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Assessment of health system responsiveness in delivering HIV and AIDS care services at Urban sites of Pakistan – a protocol for cross sectional study

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ABSTRACT

Introduction The capacity of a health system to fulfill the justifiable demands of patients and their caregivers while delivering prompt, courteous and patient-centered treatment is known as health system responsiveness (HSR). HSR can be considered as a measure for the quality of the health system. Keeping aside the clinical aspects of healthcare, it focusses on the health system's capacity to meet the needs of patients in accordance with ethical values and service standards. HSR is comprised of eight major dimensions including autonomy, dignity, confidentiality, timely attention, communication, facility quality, social support network accessibility and provider choice.

Methods and analysis An analytical cross-sectional study will be conducted in three public anti-retroviral therapy (ART) centres of Karachi, Pakistan, and will continue for a period of 12 months using purposive sampling technique. A sample size of 381 individuals is calculated, and patients aged >18 years, on treatment for the past 12 months will be included. Face-to-face interviews will be carried out by trained interviewers after obtaining informed consent in the local language. Descriptive statistics will be presented alongside binary logistic regression analysis.

Ethics and dissemination Written and informed consent will be taken from each participant before enrolment. This study is approved by the ethical review committee at the Aga Khan University Hospital (Ref No: 2024-9960-31694), and official permission has been obtained by the additional district health officer of the local government. We will disseminate the findings to stakeholders at the provincial government, private institutions, local and international conferences and a peer-reviewed journal.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ Three anti-retroviral centres located at key areas of the city will be included which will provide representation of diverse catchment population.
⇒ A validated tool that assesses all health system responsiveness domains, providing both domain-specific and holistic evaluations, is used.
⇒ As HIV is a concentrated epidemic in high-risk populations, and there is increased stigma in Pakistan, this may result in reporting bias.
⇒ Purposive sampling and increased health-seeking behaviours may lead to selection bias in the study.
⇒ This study only involves quantitative assessment; therefore, in-depth reasoning will not be explored.

INTRODUCTION

A health system is a structured network of individuals, organisations and resources designed to provide healthcare services and address the health needs of a specified population.[1] Health service delivery involves a dynamic interaction among healthcare providers, patients and the administrators or managers responsible for overseeing the facility's operations.[2] Three primary objectives have been established by the WHO for the health system: enhancing population health, increasing the health system responsiveness (HSR) and offering financial security from uncontrollably high medical costs.[3]

HSR implies the competence of a health system to cater to the reasonable demands of patients and their families and to provide care that is respectful, patient-centred and timely.[4 5] It is considered an integral part of any country's health system, alongside health outcomes and fairness of financial contributions.[6] It is a potential indicator to measure quality and focuses on the health system's capacity to meet the needs of patients in accordance with ethical values and service standards.[7] The WHO has identified eight domains of HSR: autonomy, confidentiality, dignity, communication, early attention, quality of resources, community support system access and selection of provider.[4] People's experiences while availing the health services which either support or disprove their initial assumptions constitute HSR. Both the

people and system sides of communication are shaped by many factors, which eventually impact the experiences of the resulting individuals.[4]

Pakistan's health system operates under a federal health ministry that primarily functions as a regulatory body, while autonomous provincial health departments are responsible for the implementation of health services. Following the devolution of authority from the federal to provincial levels through the 18th Amendment to the Constitution in 2010,[8] the national response to HIV faced significant challenges. These include inadequate coordination between federal and provincial government entities, inaccurate reporting of HIV cases, limited public participation and medical malpractice by untrained personnel, all of which have contributed to the lagging HIV response.[9]

People who are injectable drug users, sex workers, men who have sex with men and transgender are among the high-risk groups affected by HIV in Pakistan.[10] The estimated number of people living with HIV (PLHIV) in Pakistan is 183 705,[10] out of which approximately 91% constitutes from Sindh and Punjab, the two major provinces in Pakistan, with primary clusters concentrated in densely populated cities, such as Karachi, Lahore and also the capital, Islamabad.[11] Most of the mortality is caused by inadequate care that results in treatment failure, which can be considerably decreased by fulfilling patients' expectations.[12] Thousands of people have benefitted from the latest expansion of HIV/AIDS treatment and care services.[13] Lifelong care is necessary for medical disorders like HIV/AIDS. Therefore, to promote adherence to medication and improve health outcomes, the quality of care should be aligned with the patients' expectations. According to a study by WHO, the most important factors across 40 countries were prompt attention, dignity and communication, while the responsiveness score summary showed significant global diversity, with wealthier nations like Europe having higher scores.[14]

According to recent literature, the likelihood of a successful course of treatment increases with the HSR, which reflects the patient's expectations and level of satisfaction with the services.[15] Unfortunately, there is a scarcity of literature from Pakistan, specifically for HSR regarding HIV and AIDS care. Therefore, the aim of the current study is to assess the responsiveness of the health system in an urban city of Pakistan regarding HIV/AIDS care and treatment services. The findings of this study can assist policymakers to create evidence-based plans to enhance the quality of care of health services, especially for this marginalised population.

METHODOLOGY

Study design, setting and duration

This will be a cross-sectional survey in three antiretroviral therapy (ART) centres, namely, Lyari General Hospital, Abbasi Shaheed Hospital, and Dr. Ruth K. M. Pfau Civil Hospital in Karachi, Pakistan (see figure 1), and will continue for a period of 12 months (from July 2025 to July 2026). All these three sites are Public Hospitals; the Lyari General Hospital is a tertiary care hospital catering to the densely populated Lyari area and its surroundings, serving a predominantly low-income population. Lyari is a high-risk zone for HIV and AIDS due to factors such as poverty, drug use and high-risk sexual behaviour.[16] Abbasi Shaheed Hospital, situated in Nazimabad, is one of Karachi's largest public sector hospitals and provides healthcare services to residents of central and western districts, with a significant patient flow due to its strategic location.[17] 'Dr Ruth KM Pfau Civil Hospital Karachi' is located in the city centre near Saddar, is a historic and one of the largest teaching hospitals in Sindh, serving a vast catchment population, including referrals from across the province, with high patient turnover and a broad range of specialties.[18]

Sample size calculation

Considering a 55% proportion for HSR,[19] 95% CI and 5% margin of error, at least 381 individual participants will be required for the study.

Study Participants

Purposive sampling technique will be used to select participants based on the following eligibility criteria.

Inclusion criteria

PLHIV having age >18 years, receiving treatment for at least 12 months registered in one of the selected ART centres will be included.

Exclusion criteria

HIV-positive individuals who are critically ill and unable to communicate in Urdu or English will be excluded from the study.

Data collection tool

A data collection tool aligned with the framework of HSR was adapted from literature.[20] This validated tool consists of sociodemographic variables, such as age, gender, sex at birth, education, marital status, occupation and income. It also includes health service accessibility factors, such as travel time, as well as individual factors, such as perceived satisfaction. Lastly, the WHO responsiveness domains are included: two items of early attention; four items of respect and communication each; three items of autonomy, confidentiality, choice and quality of basic amenities; and one item of access to social support networks, which includes 13 items.[21] The questionnaire is provided in the online supplemental material. Responses are measured using four- or five-point Likert scales, depending on the parameter. This English tool was translated into Urdu (which is commonly spoken in Karachi) by language experts and back translated to English for translation validity and consistency. Pilot testing will also be conducted (see figure 2).

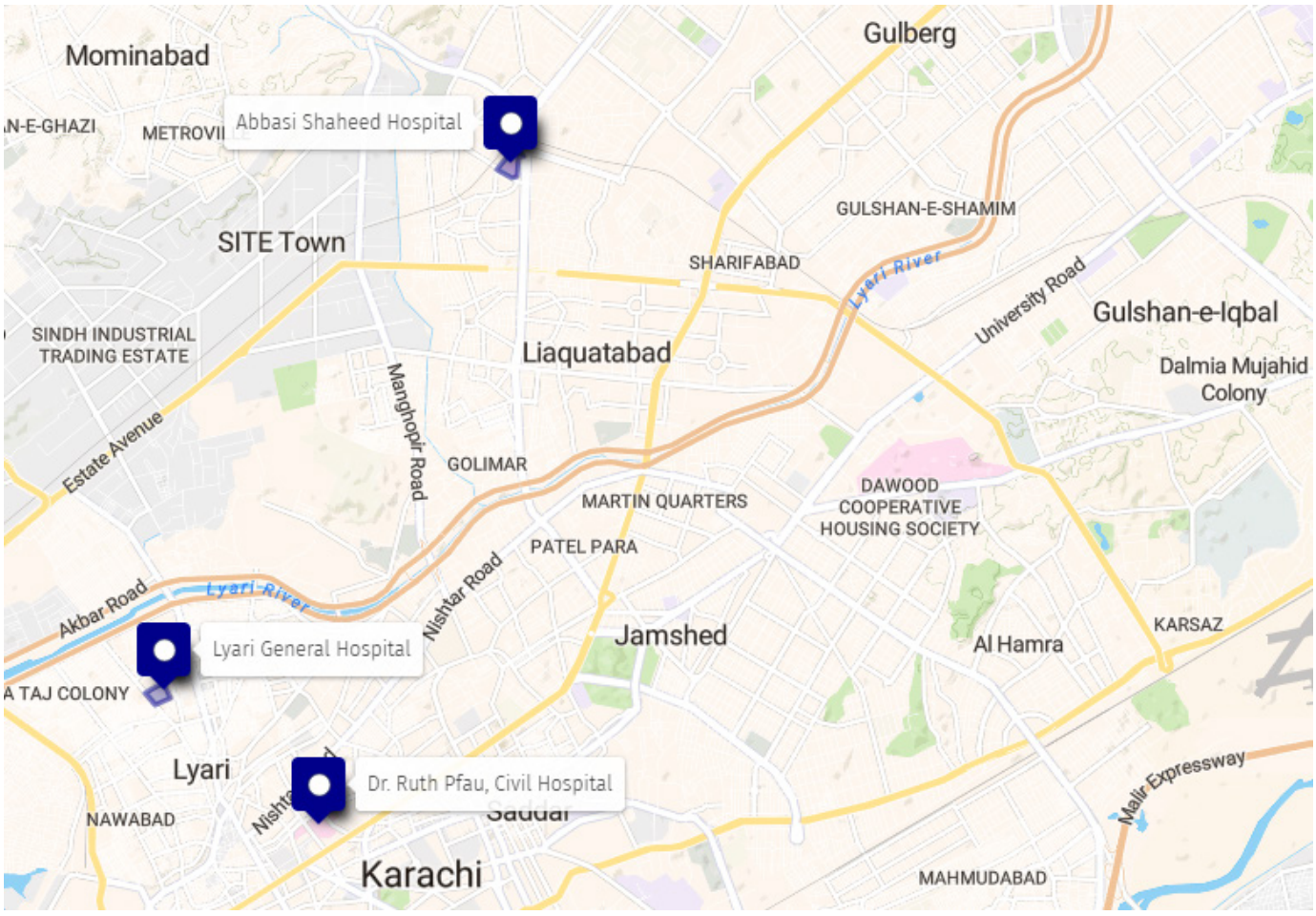

Figure 1 Three selected study sites in Karachi.

Data collection procedure

Participants will be purposively selected. The participants who will meet the specified inclusion criteria and are willing to provide informed consent will be included. After obtaining informed consent, interviews will be conducted by professional interviewers in a private room within the ART centres, which will take approximately 20 min. No facility staff will be present during the interview, and they will not be allowed to view or hear the patients' responses, in order to receive unbiased opinions. There is no requirement for follow-up of participants. Epicollect 5 software will be used for the collection of data.

Data analysis

Descriptive statistics for qualitative data (gender, sex at birth, marital status and partner HIV status) will be computed as frequencies and percentages. The quantitative continuous data, such as age, income, years of marriage and number of children, will be computed as the mean and SD. If data is not normally distributed, then the IQR and median will be reported.

The explanatory variables in this study will include participants' age in years, gender and sex at birth, along with whether they currently identify with the same sex assigned at birth. Relationship status will also be assessed, including whether the participant is in a stable relationship, marital status, years of marriage, number of wives and whether they have another partner in a stable relationship. Additionally, the study will capture knowledge of the partner's HIV status and, if known, the specific HIV status of the partner. Other variables will include the number of children, educational level, religion, occupation and monthly income.

The outcome or dependent variable is the HSR. This outcome consists of the evaluation of seven distinct domains of responsiveness. To determine the overall outcome variable, a dichotomous approach will be employed, wherein the total score will be compared against a predetermined threshold. This threshold will be established by using the formula: (total highest score − total lowest score)/2) + total lowest score.[22] Consequently, individuals who achieve a score of 78 or higher will be classified as exhibiting 'satisfactory' HSR, whereas those scoring below will be categorised as 'unsatisfactory'. Accordingly, the determination of satisfaction in each element will also be calculated by the threshold formula in relation to the defined outcome variable(s).[23]

Descriptive statistics will be employed alongside binary logistic regression analysis. The collinearity of all variables will be assessed. During the bivariable analysis phase, a significance level of $p<0.20$ will be used to

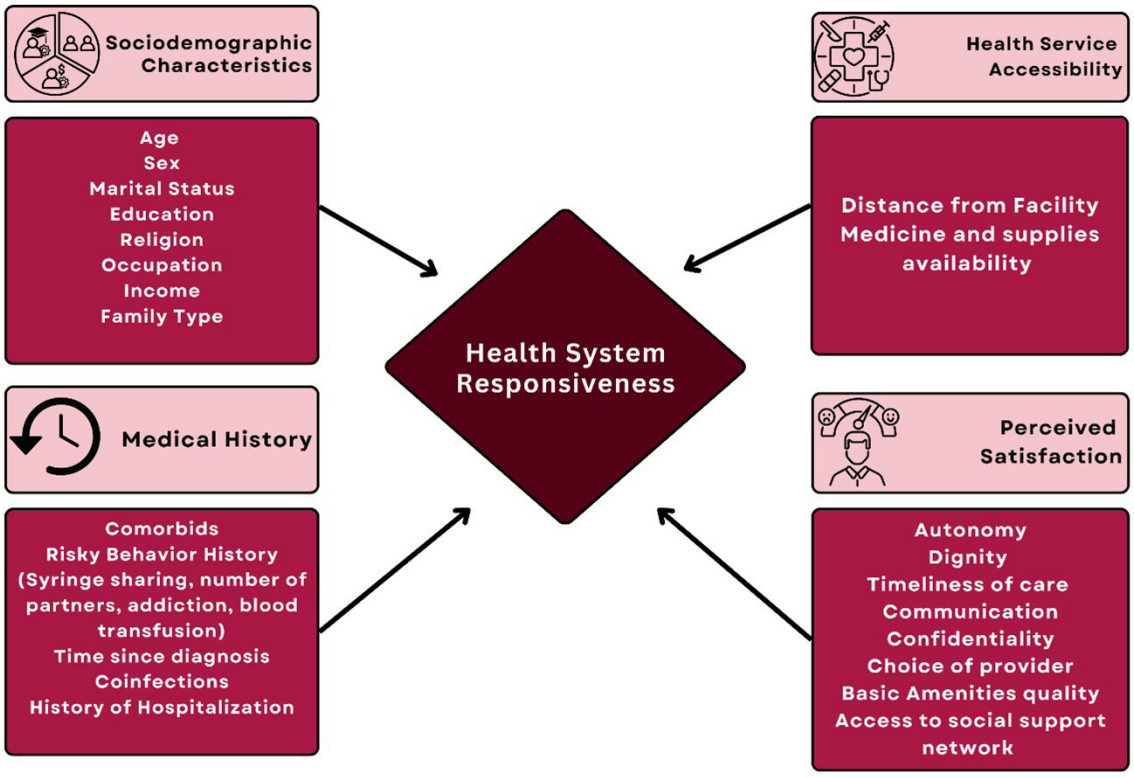

Figure 2 The health system responsiveness framework.

identify potential variables that can be considered in the multivariable analysis. Within the model, significance will be determined by a p value of less than 0.05, and factors significantly associated with health system performance will be declared based on an adjusted OR. Stata version 17.0 will be used to conduct data analysis.

Patient and public involvement

Patient and the public were not engaged in the designing and development of this study protocol; however, during the pilot testing, their input will be taken and considered to improve the questionnaire before starting the data collection.

Ethics and dissemination

Trained data collectors, representing the research team who have a better understanding of the native language, will initiate the process of obtaining informed consent from the study participants by introducing themselves and the study's purpose in a private room at the ART centre. Respect for autonomy will be upheld by honoring participants' rights to make informed decisions about their involvement in the study, particularly with respect to sensitive health-related information. Measures will be taken to minimise harm or distress to participants, with appropriate support and referral services provided, if needed. Non-discrimination will be ensured by treating all participants with fairness and respect, regardless of factors such as HIV/AIDS status or socio-economic background. To support participants, mechanisms such as counselling or referral services for those who experience distress during the study can be provided. Approval has been obtained by the ethical review committee of the Aga Khan University Hospital (Ref No: 2024-9960-31694), and official permission has been obtained by the additional district health officer of the local government. Dissemination plan includes communication of the findings to stakeholders, such as professionals from the provincial government and private institutions to ensure the results inform policy at the local level. In addition, the study outcomes will be showcased at local and international conventions to reach a broader audience. Finally, the findings will be submitted for publication in a reputable peer-reviewed journal, fostering further research and dialogue on this topic.

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Contributors MB conceptualised the study; JM worked on designing the framework and data collection tool; and all authors were involved in the development of the protocol. FM performed the final review. All authors read the protocol and consented to its publication. MB is the guarantor of this study and takes responsibility for its publication.

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