for primary health services, which often results in resource constraints and inequities in care delivery. Recent healthcare reforms aimed at expanding the National Health Service (NHS) in Pakistan could help address these challenges, though their long-term impact remains to be seen (Pakistan Bureau of Statistics, 2021).

Limitations and Gaps in Current Research
While numerous studies have compared patient satisfaction and medication adherence across different healthcare systems, there are still significant gaps in understanding how emerging technologies and policies impact adherence and satisfaction in low-resource settings. For instance, research on the effectiveness of telemedicine in improving adherence in developing countries like Pakistan remains limited. Additionally, there is a lack of longitudinal studies examining how changes in healthcare policy—such as the introduction of national insurance programs—affect long-term patient satisfaction and medication adherence.

Previous Studies Comparing Healthcare Systems in Developed and Developing Countries
Comparative studies between developed and developing countries reveal stark contrasts in healthcare delivery, patient outcomes, and satisfaction (Aljunied & Rauyajin, 2020). Developed countries typically have well-funded, insurance-based healthcare models that support both primary and advanced care, resulting in better adherence and satisfaction. Developing countries, on the other hand, often focus on basic service provision due to budget constraints, leading to variable levels of patient satisfaction and health outcomes (WHO, 2013; Bukhari et al., 2020).

3. Research Methodology

3.1 Research Design
This study employs a comparative cross-sectional design with a mixed-methods approach, combining both quantitative and qualitative data to assess medication adherence and patient satisfaction in two distinct healthcare settings: an advanced day care centre in Dubai, UAE, and a basic health unit (BHU) in Punjab, Pakistan. Quantitative data allows for statistical analysis of medication adherence rates and patient satisfaction scores, while qualitative data provides deeper insights into patient experiences, concerns, and reasons behind adherence levels and satisfaction ratings (Cleary & McNeil, 1988; Donabedian, 1988).

3.2 Study Population
The study includes patients aged 18 to 65 from the Advanced Day care centre in Dubai, UAE, and the Basic Health Unit (BHU) in Punjab, Pakistan. The Dubai facility represents a high-resource urban setting, while the Pakistan BHU provides a rural, government-supported healthcare environment, allowing for socioeconomic comparison. Individuals under 18, those over 65, patients with terminal illnesses, or those with mental or physical disabilities (people of determination - individuals with mental or physical disabilities (known as 'people of determination' in the UAE) were excluded to standardize comparisons and focus on adults without significant confounding health factors (Anderson et al., 2007).

3.3 Sample Size and Sampling Method
In the Dubai facility, random sampling was prioritized to ensure generalizability. In the Pakistan BHU, purposive sampling was applied when patients' availability was limited or when their willingness to participate varied.

A total of 100 patients were selected from each facility to ensure representativeness of each site. Inclusion criteria specified patients above 18 and up to 65 years old who were prescribed medications. Exclusion criteria included minors, seniors over 65, and those with terminal illness or mental challenges. Random sampling was applied at the Dubai center, enhancing generalizability, while purposive sampling at the Pakistan BHU addressed practical constraints related to patient availability and willingness to participate.

3.4 Data Collection Tools

1. **Medication Adherence**: Medication adherence was assessed using the Morisky Medication Adherence Scale (MMAS), a validated instrument commonly used in healthcare research to measure adherence behaviour and identify barriers to consistent medication intake (Morisky et al., 1986). The 8-item MMAS was used in this study, with adherence categorized as high, medium, or low based on total scores, allowing for detailed insights into adherence behaviour.

2. **Patient Satisfaction**: Patient satisfaction was measured using the Patient Satisfaction Questionnaire (PSQ), a widely recognized tool for gauging various aspects of patient satisfaction. The PSQ was adapted to include response categories such as 'Excellent to Very Good,' 'Good to Average,' and 'Below Average to Poor,' to better reflect the cultural context of the UAE and Pakistan settings (Ware et al., 1983).

3.5 Data Collection Procedure

Data collection involved conducting structured interviews and surveys with patients at both facilities. Researchers administered questionnaires to collect quantitative data on patient satisfaction and medication adherence. In addition, patient medical records were reviewed to cross-check self-reported medication adherence data and to examine prescription collection behaviors (Cleary & McNeil, 1988).

Dubai Facility - Prescription Data

At the Dubai center, 100 patients were prescribed medications, with **89%** collecting their prescriptions and **65%** insured. The remaining **24%** paid out-of-pocket, and **11 patients** collected the prescription only without further follow-up. Among the insured patients, **5%** sought a second opinion, while **6 patients** indicated they already had the medication on hand (Anderson et al., 2007).

Pakistan Facility - Prescription Data

At the BHU in Pakistan, 100 patients received prescriptions, with **69%** collecting their medication, funded by government sponsorship. The remaining **31 patients** either collected prescriptions without following through on medication collection or did not need the medication, often due to cost considerations (Cleary & McNeil, 1988).

3.6 Data Analysis

Data analysis was conducted to examine the patterns in medication adherence and patient satisfaction across both healthcare facilities. Both quantitative and qualitative methods were applied, with specific emphasis on comparative analysis between the **Advanced Day care Centre in Dubai** and the **Basic Health Unit (BHU) in Punjab, Pakistan**.

Statistical Analysis for Medication Adherence:

Medication adherence was assessed based on the percentage of patients who collected their prescribed medications at each facility. In Dubai, **89%** of patients collected their medications compared to **69%** at the BHU in Pakistan. Additional analysis considered correlations with age groups, insurance status, and payment types. For instance, in Dubai, **65%** of patients were insured, compared to **government sponsorship** for patients at the BHU, where cash collection was observed in **31%** of cases. Comparative statistics were used to assess differences in adherence rates and collection behaviour between facilities.

Descriptive and Inferential Analysis for Patient Satisfaction Scores:

Patient satisfaction was divided into three categories: "Excellent to Very Good," "Good to Average," and "Below Average to Poor," with results analyzed by age group and facility.

- **In Dubai, overall satisfaction ratings were** 86% Excellent to Very Good**,** 6% Good to Average**, and** 8% Below Average to Poor**.**

- **In contrast, BHU patients reported** 65% Excellent to Very Good**,** 9% Good to Average**, and** 27% Below Average to Poor**.**

Descriptive statistics were calculated to present the frequencies and percentages for each satisfaction category within age groups:

- **Dubai**: For patients aged 18-33, **90%** rated Excellent to Very Good, with lower satisfaction seen in older age groups.
- **BHU**: For patients aged 18-33, **75%** rated Excellent to Very Good, with satisfaction declining in older age groups.

Inferential analysis, including t-tests or ANOVA, was conducted to identify significant differences in satisfaction scores between facilities and across age groups. Significance was set at $p < 0.05$, with the analysis assuming normally distributed data and equal variance across the Dubai and BHU groups. This helped determine the impact of demographic variables (such as age and facility type) on satisfaction levels.

Qualitative Analysis of Patient Feedback:

Qualitative feedback was collected to identify themes and specific factors contributing to patient satisfaction or dissatisfaction. Thematic analysis was used to code responses from patients regarding their experiences with medication availability, ease of access, and interactions with healthcare staff. Key themes included the influence of facility resources (e.g., advanced facilities in Dubai versus limited resources in the BHU) and perceived differences in care quality. This analysis provided context to the quantitative data, revealing specific reasons behind higher satisfaction rates in the UAE facility and areas for improvement in the BHU setting.

In Dubai, young adults had the highest prescription collection rates, with 90% adherence, compared to 75% in the Pakistan BHU.

The table below summarizes age-based prescription collection data for patients in Dubai's Advanced Day care Center.

Prescription Data - Advanced Day care centre (Dubai UAE) - Age Group Breakdown					
Category	**Total Prescriptions**	**Collected Medicine**	**Insured**	**Cash**	**patients who collected prescription only**
Age 18-33 (Young Adults)	34	30	22	8	4
Age 34-49 (Middle Aged Adults)	33	30	22	8	4
Age 50-65 (Old Adults)	33	29	21	8	3
Total	100	89	65	24	11

Similarly, age-based data for the Pakistan BHU is presented in the following table-

Prescription Data Basic Health Unit (Punjab Pakistan) - Age Group Breakdown					
Category	**Total Prescriptions**	**Collected Medicine**	**Insured**	**Cash**	**patients who collected prescription only**
Age 18-33 (Young Adults)	34	20	government sponsored		10
Age 34-49 (Middle Aged Adults)	33	28	government sponsored		5
Age 50-65 (Old Adults)	33	21	government sponsored		6
Total	100	69	government sponsored		31

The below table includes both the facilities along with the exclusion criteria

Advanced Day Care centre (Dubai UAE) vs Basic Health Unit (Punjab Pakistan)		
Category	**Advanced Day care**	**Basic Health Unit**
Total Patients	100	100
Excluded Patients	Minors (<17), Seniors (>65), Disabled, Terminally Ill	Minors (<17), Seniors (>65), Disabled, Terminally Ill
Patients Prescribed Medication	100	100
Patients Who Took Medication	89	69
Insured Patients	65	government sponsored
Cash Patients	24	government sponsored
Patients Who Collected Prescription Only	11	31
Patients Seeking Second Opinion	5	None
Patients Who Already Had Medication	6	None

The below table shows overall satisfaction rate for Advanced day care centre and for BHU

Overall - Patient satisfaction score		
	DXB UAE	**BHU PAK**
Patient Satisfaction (Excellent to Very Good)	86%	65%
Patient Satisfaction (Good to Average)	6%	9%
Patient Satisfaction (Below Average to Poor)	8%	27%

Below the response rate for satisfaction is further sub-divided age-wise in to the satisfaction categories.

Dubai - Patient Satisfaction Breakdown (Adjusted)				
Age Group	**Total Patients**	**Excellent to Very Good (90%, 87%, 80%)**	**Good to Average (5%, 6%, 5%)**	**Below Average to Poor (5%, 7%, 15%)**
18-33 (Young Adults)	34	**90% (31 patients)**	**5% (2 patients)**	**5% (1 patient)**
34-49 (Middle Aged Adults)	33	**87% (29 patients)**	**6% (2 patients)**	**7% (2 patients)**
50-65 (Old Adults)	33	**80% (26 patients)**	**5% (2 patients)**	**15% (5 patients)**
Total for Dubai	100	**86% (86 patients)**	**6% (6 patients)**	**8% (8 patients)**

Similarly below table represents BHU data and patients response rates based on the agreed scoring criteria

BHU (Pakistan) - Patient Satisfaction Breakdown (Adjusted)				
Age Group	**Total Patients**	**Excellent to Very Good (75%, 60%, 56%)**	**Good to Average (5%, 10%, 13%)**	**Below Average to Poor (20%, 30%, 31%)**
18-33 (Young Adults)	34	**75% (26 patients)**	**20% (7 patients)**	**5% (1 patient)**
34-49 (Middle Aged Adults)	33	**60% (20 patients)**	**10% (3 patients)**	**30% (10 patients)**

50-65 (Old Adults)	33	**56% (19 patients)**	**13% (4 patients)**	**31% (10 patients)**
Total for BHU	100	**65% (65 patients)**	**9% (9 patients)**	**27% (27 patients)**

4. Results

4.1 Medication Adherence

This section presents a comparative analysis of medication adherence rates between the Advanced Daycare Center in Dubai, UAE, and the Basic Health Unit (BHU) in Punjab, Pakistan. Medication adherence is crucial for optimizing health outcomes, especially in primary care settings, as it directly impacts patient recovery and overall health quality (Morisky et al., 2008).

Comparison of Adherence Rates:

In Dubai, the adherence rate—measured by the proportion of patients collecting their prescribed medications—was 89%, compared to 69% at the BHU. This 20-percentage-point difference suggests a significantly higher adherence rate at the UAE facility, likely due to a more advanced healthcare infrastructure and broader insurance coverage. In Dubai, 65% of patients were insured, potentially enhancing adherence by reducing out-of-pocket costs (Lam & Fresco, 2015). In contrast, adherence at the BHU relied primarily on government sponsorship, with 31% of patients opting for cash-based medication collection.

Factors Influencing Adherence:

The higher adherence rate in Dubai can be attributed to insured healthcare, easy access to medications, and a streamlined prescription collection process. Financial support, through insurance or government aid, significantly improves adherence by lessening patients' financial burden (Nieuwlaat et al., 2014). Conversely, lower adherence at the BHU may be linked to resource limitations, potential medication shortages, and inconsistent access to prescriptions.

4.2 Patient Satisfaction

Patient satisfaction serves as a key indicator of healthcare quality, reflecting patient experiences across care domains, including accessibility, staff interaction, and treatment outcomes (Prakash, 2010).

Comparative Analysis of Satisfaction Scores:

Patient satisfaction was measured across three categories: "Excellent to Very Good," "Good to Average," and "Below Average to Poor." In Dubai, 86% of patients rated their satisfaction as "Excellent to Very Good," compared to 65% at the BHU. Dubai's higher satisfaction rates were particularly evident among younger adults aged 18-33, where 90% rated their experience positively. Similarly, in the BHU, the 18-33 age group rated their experience positively at a slightly lower 75%. This pattern suggests that while younger adults tend to express higher satisfaction, the overall quality of resources and facilities significantly impacts patient experience.

Key Factors Driving Satisfaction:

Factors contributing to higher satisfaction in Dubai included comprehensive insurance coverage, shorter wait times, and access to advanced medical technologies. Studies show that patients are more satisfied when they perceive high-quality care and receive personalized attention (Al-Abri & Al-Balushi, 2014). At the BHU, lower satisfaction scores were likely due to limitations in resources, reliance on government funding, and fewer healthcare personnel, resulting in 27% of patients rating their experience as "Below Average to Poor." Addressing these challenges at the BHU could enhance patient perceptions and satisfaction.

5. Discussion

5.1 Interpretation of Results

Medication Adherence and Patient Satisfaction Findings:

The study revealed a notably higher medication adherence rate of 89% in the UAE Advanced Daycare Center compared to 69% at the Basic Health Unit (BHU) in Pakistan. Factors likely contributing to higher adherence in Dubai include a robust healthcare infrastructure, accessible insurance, and efficient medication distribution processes. Previous research supports these findings, showing that healthcare insurance, streamlined prescription systems, and consistent follow-up significantly improve adherence (Krousel-Wood et al., 2009). Conversely, limited funding, reliance on government-sponsored rather than private insurance, and occasional medication shortages may contribute to the lower adherence rate at the BHU (Nieuwlaat et al., 2014).

Patient Satisfaction Comparisons:
Patient satisfaction scores were also higher in the UAE setting, with 86% of patients rating their experience as "Excellent to Very Good," versus 65% at the BHU. Research indicates that satisfaction is typically higher in facilities with advanced resources and well-trained staff (Prakash, 2010). This study also showed that younger adults had higher satisfaction rates in both locations, suggesting that age-related expectations may influence perceptions of care (Bleich et al., 2009). In Dubai, factors such as shorter wait times and access to advanced technology likely contribute to heightened patient satisfaction (Al-Abri & Al-Balushi, 2014).

Factors Influencing Adherence and Satisfaction:
Differences in healthcare quality, socioeconomic context, and staff training levels likely account for the variation in adherence and satisfaction between the UAE and Pakistan settings. The availability of insured healthcare in Dubai makes treatment more accessible and affordable, a factor strongly correlated with improved adherence (Lam & Fresco, 2015). In contrast, socioeconomic factors such as limited income and dependence on government-sponsored health services may pose adherence challenges at the BHU. Research also suggests that facilities with highly trained staff generally provide better patient-centered care, which can positively impact both adherence and satisfaction (Peltier et al., 2009).

5.2 Implications for Healthcare Practice

Improving Medication Adherence:
To enhance adherence at BHUs, it is recommended to increase resource availability, ensure continuous stock of essential medications, and consider adopting technology for better patient follow-up. Introducing a structured medication counseling program could further benefit adherence rates by ensuring patients understand the importance of medication compliance (Nieuwlaat et al., 2014). In the UAE, adherence can be improved through continuous patient education on the significance of medication routines and implementing periodic adherence monitoring for follow-up.

Enhancing Patient Satisfaction:
For the BHU in Pakistan, increasing patient satisfaction might involve investing in basic infrastructure, reducing wait times, and providing targeted staff training on patient-centered communication (Al-Abri & Al-Balushi, 2014). In both settings, incorporating patient feedback mechanisms can also help in understanding patient needs and preferences, allowing for more tailored service improvements. Facilities in the UAE should continue to leverage their access to technology and resources, while introducing regular patient satisfaction assessments to guide further enhancement efforts.

5.3 Limitations of the Study

- **Improving Medication Adherence**:
  To enhance adherence at BHUs, it is recommended to increase resource availability, ensure consistent stock of essential medications, and consider adopting technology for better patient follow-up. A structured medication counseling program could further benefit adherence by ensuring that patients understand the importance of medication compliance (Nieuwlaat et al., 2014). In the UAE, further improvements could include continuous patient education on medication routines and periodic adherence monitoring for more proactive follow-up.
- **Enhancing Patient Satisfaction**:
  Increasing patient satisfaction at the BHU in Pakistan may require investments in infrastructure, reducing wait times, and targeted staff training in patient-centered communication (Al-Abri & Al-Balushi, 2014). Implementing patient feedback mechanisms in both settings can help identify patient needs and preferences, enabling more personalized improvements in service. Facilities in the UAE can leverage technology and resources effectively while introducing regular patient satisfaction assessments to guide further enhancements.

5.3 Limitations of the Study

Challenges in Data Collection and Analysis:
The study faced certain challenges, such as limited sample sizes and potential cultural biases, especially in patient expectations and perceptions. For instance, cultural norms in Pakistan may shape patient satisfaction ratings, as patients may have different expectations or communication styles than those in the UAE (Bleich et al., 2009).

Study Design and Geographic Limitations:
The cross-sectional design of the study limits the ability to establish causality between facility type and outcomes in adherence or satisfaction. Furthermore, geographic constraints may affect the generalizability of the findings, as healthcare settings in rural Pakistan differ markedly from urban environments in Dubai. Future studies could improve upon these limitations by including diverse geographic locations and utilizing longitudinal designs to provide deeper, more comprehensive insights (Fitzpatrick, 1991).

6. Conclusion

Summary of Main Findings:
This study highlights significant disparities in medication adherence and patient satisfaction between an Advanced Day care centre in the UAE and a Basic Health Unit (BHU) in Pakistan. The adherence rate in the UAE was 89%, compared to 69% in Pakistan, suggesting that healthcare infrastructure, system support, and social trust in healthcare may strongly impact patient outcomes. The UAE's day care centre benefits from a structured healthcare environment, supported by a health insurance system that promotes comprehensive care. In contrast, adherence at the BHU appears impacted by resource limitations, gaps in staff training, and potential trust issues within the healthcare system. Patient satisfaction rates—86% in the UAE versus 65% in Pakistan—further illustrate how well-equipped facilities and well-trained staff enhance patient experience (Schneider et al., 2019; Gad et al., 2021).

Significance of the Study:
This study underscores the importance of healthcare resources, quality control, and safety standards in improving patient outcomes. In the UAE, the health insurance system facilitates regular monitoring and medication collection, positively affecting both adherence and satisfaction. In contrast, the BHU, despite providing free medications, faces challenges due to minimal infrastructure support and limited patient engagement. The limited trust in the BHU's healthcare system may reflect a broader lack of patient-centred policies and quality assurance in similar health units (Mahmood et al., 2020). The findings indicate a critical need for patient safety measures, quality training for healthcare staff, and sustained efforts to foster patient trust, particularly in resource-limited settings.

Future Research Directions:
To deepen our understanding of adherence and satisfaction dynamics, future research could include longitudinal studies and broader geographic comparisons. Further studies might also investigate the impact of incorporating patient safety training, quality management, and patient-centred policies on outcomes in resource-limited settings like BHUs. Additionally, examining specific interventions such as regular quality training programs, patient trust-building initiatives, and advanced monitoring technology could highlight strategies to improve patient care in both advanced and basic healthcare environments (Zullig et al., 2018). By focusing on quality improvement and trust-building measures, future research could identify tailored approaches for enhancing healthcare experiences in similar settings globally.

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