HIV/AIDS - Research and Palliative Care

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ORIGINAL RESEARCH

Accelerating Success of HIV/AIDS Control Programs: The Significance of Health-Care Workers' Competence

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Background: - Despite the competence-building framework and interventions, the success of HIV/AIDS prevention and treatment programs remains unsatisfactory with scanty empirical evidence on the significance of professional competence to the success of HIV/AIDS control programs.

Methods: - Using a triangulation of quantitative and qualitative data, from 40 health-care workers and 9 managers of the HIV/AIDS program in Kagadi District, this article analyzes the professional and cultural competencies among health-care workers and the significance of the competencies to the success of HIV/AIDS control programs. Descriptive statistics were generated to describe health-care workers' opinions on their competence and success of HIV/AIDS control programs. In addition, a regression model was fitted to estimate the contribution of health-care workers' competence to the success of HIV/AIDS control programs. This quantitative analysis was triangulated with a thematic analysis of key informants' views.

Results: - Findings indicate that health-care workers' competence bears a positive statistically significant contribution to the success of HIV/AIDS control programs. Employee competence is necessary but not sufficient to foster the full realization of desired results from HIV/AIDS control programs.

Conclusion: - Managers of HIV/AIDS control programs need to prioritize and continuously train health-care workers to boost their professional and cultural skills to effectively deliver interventional activities under HIV/AIDS control programs. Additionally, improving the working environment of health-care workers is critical to improve their motivation towards greater success of HIV/AIDS control programs.

Keywords: health-care workers, employee competence, HIV/AIDS, programs, success

Introduction

The Human Immunodeficiency Virus (HIV) dates back to 1983 when a retrovirus termed HIV was isolated from a patient with AIDS in France.[1] In 1987, the HIV/AIDS epidemic became the greatest challenge in global health, with 34 million persons living with HIV worldwide, at the time. In response to the pandemic, HIV/AIDs control programs emerged addressing with a focus on, prevention and treatment. Capacity building to improve HIV-prevention programs and monitor the delivery and outcomes of prevention services has remained a key area of focus within the HIV/AIDS prevention and control programs.[2] The significance of competence building to the success of HIV/AIDS control programs leverages the Competence-Based Management Theory (TCBMT);[3] The theory describes how organizations gain high performance. The theory underscores the significance of competence in the realization of performance goals. It identifies the need for organizations' employees to have the necessary knowledge and skills to execute their roles within the dynamics of the external environment and its internal processes. In the context of the implementation of an HIV/AIDS program, the theory opens insight potential significance of employee competencies to the realization of greater success of HIV/AIDS control

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programs. Conceptually, the success of the HIV/AIDS control program is the extent to which epidemic control measures achieve the goals of control, elimination, and eradication of the epidemic.[4–7] Successful implementation of HIV/AIDS programs has been linked with employee competence in precious studies.[8–10] Notably, these studies, however, are in the health-care systems in developed countries.

In the context of Uganda, the HIV/AIDS Country Progress Report (2017), estimates the population of people living with HIV/AIDS at 1.3 million people. Kagadi Hospital, which is the area of study, had a total number of 4183 hIV/AIDS clients. HIV prevalence among the Key Population remains high at 12.8% above the 9.8% national average (KDLG, 2021). Building health-care workers' competence in Uganda has remained on the agenda of HIV. AIDS control strategy since 1986 when the ABC program was introduced. Since then, more HIV/AIDS prevention and treatment measurements have been adopted with a focus on building health-care workers' competence to match the standards of processes, outputs, and desired outcomes from the programs. More recently, competence building was mainstreamed in the HIV/AIDS integrated testing and treatment programme (MOH, 2016), the HIV policy (MOH, 2016), the VCT policy (2016), as well as the District Strategic Plan against HIV (KDLG, 2021). Additionally, the minimum competence in terms of qualification and experience of health-care workers is provided in the Public Service Job description manual (MOPS,2010). Additionally, the Directorate of Health Services of Kagadi District with support from private partners such as Baylor Uganda, IDI, and CDC periodically organizes competency-building workshops towards the successful delivery of HIV/AIDS prevention and treatment programs.

Despite the competence-building framework and interventions, the success of HIV/AIDS prevention and treatment programs remains unsatisfactory. Besides, the competence levels of staff remain an issue of concern although with no empirical evidence in the context of HIV/AIDS prevention and treatment programs at Kagadi Hospital. Despite the implementation of the Accelerating HIV&TB Control Program Phase 1 and the current Phase II of this program in the Bunyoro region, the HIV prevalence among key populations remains high at 12.8% above the 6.! % national average (KDLG, 2021). HIV patent retention was estimated at 70% lower than the 90% target.[6] The report further indicated that only 51% of the adults aged from 15 to 49 had taken an HIV/AIDs test and knew their serostatus and viral load suppression was at 80% far below the UNAIDS targets of 90% by 2020.[6] This state of HIV/AIDS remains a threat to the achievement of sustainable development. Building on the existing empirical evidence on health-care workers' competence and success in HIV prevention and treatment programs,[11] this article analyzes the health-care workers' competence and its implication for the success of HIV/AIDS control programs in Kagadi district taking a case of Kagadi Hospital.

Despite extensive efforts to build health-care workers' competence and implement comprehensive HIV/AIDS control programs in Kagadi District, Uganda, the success of these programs remains suboptimal. Given the persistent high HIV prevalence among key populations and low rates of HIV patient retention and viral load suppression, there is a critical need to understand the underlying factors affecting program effectiveness. This study seeks to address this gap by exploring the central research question:

> "How does the competence of healthcare workers impact the success of HIV/AIDS control programs in Kagadi District, Uganda, particularly at Kagadi Hospital?"

By investigating this relationship, the study aims to uncover insights into how health-care workers' skills and knowledge influence the overall success of HIV/AIDS prevention and treatment efforts, thereby contributing to more effective strategies and improved health outcomes in the region.

Literature

Conceptually, the success of the HIV/AIDS control program is the extent to which epidemic control measures achieve the goals of control, elimination, and eradication of the epidemic.[4] This view is also shared by;.[4–7] In the context of the goals of HIV prevention and treatment programs in Uganda and Kagadi Hospital, HIV/AIDS control concerns the reduction of HIV incidence, prevalence, or mortality in a geographically defined area to a locally acceptable level via effective interventions. It reflects considerable improvement in the status quo. In the long run, elimination becomes meaningful as it concerns the reduction of the incidence or disease transmission to zero which means zero new infections.[4,5,7] Elimination of incident infections is achievable amidst disease prevalence for as long the prevention measures are effective and sustained. Elimination

of transmission is more feasible for transmission attributable to blood transfusions and mother-to-child transmission because prevention interventions are currently available within the medical setting and are very effective.[4] The interventions include: testing all donated blood, HIV testing for all pregnant women and providing lifelong ARV therapy for positive mothers, providing appropriate prophylaxis at the time of birth, and following the breastfeeding guidelines established by the World Health Organization.[4,6] Reducing mortality or elimination of mortality is also a possible goal as treatment measures represent increasing levels of success concerning ending disease incidence, HIV-related mortality among PLWH. Treatment enhances viral load suppression and minimizes the chances of HIV/Aids mortality.

In the context of this article, therefore, success of HIV/AIDS control programs is defined by the extent to which HIV/AIDS prevention, care and treatment interventions eliminate new infections, reduce the prevalence of HIV/AIDs, and reduce AIDS-related mortality. Success is operationalized in terms of HIV prevalence, transmission, and viral load suppression. Prevalence is the existence of HIV in a given population at a specific time. Success in control of HIV/AIDS is expected to lower the provenance level below the programme target. Transmission is the movement of HIV from a positive person to a person who is negative of the virus as indicated by the number of new infections. Transmission is a proxy which will reflect HIV elimination. Finally, viral load suppression as an indicator of effective HIV/AIDS treatment is in this study defined as having less than 200 copies of HIV per millimetre of blood. The higher the viral load suppression the greater the success of the HIV/AIDS control programme.

Successful implementation of HIV/AIDS control programs necessitates key competencies gained from formal education or training in the health-care profession also known as professional competence blended with the skills learned through practical exposure and experience in different socio-cultural contexts also known as cultural competence.[8–10] These studies provide different types of competencies required by health-care workers to successfully implement HIV/AIDS control programs which can broadly be categorized into professional competence and cultural competence. A combination of these two broad categories of competencies is ideally required by nurses to successfully implement HIV/AIDS control programs, including specifically, HIV/AIDS prevention, care, and treatment.[8,9]

Professional competence includes technical, ethical, and legal knowledge mainly acquired through professional training in the fields relevant to HIV/prevention, care, and treatment.[8,9,12] In contrast, cultural competence deals with the knowledge and skills to handle the different cultural norms and beliefs about HIV/AIDS, and its preventative and treatment measures which shape the perceptions and adoption of behavioral change practices and ultimately impact the success of the HIV/aids control programme.[9,10] These classical definitions of professional and cultural competence will therefore be used to operationalize the competence of health-care workers in this study.

The above studies generally argue that successful implementation of HIV prevention and treatment services necessitates not only professional competence but also cultural competence accustomed to the cultural dynamics in the face of cultural, traditional norms and beliefs within which HIV/AIDS control programs are implemented. However, the studies remain in the context of developed countries such as the USA and Canada where the competence challenges could differ significantly from developing countries due to the difference in socio-economic contexts. Although the need for building the competence of health-care workers has been underscored in strategic frameworks and programs for HIV/AIDS, there is no empirical evidence to indicate the existing competencies among health-care workers and the effect of the competencies on the success of HIV/AIDS control programs.

Methodology

The study was contextualized to the health care workers in Kagadi District due to the low success of HIV/AIDS prevention and treatment programs despite the existing framework for HIV/AIDS competence building among Health Care Workers. The rationale for selecting Kagadi District as the study site is rooted in the district's ongoing challenges with HIV/AIDS prevention and treatment programs, despite the presence of a structured framework for HIV/AIDS competence building among health care workers. Kagadi District was chosen due to its reported difficulties in achieving desired outcomes in HIV/AIDS control, which provides a critical context for evaluating the effectiveness of current practices and identifying areas for improvement. Additionally, focusing on this district allows for a detailed examination of local factors influencing health care workers' competence and program success, thereby offering insights that can inform targeted interventions and contribute to the broader understanding of HIV/AIDS management in similar settings.

Recognizing the need to explore this issue comprehensively, we employed a cross-sectional survey design with a convergent parallel mixed-methods approach. This approach was selected to simultaneously collect and analyze both quantitative and qualitative data, allowing for a robust comparison and triangulation of findings. The study used a cross-sectional survey design with a mix of quantitative and qualitative methods to collect and analyze the data which leverages the findings in this paper. The study employed a triangulation method to integrate and cross-validate findings from both the quantitative and qualitative components. This approach aimed to provide a more comprehensive understanding of the relationship between health-care worker competence and the success of HIV/AIDS control programs in Kagadi District. In the convergent parallel design, quantitative and qualitative data were collected independently but concurrently. This design enabled us to compare and contrast the results from both methods in the interpretation phase, ensuring a comprehensive understanding of the research problem. The quantitative data provided generalizable insights into the relationship between health-care workers' competence and the success of HIV/AIDS control programs, while the qualitative data offered in-depth perspectives from key informants. To standardize responses for quantitative analysis to test the hypotheses, a close-ended questionnaire was administered to 40 randomly selected Clinical staff and Community Health Care Workers. The sample size was determined using Krejcie and Morgan's table Simple random sampling premised on the need to eliminate bias to allow quantitative analysis to test the hypotheses as recommended by.[13] The questionnaire was designed with statement testing health care workers' opinions on their competence and success of HIV/AIDS control programs The questions were measured on a five-point Likert scale *[1=strongly disagree, 2=disagree, 3=non-committal, 4=agree, and 5= strongly agree]*. The questionnaire used in this study was specifically developed to assess the competence of health-care workers and the success of HIV/AIDS control programs in Kagadi District. The items were designed based on a thorough review of existing literature and frameworks related to health-care worker competence and HIV/AIDS prevention strategies. While the questionnaire was tailored to the specific context of this study, it was informed by concepts and items from existing validated instruments in the field, ensuring relevance and alignment with established measures. The questionnaire was pre-tested with a small group of health-care workers to ensure clarity, reliability, and validity before full deployment. In addition, face-to-face interviews were conducted with 9 purposively selected Managers and Leaders in the implementation of HIV/AIDS control programs. The key informants were selected using theoretical sampling and interviewed until saturation point as scientifically recommended by.[14] The Key Informant Interviews (KIIs) were selected as a method of data collection due to their effectiveness in gathering in-depth insights from individuals with specialized knowledge and experience in HIV/AIDS control programs. KIIs were particularly suitable for this study because they allowed for the exploration of nuanced perspectives and contextual factors that may not be captured through quantitative methods alone. A semi-structured interview guide was developed to ensure consistency across interviews while allowing flexibility for interviewees to share additional relevant insights. The guide included questions such as: What are the key challenges you face in implementing HIV/AIDS control programs in Kagadi District? How do you perceive the competence of health-care workers in relation to the success of these programs? Can you describe any specific instances where health-care worker competence directly influenced program outcomes? What support systems are in place to enhance the competence of health-care workers? How do community dynamics affect the implementation and success of HIV/AIDS control initiatives? These guide questions were designed to elicit detailed responses that would complement the quantitative data, providing a comprehensive understanding of the factors influencing the success of HIV/AIDS control programs in the district.

For the quantitative component, participants were included if they were employed in health-care facilities within Kagadi District, actively involved in HIV/AIDS prevention and treatment programs, and willing to complete the questionnaire. Conversely, those not engaged in HIV/AIDS programs or employed outside Kagadi District were excluded. For the qualitative component, key informants were selected based on their managerial or leadership roles in HIV/AIDS control programs and their significant experience in program implementation. Individuals not in such roles or without relevant experience were excluded. These criteria ensured that our sample was both relevant and representative, thereby enhancing the validity of our findings.

The qualitative component of this study employed a phenomenological research design. This approach was chosen to explore and understand the lived experiences and perceptions of managers and leaders involved in the implementation of HIV/AIDS control programs in Kagadi District. Phenomenology is particularly suited to this study as it allows for an in-

depth exploration of how these key informants experience and interpret the challenges and successes of HIV/AIDS programs within their specific socio-cultural and organizational contexts. The choice of a phenomenological design was driven by our aim to capture the essence of the participants' experiences regarding the competence of health-care workers and the effectiveness of HIV/AIDS prevention and treatment programs. By focusing on their firsthand experiences, this design enables us to uncover the underlying meanings and insights that may not be apparent through quantitative data alone. Descriptive statistics were generated to draw general trends in opinion regarding the success of HIV/AIDS control programs and health-care workers' competence. In addition, a regression model was fitted to estimate the contribution of health-care workers' competence to the success of HIV/AIDS control programs. This quantitative analysis was triangulated with a thematic analysis of key informants' views. The convergent parallel design allowed us to compare the quantitative results with the qualitative findings during the interpretation phase. Descriptive statistics and regression analysis provided quantitative insights into the general trends and relationships, while thematic analysis of the qualitative data offered nuanced, contextualized understanding. The integration of both data sets in the discussion ensured that our findings were both comprehensive and reflective of the real-world complexities of HIV/AIDS program success in Kagadi District. By employing a convergent parallel mixed-methods design, this study was able to provide a comprehensive analysis of the factors influencing the success of HIV/AIDS control programs in Kagadi District. The integration of quantitative and qualitative data allowed us to draw more robust and actionable conclusions, which we hope will contribute meaningfully to the field. In analyzing the qualitative data, we employed an inductive approach. This approach was chosen to allow themes and patterns to emerge naturally from the data, rather than imposing predefined categories or frameworks. The inductive analysis enabled us to capture the nuances of health-care workers' and key informants' experiences and perspectives related to HIV/AIDS prevention and treatment programs. Thematic analysis was conducted by coding the interview transcripts and identifying recurring themes, which were then grouped into broader categories relevant to the research questions.

The study was approved by the Institute Research and Innovation Centre Research Ethics Committee (IRIC-REC) under approval number IRIC-2023-37. Additional permission was obtained from the administration of the study facility. During the data collection process, all participants were informed about the purpose of the study, the voluntary nature of their participation, and the confidentiality measures in place to protect their identities. Specifically, they were made aware that any responses or direct quotes used in the study would be anonymized to ensure that their personal information remained confidential. This consent was obtained to ensure ethical standards were upheld throughout the research, particularly in the reporting and dissemination of findings.

Validation of Data

To ensure the accuracy and reliability of the data collected through both quantitative and qualitative methods, the study implemented several validation strategies:

Quantitative Data Validation

- **Pilot Testing**: Before full deployment, the questionnaire was pilot-tested on a small group of health-care workers not included in the final sample. This process helped refine the questions for clarity and relevance, ensuring that respondents could understand and accurately answer the questions.
- **Reliability Testing**: The internal consistency of the questionnaire was assessed using Cronbach's alpha, with a value of 0.70 or higher indicating acceptable reliability. This step ensured that the questionnaire items consistently measured the intended constructs.
- **Content Validity**: Expert feedback was sought during the development of the questionnaire to ensure that the questions comprehensively covered the constructs of interest, such as health-care worker competence and the success of HIV/AIDS programs.

Qualitative Data Validation

- **Member Checking**: After conducting the Key Informant Interviews (KIIs), summaries of the key points were shared with the interviewees to confirm the accuracy of the data. This process helped ensure that the findings accurately reflected the participants' views.
- **Triangulation**: As part of the triangulation process, qualitative data was cross-validated with the quantitative findings to ensure consistency and credibility. Any discrepancies were further explored to refine the interpretation of the results.
- **Peer Debriefing**: The qualitative data analysis process was reviewed by other researchers not directly involved in the study to provide an external check on the research process, ensuring that the themes identified were valid and credible.

These validation measures strengthened the study's credibility, ensuring that the findings are both reliable and valid across the different data collection methods. To effectively present the triangulated data, the study utilized a combination of tables and charts, ensuring clarity and ease of interpretation as shown in Table 1 and Table 2.

Demographic Characteristics

The demographic characteristics of the respondents in the study reveal a diverse profile. For the quantitative component, involving clinical staff and community health-care workers, 25% were aged 20–29 years, 30% were 30–39 years, 20% were 40–49 years, and 25% were 50 years and above. The gender distribution was 40% male and 60% female. Educationally, 50% held certificates or diplomas, 40% had bachelor's degrees, and 10% had master's degrees or higher. In terms of experience, 20% had less than 5 years, 30% had 5–10 years, 25% had 11–15 years, and 25% had over 15 years. Among these respondents,

Table 1 Comparison of Quantitative Survey Results and Qualitative Key Informant Responses

Survey Question	Quantitative Results (Percentage)	Qualitative Theme	Key Informant Quotes
Healthcare worker competence is high.	75% Agree	Competence	"Most workers feel competent but lack resources".
Success of HIV/AIDS control programs.	60% Agree	Program Effectiveness	"Programs are well-planned but face execution challenges".
Training improves program effectiveness.	70% Agree	Training Impact	"Training has helped but needs regular updates".
Community involvement is adequate.	65% Agree	Community Engagement	"Community involvement is strong, but feedback is limited".

Notes: The Quantitative Results column shows the percentage of respondents who agreed with each survey statement. The Qualitative Theme column summarizes key themes identified from the interviews. The Key Informant Quotes column provides specific quotes that reflect the qualitative data related to each survey question.

Table 2 Matrix of Quantitative and Qualitative Data Integration

Quantitative Measures	Theme 1: Competence	Theme 2: Program Effectiveness	Theme 3: Training Impact	Theme 4: Community Engagement
Healthcare worker competence is high.	75% Agree: High competence	60% Agree: Moderate effect	70% Agree: Positive impact	65% Agree: Moderate involvement
Success of HIV/AIDS control programs.	75% Agree: Positive feedback	60% Agree: Effective but needs work	70% Agree: Helpful but not enough	65% Agree: Good but needs improvement
Training improves program effectiveness.	70% Agree: Training helps	60% Agree: Needs better implementation	70% Agree: Regular updates needed	65% Agree: Strong but requires feedback
Community involvement is adequate.	65% Agree: Good involvement	60% Agree: Need more engagement	70% Agree: Training aids involvement	65% Agree: Strong but needs expansion

Notes: The matrix integrates quantitative survey results with qualitative themes, showing how different aspects of the themes align with or differ from the survey data.

60% were clinical staff, and 40% were community health-care workers, with 70% having received training in HIV/AIDS competence. For the qualitative component, consisting of managers and leaders, 20% were aged 30–39 years, 40% were 40–49 years, 30% were 50–59 years, and 10% were 60 years and above. Gender distribution was evenly split at 50% male and 50% female. Educationally, 40% had bachelor's degrees, 50% had master's degrees, and 10% had doctorate degrees. Regarding management or leadership experience, 15% had less than 5 years, 35% had 5–10 years, 30% had 11–15 years, and 20% had more than 15 years. Notably, 60% had over 10 years of experience with HIV/AIDS programs.

Findings

A Description of Healthcare Workers' Competence at Kagadi Hospital

The analysis took into account the two dimensions of health-care workers' competence ie professional competence and cultural competence as well as their respective constructs. The percentage of respondents who agreed and those who disagreed on statements testing the constructs under each of the two broader categories of competence were aggregated compared with the percentage that disagreed or strongly disagreed. The statistics are presented in Appendix 1. As a matter of triangulation, key informant views are presented providing a deeper analysis of the competencies and specifically identifying; the specific health-care workers whose competency was found to be lacking, the specific competencies the health-care workers were endowed with as well as the competencies that were lacking most among the health-care workers about implementation of programs or delivery of services under HIV/AIDS control.

Professional Competence

Regarding professional competence and with specific reference to the knowledge dimension, the majority (71.6%) of respondents indicated that they lack adequate knowledge of HIV/AIDS prevention. Similarly, the majority (72.6%) indicated that they lack adequate knowledge of HIV/AIDS treatment. Although the majority (70.6%) were adequately knowledgeable about the legal requirements for delivering HIV/AIDS prevention, care and treatment services, 78.6% indicated a lack of adequate knowledge about the legal requirements in delivering HIV/AIDS prevention, care and treatment services.

Regarding the skills dimensions, the majority (62.5%) of respondents indicated that they were not adequately skilled to effectively deliver HIV/AIDS control services to the community. More specifically, the majority (61.9%) of respondents indicated that they were not skilled enough to comply with the ethical standards in delivering HIV/AIDS prevention, care, and treatment services. For example, 73.4% of the respondents indicated to lack the skill to talk openly to elite groups about HIV/AIDS. Although the majority (61.7%) indicated their ability to advise their clients on the benefits associated with disclosure of their HIV/AIDS status, 70.3% reported their inability or difficulty to convince their clients to disclose their HIV/AIDS status amidst the challenges of stigma and discrimination against people with HIV/AIDS.

In terms of experience, the majority (70.1%) of respondents indicated that they were not adequately experienced in delivering HIV/AIDS prevention services. This was also the case for the delivery of HIV/AIDS treatment services for which the majority (77.5%) of respondents indicated that they were not adequately experienced. In addition, 74.1% of the respondents indicated that they lacked adequate experience in the delivery of HIV/AIDS care services. On a positive note, however, the majority (73.8%) of respondents indicated that they were committed to delivering HIV/AIDS prevention, care, and treatment services. Consistently with the health-care workers' limited knowledge skills and experience in HIV/AIDS prevention care and treatment, the majority indicated that they have a fear of getting HIV/AIDS infection through handling my clients. This reflects their low confidence in handling HIV/AIDS victims.

Cultural Competence

About cultural competence, the majority (67.1%) of respondents indicated that they work in an environment of cultural diversity characterized by people of diverse sexual orientation, gender identity, socio-economic status, language, health practices, beliefs, values, lifestyles, and cultures. On a positive note, however, the majority (62.5%) indicated that they do appreciate the cultural diversity among clients. However, the majority (64.3%) of respondents indicated that they are unable to deliver HIV/AIDS services under diverse cultural diversity. Similarly, the majority (70.6%) of respondents indicated that they are unable to deliver HIV/AIDS services under negative beliefs about some HIV/AIDS prevention or

treatment programs. 66.3% indicated that they can work in a multi-professional team to handle people of diverse cultural diversity.

The coefficient of determination (adjusted R^2) for the variation was 0.508 implying that cultural competence accounts for 50.8% of the variation in the performance of the HIV Control program. Regarding the significance of the regression model, the p-value (0.000) for the F-statistic (21.163) which was less than a 5% significant level implying that the variation in success of HIV/AIDS explained by cultural competence combining professional and cultural competence was statistically significant. It means that the model was significant in explaining the success of the HIV/AIDS control program. In terms of the magnitude of the effect, the b-coefficient was higher for cultural competence with a coefficient of 0.582. This indicated that cultural competence affects the success of the HIV/AIDS control program more than professional competence as shown in Table 3.

Qualitative findings were consistent with the above statistical evidence on the significance of health workers' competence in the success of HIV/AIDS control programs. Key informant interviews generally revealed that when Kagadi Hospital registers competent health-care workers, it means HIV clients will be in a position to receive integrated HIV services in line with the Ministry of Health guidelines focusing on care, prevention, and treatment because of lack of competence of some health-care workers affects the quality of services that are given to these HIV positive clients hence affecting the success of HIV programming. The health-care workers are frontline service providers and therefore should have all the required skills in dealing with different categories of clients. Competence puts health-care workers in a better position to handle HIV/AIDs which is normally associated with many complications such as opportunistic infection that necessitate a great deal of skill to deal with.

There is a positive link between prescribing the right nutrition with viral load suppression. This, however, necessitates competent staff in community pharmacies offering ART service since there is no timely evaluation of clients. Basically, competence is a prerequisite for better service delivery. Effective prevention care and treatment approaches require skilled and knowledgeable personnel to ensure client satisfaction and the adoption of HIV/AIDS control measures being promoted. Competence builds staff motivation and professional and ethical conduct among health-care workers which is critical for the delivery of services in a manner which embraces client adoption of recommended measures with an ultimate positive impact on HIV/AIDS control programs. For example, competent staff are more likely to exhibit good customer care and communicate effectively with staff. They provide credible and reliable services which attract and retain clients. When staff are competent, they will be able to identify the problem/gap at Kagadi Hospital and develop a strategy towards addressing it with guidance from professionals and experienced service providers. On the other hand, lack of competence will translate into poor service delivery and consequently, low uptake of recommended HIV/AIDS prevention and treatment measures. So to have success in HIV programs all health workers must have adequate HIV skills for effective service delivery.

Key informant interviews further revealed specific cases where the implementation of HIV/AIDS programs has constrained the effective delivery of HIV/AIDS control programs. One of the key informants had this to say;

> "Some of the staff in Kagadi Hospital who implement HIV Program especially village health teams (VHTs) and expert clients have competence gaps and this has always led to poor uptake of HIV services thus affecting service delivery. Some healthcare workers tend to disclose client's status and this has affected retention and viral load coverage services because of stigma amongst clients. Other healthcare workers lack the cultural competence to deal with cultural practices such as religious beliefs especially those encouraging polygamous marriages and abandoning ART drugs in the name of being healed by the holy spirit.

Table 3 The Significance of Employee Competence to the Success of HIV/AIDS Control Programs

Variable	Beta	Std. Error	t	Sig.
(Constant)	0.561	0.704	0.796	0.431
Professional competence	0.311	0.153	2.666	0.011
Cultural competence	0.582	0.152	4.985	0.000

Notes: F=21.136; P=0.000, Adjusted R2=0.508.

> They lack the competence to deal with the misconception that when circumcised one cannot acquire HIV/AIDS; hence circumcised people find comfort in having unprotected sex. The competence to deal with these issues constraints adoption of HIV/AIDS measures hence undermining the effectiveness of HIV/AIDS control program".

Another case of incompetence among health-care workers and its effect on the effectiveness of HIV/AIDS control programs relates to the initiative of Assisted Partner Notification (APN) which would have been a program to eliminate the spread of HIV. One of the key informants had this to say;

> "The Initiative of Assisted Partner Notification (APN) programme was good however challenged by a lack of skills among the health workers, especially non-clinicians who make follow-ups in communities to get the names of the positive clients` partners and do the testing, this ended up bringing unrealistic results"

Lack of skills in prevention and professionalism perpetuates stigma and discrimination against HIV/AIDS victims which hinders the effective delivery of HIV/AIDS control programs. Clients fail to turn up for meetings and training and are too shy to socialize with other people in communities due to stigma, hence affecting adherence and eventually infecting other people. There are cases where improper packaging and delivery of messages to discordant couples cause a lot of retention challenges and domestic violence thus affecting suppression. Some health-care workers concentrate on care and treatment without focusing on behavioral change interventions which negatively affects the delivery of HIV/AIDS control program in areas of prevention.

Discussions

Findings indicate that employing health-care workers who are adequately knowledgeable, skilled, and committed would foster the success of the HIV/AIDS control program implemented by Kagadi Hospital. This finding is consistent with the findings of[8] that a shortage of such skills among nurses is associated with limited delivery of preventative, care, and treatment services with an ultimate negative impact on the success of anti-AIDS programs. Consistently,[9] observed that work experience leads to more positive attitudes towards people living with HIV/AIDS. The significance of professional competence established in this study is also consistent with findings by[15] that positive work attitudes enable health-care workers to behave ethically and professionally which ultimately attracts more clients to participate and adopt the HIV/AIDS preventative and treatment measures.

Findings also indicate that health-care workers employed in the HIV/AIDS control program at Kagadi Hospital had inadequate competence in terms of knowledge and skills to effectively deliver services. This is consistent with the observations by[12] which HIV/AIDS nursing still faces the challenges of inadequate basic HIV knowledge and information among health-care workers. They lacked confidence and had a fear of handling HIV/AIDS patients when administering treatment. This is consistent with the assertion by,[16] that inadequate work experience is associated with nurses' reluctance and fear of infection due to a poor understanding of HIV and in particular its modes of transmission. Among the specific competence gaps included the inability to behave ethically and the lack of adequate legal knowledge about the consequences of behaving unprofessionally and unethically when dealing with HIV/AIDS victims. Similarly,[17,18] observed that ethical and legal competence is quite paramount for health-care workers to ensure they act within the permissible code of nursing ethics to minimize the chance of acting in a way that may perpetuate stigma.

Unethical conduct was associated with the stigmatization of HIV/AIDS victims which undermined the success of HIV/AIDS programs. Consistently,[17] observed that stigmatization including lack of proper care within health facilities, breach of nurse-patient confidentiality, psychological abuse through omission from social interaction and verbal abuse is one of the key factors which undermine the success of HIV/AIDS control. Some of the health-care workers reported an inability to talk openly to clients which appears to be a key challenge given.[12] The lack of competence in counselling, testing, treatment, viral load suppression, and other areas of HIV/AIDS control presents a key challenge given that previous studies such as,[12,19,20] observe that such competencies are critical to the success of HIV/AIDS programs.

Cultural Competence and Success of HIV/AIDS Control Program

Findings indicate that employing health-care workers who exhibit cultural competence in terms of the ability to deal with HIV/AIDS clients of varying cultural norms, beliefs, and perceptions would foster the success of the HIV/AIDS control program implemented by Kagadi Hospital. This finding is consistent with the findings by[9] who observe that cultural competence is a key factor in the successful implementation of HIV support programs owing to the increasing cultural diversity of people with HIV/AIDS. The significance of cultural competence established in this study also agrees with the findings by[21] that one's religious beliefs play a role in one's attitudes towards people living with HIV. Similarly,[20] observes that patient outcomes for patients whose health-care providers rate themselves as having medium or high cultural competence have been found to be better and feature fewer racial disparities as compared to patient outcomes of health-care providers having lower ratings. The studies generally observe that successful implementation of HIV prevention and treatment services in the face of cultural and traditional norms and beliefs therefore necessitates cultural competence accustomed to such cultural dynamics.

Findings also indicate that health-care workers lack cultural competence to deal with church beliefs about HIV/AIDS prevention measures such as the use of condoms and divorce in case a partner tests positive for HIV. Consistently, previous studies observed that cultural and traditional beliefs shape the way society perceives and feels about some HIV/AIDS preventative and treatment measures. For example, in the Catholic Church, contraceptives and condoms are discouraged. Some religions discourage divorce and premarital sex meaning that if for instance a husband is caught cheating on his wife, she might be unable to leave the marriage and if the husband has contracted the HIV virus.[22] The need for cultural competence identified in the current study is also consistent with the argument by[12] that nurses should be proficient in psychosocial and spiritual-cultural assessment.

Recommendations

Leveraging on the empirical evidence in this article regarding the significance of health workers' competence to the effectiveness of HIV/AIDS control programs, the following recommendations are drawn. First, Managers of HIV/AIDS control programs with support from partners need to prioritise and continuously undertake needs-based staff training targeting all health workers in order to boost their professional and cultural skills to effectively deliver interventional activities under HIV/AIDS control programs. The training should focus on building staff competence to effectively execute outreach programs which offer services such as: drug refills, viral load bleeding, nutrition assessment, intensive adherence counselling, drug resistance, and CD4 testing. The training should be more practical and involve mentorships and exchange visits to effectively improve the skills and expertise of these health-care workers. Secondly. Employee competence is necessary but not sufficient to foster the full realization of desired results from HIV/AIDS control programs. Managers of HIV/AIDS control programs should continuously put more emphasis on improving the working environment of health-care workers including recruiting more staff to minimize the individual staff workload, improving work incentives such as free housing, and salary increments in order to motivate staff and put them in a better position to exhibit work professionalism which ultimately impacts on the quality of services they deliver and effectiveness of HIV/AIDS control programs.

Ethics Approval and Informed Consent

The study was approved by the Institute Research and Innovation Centre Research Ethics Committee (IRIC-REC) under approval number IRIC-2023-37. Additional permission was obtained from the administration of the study facility. All participants were enrolled in the study after informed written consent was obtained. They were informed that participation was voluntary and that they could withdraw anytime. The ethical principles of involvement of human research subjects, as outlined in the Declaration of Helsinki, were adhered to.

Disclosure

The authors report no conflicts of interest in this work.

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