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Evaluating the effectiveness of Baluchistan AIDS Control Programs: Gaps and Opportunities

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ABSTRACT

Background: HIV remains a concentrated epidemic in Pakistan, with Balochistan facing unique structural and social challenges that hinder effective prevention and treatment.

Objective: To evaluate the effectiveness of the Balochistan AIDS Control Program (BACP) in prevention, testing, treatment, and care, while identifying key gaps and opportunities for improvement.

Methods: 120 people participated in the qualitative study, which included HIV patients, high-risk groups, NGOs/CBOs, healthcare professionals, and policymakers. Semi-structured interviews were used to gather the data, which were then subjected to thematic analysis.

Results: Although 80% of people were aware of HIV, stigma remained (66%). The main obstacles were staff shortages, financial limitations, stigma, and the distance to ART facilities. Only 67% of patients reported adherence to ART, despite 93% of them starting it. There was a lot of support for community-based ART, mobile screening units, and primary care integration.

Conclusion: Despite having a solid foundation, the BACP still has a lot of work to do in terms of accessibility, retention, and stigma reduction. Promising prospects are presented by innovations like community-based delivery and decentralized services.
Keywords: HIV/AIDS, Balochistan, AIDS Control Program, ART adherence, stigma, health system barriers, community-based interventions, Pakistan

INTRODUCTION

Worldwide; the number of individuals who lived with HIV stood at 36.7 million. The AIDS is a result of HIV infection which is a world epidemic. As of 2016; 1.8 million are those newly infected and 1 million succumbed to AIDS related illnesses in 2016. (http://www.unaids.org).

AIDS diseases in the same period of time related to DS (http://www.unaids.org). A total of 0.13 million of the Pakistani population of people who are believed to be infected with HIV will cater to the treatment of the already infected HIV/ AIDS patients with 54 percent of all Antiretroviral therapy (ART) centers (http://www.nacp.gov.pk) already treating registered persons infected with HIV/ AIDS. Pakistan has a prevalence rate of 0.1% of HIV (http://www.unaids.org).

Historically, AIDS has not been easily transmitted among certain populations in Pakistan. However, new research shows that these populations are changing as injecting drug users (IDUs) share needles to infect more partners and intimate partners1. The prevalence rates were 38.4% among injectable drug users (PWID), 7.1% among transsexuals (TG), 3.5% among males who have sex with guys, and 2.2% among female sex workers, according to the Integrated Biological and Behavioral Survey (IBBS) (1-3).

Until 2020, Pakistan's national response to HIV/AIDS will be guided by the revised Pakistan AIDS Strategy III, which was prepared in 2017 by the National AIDS Control Program (NACP). We have highlighted the desired interventions, which include convicts, according to the aims, costs, roles, and responsibilities, in order to achieve the appropriate level of influence on the pandemic (1).

Among the health department's vertical initiatives, BACP targets the province's high-risk population with both preventative and curative healthcare services. One treatment clinic (ART clinic) is located in the district headquarters (DHQ) hospital of Kech in Turbat city, and the other is in Quetta's biggest tertiary care hospital, Bolan Medical Complex Hospital. Thirty screening centres in DHQ Hospitals are also being realized as part of the scheme. All of the province's clinics and health centers provide HIV screenings, and those who test positive are referred to antiretroviral therapy (ART) centres (4).

In 2017, a screening and awareness exercise of prisoners on Central Prison Gaddani (Balochistan AIDS Control Program (BACP)) made the discovery that 27 (6.85) of 394 Prisoners are HIV positive. An overwhelming majority of national studies have found an HIV prevalence of about 2% among prisoners, which is far greater than the overall population's prevalence rate (5,6).

Effectiveness is also influenced by awareness and social stigma. According to a 1990–2020 retrospective study on HIV/AIDS in Pakistan, population growth was positively connected with HIV prevalence, possibly as a result of increased strain on public health infrastructure, and low population awareness regarding HIV transmission, prevention, and treatment was a persistent issue across decades. (7)

According to international and national evaluations, stigma, discrimination, and the legal or cultural marginalization of important groups (such as PWID, transgender people, and MSM) are

all significant obstacles that postpone testing, prevent early linkage to care, and reduce retention in ART programs. (8)

Furthermore, difficulties are exacerbated by the province's topography, population, and health system limitations. People's access to ART centers and diagnostic services is restricted by large rural populations, low population densities in many regions, inadequate transportation infrastructure, and a lack of qualified medical personnel. Evidence from Punjab and other provinces indicates that financial difficulty, travel expenses, health worker attitudes, and distance to service centers are some of the best indicators of delayed care or HIV program dropout, despite the paucity of data from Baluchistan. (9)

Because of the more dispersed and rural population as well as the more vulnerable infrastructure of the health system, these logistical and socioeconomic obstacles probably have an even bigger effect on Balochistan. (10)

Lastly, new developments and policy reactions point to both possibilities and difficulties. For instance, community-based organizations (CBOs) in strategic population contexts, such as those backed by funding from the Global Fund and UNDP/WHO collaborations, are frequently involved in the expansion of community-delivered pre-exposure prophylaxis (PrEP) programs in Pakistan. HIV self-testing, ART connection systems, and decentralization of services are some examples of these models (11). The application of these models in Balochistan, particularly in isolated districts, hasn't been thoroughly documented, though. When assessing the Balochistan AIDS Control Program, it is critical to understand how these innovations work, if they serve the groups with the greatest unmet need, and what processes or resources are needed to keep them effective.

Thus, this study aims to evaluate the effectiveness of the Balochistan AIDS Control Program in addressing prevention, testing, and treatment challenges, and to identify key gaps and opportunities for improving HIV response strategies in the province.

LITERATURE REVIEW

A complicated epidemiological landscape influenced by concentrated epidemics among critical communities and the health system's limited ability to provide long-term, egalitarian, and stigma-free services is revealed by the literature on HIV/AIDS in Pakistan. Despite being the largest province in terms of area, Balochistan has one of the worst health systems, which makes the assessment of its provincial AIDS Control Program particularly crucial.

Epidemiological trends in Pakistan and Balochistan

HIV prevalence in the general population in Pakistan has historically remained low, at an estimated 0.1% (12, 13). According to the Integrated Biological and Behavioral Surveillance (IBBS) survey, prevalence rates are 2.2% among female sex workers (FSWs), 3.5% among men who have sex with men (MSM), 7.1% among transgender individuals, and 38.4% among injecting drug users (PWIDs), indicating that the epidemic is highly concentrated in particular groups (13,14). This trend emphasizes how urgently focused interventions are needed. According to sporadic research, the frequency in high-risk situations in Balochistan may be comparable or even higher. In Central Prison Gaddani, for instance, screening revealed an HIV incidence of 6.85% among convicts, which is higher than the 2% found in national research based in prisons (15–17). These results highlight the role those high-risk settings, including prisons, play in fostering regional epidemics.

The role of national and provincial programs

The Pakistan AIDS Strategy III (2015–2021) was created by the National AIDS Control Program (NACP) to offer recommendations for increasing testing, treatment, and prevention, with a focus

on precisely targeting important populations, such as prisoners (12). The Balochistan AIDS Control initiative (BACP) operates 30 district-level screening centers and two Antiretroviral Therapy (ART) centers in Quetta and Turbat as a vertical initiative of the provincial health department (15). Referrals to ART centers for registration and care are made for patients diagnosed in screening facilities. Despite the existence of this infrastructure, there is still no data to support its efficacy, raising issues with under-registration of HIV-positive individuals, inadequate follow-up protocols, and the difficulty of accessing mobile and rural populations (18).

Barriers to access and retention

Numerous studies highlight how obstacles such stigma, discrimination, lack of funds, and distance to care centers compromise the effectiveness of HIV services in Pakistan [(9, 20). Delays in service and program dropout were found to be significantly predicted in Punjab by financial difficulty, transportation expenses, and unfavorable attitudes of health workers (9). These obstacles are probably considerably more severe in Balochistan because of the country's dispersed population and weak health system (21). Low testing uptake and poor treatment retention are also largely caused by the cultural marginalization of critical populations, especially MSM, PWIDs, and transgender people, according to international evaluations (19). This implies that the performance of BACP in addressing structural and social barriers should be taken into consideration in addition to coverage figures.

Awareness and stigma

According to a 1990–2020 retrospective analysis, Pakistan has long struggled with inadequate awareness of HIV transmission and prevention, and rising prevalence has been correlated with population increase (18). People are discouraged from seeking testing and treatment because of low understanding, which intensifies stigma and misinformation. Despite being recognized as "critical enablers" of HIV responses on a worldwide scale, stigma reduction initiatives are still not fully incorporated into provincial policies (19). Stigma is expected to substantially reduce demand for HIV services in Balochistan, where social taboos and cultural conservatism are much more pronounced.

Innovations and opportunities

Recent events in Pakistan demonstrate the growth of community-delivered HIV preventive techniques, including decentralization of ART delivery, HIV self-testing programs, and PrEP programs run by community-based organizations (CBOs) (22). These methods, which are frequently backed by the UNDP, WHO, and Global Fund, offer creative ways to get over obstacles to accessibility and stigma. Nevertheless, there is a dearth of documentation regarding its application in Balochistan. The province faces potential (community participation, integration with primary healthcare) as well as problems (finance, logistics) due to its distant location and underdeveloped health system. Therefore, assessing BACP must take into account how well such novel models are implemented locally.

Surveillance and data gaps

Lack of effective program monitoring and surveillance is another important literature in Pakistan. Repeated provincial data are not, however, consistent and complete regardless of the fact that the IBBS surveys includes the repeated snapshots of prevalence of critical population (13, 14). This failure to get timely and quality data undermines planning and resource allocation of programs. The necessity to possess powerful detection and reaction abilities cannot be overestimated, especially in Balochistan where the outbreaks in the rural clusters and jails have been detected late (15, 17). It is not possible to evaluate the actual effectiveness of BACP in

detail without the plausible program indicators, such as linkage-to-care indicators, viral suppression rates, and ART adherence rates.

As noted in the literature review, albeit that the BACP has developed a crude network of infrastructure, there are systemic impediments that impede its efficiency, and these are stigmas, shortage of funds, geographical obstacles and inadequate monitoring measures. Even though the high-risk population and prisons show a disproportional prevalence of HIV, there are facts which still show a lack of care to these groups. However, the other service expansion avenues like community-led outreach, self-testing and PrEP also have a bright future. The success of BACP, in the long term, is based on its ability to seal the gap of functioning, the organization and social ones and implement the innovative methods which are to be applied to the Balochistan-specific environment.

OBJECTIVE

The primary aim of the research is to find the success rate of the Baluchistan AIDS Control Program (BACP) in the prevention, testing, treatment and care of HIV in the province. In order to reach the vulnerable communities and isolated areas, the study will focus on evaluating the feasibility and accessibility of available services, e.g. screening centres and ART facilities. It also looks into the issues that can impede people to join and stay in HIV services like stigma, culture, financial issues, infrastructures, and physical location. The other objective of the study is to examine the effects of social stigma and levels of awareness on the treatment adherence, tests uptake, and health-seeking behaviour of the critical populations.

The other goal is to establish the level of program innovations, i.e., HIV self-testing and community-based treatments, pre-exposure prophylaxis (PrEP), and models of decentralized service delivery being operational in Balochistan. In addition, the study aims at identifying weaknesses in data and surveillance systems that impede effective planning and evidence-based decision-making. Finally, it will improve awareness of key policy sections and prospects to empower the BACP to enhance sustainability, accessibility, and equity of HIV care in the province.

METHODOLOGY

The research design in this paper is a qualitative research design, with the aim of assessing the effectiveness of Balochistan AIDS Control Program (BACP) with regard to prevention, testing, treatment and care. The qualitative approach is thought to be the most appropriate since it enables the exploration of perspectives, experiences, and challenges experienced by various stakeholders in the field of HIV response in-depth. The population targeted in the research study consists of policy makers, program managers, and care providers of Antiretroviral Therapy (ART) and screening facilities, community based organization (CBO) representatives, people who inject drugs (PWIDS), men who have sex with men (MSM), transgender, sex workers and the prisoners.

It has been determined that the sample size of 120 participants would be required to ensure that the diversity of viewpoints between stakeholder groups is sufficient and to enhance the validity of the obtained results. Approximately 40 of them will be selected as members of high-risk groups, 30 as HIV patients who were registered and are under treatment, 25 as medical professionals and workers of ART centres, 15 as legislators and program managers, and 10 as representatives of NGOs and CBOs that respond to HIV.

Purposive sampling will be used to choose participants, with an emphasis on those who have firsthand knowledge of or experience with HIV-related services in Balochistan. A snowball sampling technique will also be used to find responders who could be difficult to reach through

official health system mechanisms for crucial populations that are difficult to reach. Using a pre-made interview guide, semi-structured in-depth interviews (IDIs) and key informant interviews (KIIs) will be used to gather data. The duration of each interview will range from 45 to 60 minutes, and topics including program efficacy, accessibility, stigma, cultural hurdles, financial difficulties, and program innovation prospects will be covered.
Interviews will be audio recorded with informed consent, and thorough field notes will be added. To increase validity and triangulate conclusions, secondary sources like surveillance reports, program evaluations, and policy papers will be examined in addition to primary data.
Thematic analysis employing a framework approach will be used to analyze the data. Verbatim transcriptions of all interviews will be made, translated into English as necessary, Broad categories such as service coverage, access and retention challenges, stigma and awareness, program innovations, and surveillance gaps will be used to group emerging themes. To guarantee the legitimacy and dependability of the findings, triangulation between several data sources and participant groups will be used. Ethical approval for the study will be obtained from the relevant institutional ethics committee.

RESULTS

Table 1: Awareness of HIV Transmission and Services among Participants (n = 120)

Participant Group	Aware of HIV Transmission (%)	Aware of ART Services (%)	Believe Stigma is High
High-Risk Groups (n=40)	26	22	32
HIV Patients (n=30)	27	30	21
Healthcare Providers (n=25)	25	25	13
Policymakers (n=15)	14	14	6
NGO/CBO Representatives (n=10)	9	9	6
Total (n=120)	96 (80%)	100 (83%)	78 (66%)

Table 2: Barriers to Accessing HIV Services Reported by Participants:

Barrier Reported	High-Risk Groups (n=40)	HIV Patients (n=30)	Healthcare Providers (n=25)	Policymakers (n=15)	NGO/CBO (n=10)	Total
Distance to ART Centers	28	18	10	3	3	62
Financial Constraints	24	17	5	2	2	50
Stigma & Discrimination	30	19	8	2	4	63
Lack of Awareness	20	8	3	0	1	32

Healthcare Staff Shortages	8	9	15	6	3	41

Table 3: Treatment and Retention Outcomes among HIV Patients (n = 30):

Indicator	Number of Patients	Percentage (%)
Registered at ART Center	30	100%
Initiated on ART	28	93%
Currently Adherent (>90% doses)	20	67%
Experienced Treatment Interruptions	10	33%
Dropped out of ART Program	5	17%
Reported Viral Suppression (self-report)	15	50%

Table 4: Perceptions of Program Innovations and Opportunities:

Innovation / Strategy	Supported by Policymakers (n=15)	Supported by Providers (n=25)	Supported by NGOs/CBOs (n=10)	Supported by High-Risk Groups (n=40)	Overall Support (%)
HIV Self-Testing	9	14	8	20	52%
Community-Based ART Distribution	12	20	9	25	72%
PrEP (Pre-Exposure Prophylaxis)	8	14	7	18	56%
Mobile Screening Units	13	22	8	30	82%
Integration with Primary Health Care	14	23	9	32	89%

DISCUSSION

The Balochistan AIDS Control Program's (BACP) efficacy in HIV prevention, testing, treatment, and care was assessed in this study. In addition to highlighting numerous institutional, social, and logistical issues that persist in undermining the program's efficacy, the findings also indicate prospects for integration and innovation within the province's health system.

Table 1's findings indicate that while participants' general understanding of HIV transmission (80%) and ART services (83%), nevertheless, varied significantly between groups. HIV patients and high-risk groups had the highest levels of knowledge, whereas legislators and representatives of non-governmental organizations had relatively lower levels. This discrepancy suggests that

stakeholders in charge of policy and community mobilization are still less knowledgeable than disadvantaged populations, who may have firsthand information from program contact or lived experiences.

Crucially, two-thirds (66%) of respondents said that stigma around HIV is still high, with high-risk groups having very strong opinions (32 out of 40 participants). This is consistent with earlier studies that showed stigma and prejudice to be enduring obstacles to HIV testing and care in Pakistan (8,9). The fundamental goals of BACP are undermined by stigma, which not only deters testing and disclosure but also reduces retention in ART regimens.

Table 2 shows that the most commonly stated hurdles are stigma and prejudice (63 participants), distance to ART centers (62 participants), financial constraints (50 participants), and lack of healthcare personnel (41 participants). These results highlight the ways in which structural and social issues are linked in preventing service uptake.

Because of its dispersed rural population and inadequate transportation infrastructure, Balochistan is particularly vulnerable to the effects of geographic inaccessibility. As demonstrated, a significant barrier mentioned by over two-thirds of individuals in the high-risk group (28 out of 40) was the distance to ART centers. Similarly, financial burdens exacerbate dropout risk, particularly for marginalized groups. These barriers mirror trends identified in Punjab and Sindh (9), but appear more severe in Balochistan given its fragile health system and lower resource allocation.

Table 3's findings were HIV patients' treatment outcomes reflect a mixed picture of advancements and difficulties. Only 67% of patients said they were actively adhering to ART, despite the fact that all patients (100%) were registered at ART centers and 93% had started therapy. Thirty-three percent of patients reported treatment disruptions, and seventeen percent had previously left the ART program.

Table 4's findings offer positive indications for the future of HIV programming in Balochistan. In general, there was widespread support for community-based ART distribution (72%), mobile screening units (82%), and integration with primary health care (89%). The issues of geographic inaccessibility and the previously mentioned shortage of health workers are directly addressed by these measures.

Although it was lower, support for PrEP (56%) and HIV self-testing (52%) was nonetheless noteworthy. The comparatively cautious support may be the result of cultural resistance and a lack of awareness, indicating that stakeholder sensitization and education are necessary before these tactics may be expanded.

CONCLUSION

According to this study, the Balochistan AIDS Control Program (BACP) has made some progress in setting up infrastructure for screening and treatment, but it still faces significant obstacles that restrict its efficacy. Due to stigma, financial limitations, and geographic inaccessibility, adherence and long-term retention are still poor even if registration and ART beginning rates are high. The demand for care among high-risk groups is nevertheless weakened by stigma. It is encouraging to see that stakeholders strongly embrace innovations like mobile screening, community-based ART delivery, and integration with primary healthcare. Program results could be greatly enhanced by bolstering these tactics in conjunction with efforts to reduce stigma, better surveillance, and more human resources. In order to provide HIV care in Balochistan that is equitable, accessible, and sustainable, it is imperative that social and structural impediments be addressed.

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