

Challenges Limiting Healthcare Data Utilization for Policy Decision-Making in Tanzania: A Qualitative Panel Discussion

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ABSTRACT

Background: Accurate and reliable healthcare data are essential for effective policy decision-making, resource allocation, and improved health outcomes. In Tanzania, despite various efforts to strengthen Health Management Information Systems (HMIS), the utilisation of healthcare data in policy and planning remains limited. Existing studies highlight challenges such as poor data quality, limited skills in data interpretation, and fragmented health information systems, yet there is limited qualitative evidence capturing the lived experiences and perspectives of frontline stakeholders on these barriers. This study was conducted to address this gap by identifying and contextualising the key obstacles that hinder healthcare data utilisation for policy decision-making in Tanzania, using insights from a multidisciplinary expert panel discussion.

Methods: A qualitative research approach was employed, focusing on a panel discussion with five experts in the field of health systems and Health Management Information Systems (HMIS) during the 8th Tanzania Health Summit. The panellists were purposively selected, representing diverse backgrounds and expertise in healthcare data utilisation. Data were primarily collected from the panellists' presentations and audience interaction with those who attended the session. An inductive semantic thematic analysis approach was used to identify the key obstacles limiting healthcare data utilisation in Tanzania.

Results: The study identifies key obstacles limiting healthcare data utilisation in Tanzania, which include unskilled professionals, multiple health information systems, poor data quality, competing donor priorities, poor communication, healthcare staff fatigue, and low working morale. These challenges hinder effective data-driven decision-making and healthcare service delivery. Addressing these obstacles requires a multifaceted approach involving collaboration among stakeholders, investment in capacity building, harmonisation of health information systems, improved communication, and prioritisation of healthcare worker well-being.

Conclusion: The findings of this study provide valuable insights into the challenges faced in healthcare data utilisation for policy decision-making in Tanzania. Addressing these obstacles is critical for enhancing the capacity of healthcare professionals, policymakers, and other stakeholders to make informed decisions based on accurate, high-quality healthcare data. The study's results can serve as a foundation for targeted interventions and policy recommendations aimed at improving healthcare data utilisation in Tanzania and in similar resource-limited settings.

BACKGROUND

Health Information Systems (HIS) are recognised as one of the six essential building blocks of the World Health Organization's health systems framework.¹ Accurate and reliable health information plays a critical role in decision-making processes, policy development, implementation of projects, governance, human resource planning, training, and financing for healthcare. Furthermore, high-quality health data can strengthen healthcare system effectiveness, support public health measures, and assist governments in addressing

their population's health needs.

Despite the increasing importance of health data utilisation, the weak quality of data remains a significant hindrance to providing quality care.² Inadequate coordination in data collection mechanisms and disparate data collection instruments further limit the potential of health data. Consequently, health data is often not translated into appropriate actions to improve care quality. Several studies have indicated that data utilisation at all levels of the healthcare system is low in Africa.^{3,4} Approximately 38% of district officers routinely used data

from Health Management Information Systems (HMIS), with no training provided in the past year and less than half of the facilities receiving visits and supervision regarding HMIS data validity.⁵

Aung and colleagues demonstrated that data literacy and statistical skills vary among Reproductive, Maternal, Newborn, Child, and Adolescent Health and Nutrition (RMNCHN) decision-makers in Tanzania.⁶ He concluded that training is crucial for RMNCHN decision-makers at all levels to enhance their practice and make informed decisions concerning health services. Another study found that local government authorities' lack of technical capacity limits their understanding of data and, consequently, their decision-making capabilities.⁷

In Tanzania, healthcare decisions are based on a deliberative process using four decision-making criteria: efficacy, safety, cost-effectiveness, and affordability. The country adopted the five-year Health Sector Strategic Plan (HSSP) – V 2021 – 2026 in June 2021, with the slogan “LEAVE NO ONE BEHIND”.⁸ Section 5.4.5 of the HSSP V emphasises using Information and Communication Technology (ICT) as a strategic priority area, stating that the country should establish an interoperable ICT system that meets international standards for communication, data storage, and information exchange, facilitating quality service delivery to the population.

Although Tanzania's Health Sector Strategic Plan V (HSSP V) emphasises the use of quality healthcare data for effective policy formulation, data utilisation remains limited due to various systemic and contextual challenges.⁹ While previous studies have highlighted issues such as poor data quality and inadequate skills, there is a lack of in-depth, stakeholder-driven understanding of the specific obstacles affecting data use in Tanzania's health sector.⁵ To address this gap, the study convened a panel of experts and stakeholders to identify and explore key barriers limiting healthcare data utilisation for policy decision-making. The objective was to generate contextually relevant insights and actionable recommendations that reflect the practical experiences of those directly involved in health data systems. By doing so, the study contributes to a more nuanced understanding of data-use challenges in resource-constrained environments and provides a foundation for evidence-based strategies to enhance data-driven governance, resource allocation, and healthcare outcomes in Tanzania.

METHODOLOGY

Study Design and Setting

This study employed a qualitative research design centred on a single expert panel discussion conducted during the 8th Tanzania Health Summit, held in Dodoma in October 2021. The summit is a prominent national platform that convenes stakeholders across the health sector, including government representatives, healthcare professionals, researchers, and policymakers. The panel brought together five purposively selected experts with backgrounds in health systems and Health Management Information Systems (HMIS) to share practical experiences, insights, successes, and challenges related to healthcare data utilization in Tanzania.

This qualitative format allowed for an in-depth

and dynamic exchange of ideas, opinions, and recommendations among panellists and participants.¹⁰⁻¹² Each panellist was given ample time to present their views, engage in moderated discussions, and respond to audience questions and comments. The panel discussion served as the primary data source for the study, offering contextually grounded insights into healthcare data utilization in a resource-limited setting.

Study Population

The target population for this study consists of key players in the Tanzanian health sector who possess expertise in health systems and Health Management Information Systems (HMIS). This group includes individuals with practical experience in implementing, managing, and utilising health data within various healthcare settings across the country.

The panellists were carefully chosen to represent a diverse range of stakeholders in the Tanzanian health sector, ensuring a comprehensive understanding of the issues at hand. The five panellists included experts from healthcare facilities, research institutions, the private sector, and policy-making bodies, each bringing unique experiences and insights in the discussion. This diversity in representation allowed for a rich and multifaceted exploration of the challenges and solutions related to healthcare data utilisation in Tanzania, as the panellists could share their experiences from various perspectives and contexts within the health sector.

Inclusion and Exclusion Criteria

Panellists were selected using predefined inclusion and exclusion criteria to ensure a knowledgeable, diverse, and relevant expert panel. The included participants comprised individuals with demonstrated expertise, practical experience, and knowledge of healthcare data utilisation in Tanzania. Eligible participants were professionals with experience in health systems, Health Management Information Systems (HMIS), health data analysis, policy development, or health research. Panellists were also required to possess substantial experience with the use of health data for policy and decision-making and to be able to provide informed perspectives on the successes, challenges, and potential strategies for improving evidence-informed policymaking within the Tanzanian healthcare context.

Individuals were excluded if they lacked relevant expertise or practical experience in healthcare data utilisation in Tanzania, had potential conflicts of interest that could compromise the objectivity of the discussions, were unavailable to participate during the scheduled panel sessions, or were unwilling to share their knowledge and experiences during the discussions.

Sample Technique and Sample Size

Panellists were selected using predefined inclusion and exclusion criteria to ensure a knowledgeable, diverse, and relevant expert panel. The included participants comprised individuals with demonstrated expertise, practical experience, and knowledge of healthcare data utilisation in Tanzania. Eligible participants were professionals with experience in health systems, Health Management Information Systems (HMIS), health

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Data Collection

The primary source of data collection for this study was the presentations made by the five panellists during the panel discussion. Each panellist shared their practical experiences, insights, and expertise on healthcare data utilisation in Tanzania, focusing on the successes and challenges they had encountered in transforming data into useful information for public use. The presentations served as a foundation for the discussion, providing context and real-world examples of the issues and opportunities related to healthcare data utilisation for policy decision-making.

In addition to the panellists' presentations, data was also collected through the responses to questions from panellists who were asked by the participants who attended the panel discussion. This interactive dialogue between the panellists and the audience allowed for a more comprehensive exploration of the topic, as it encouraged the sharing of diverse perspectives, experiences, and potential solutions related to healthcare data utilisation in Tanzania. The questions and comments from the participants served as a valuable source of additional data, enriching the study's findings and providing a broader understanding of the challenges and opportunities in the field.

Data Analysis

The data collected during the panel discussion was analysed using an inductive semantic thematic approach, which involved identifying the key obstacles that limit the use of healthcare data for policy decision-making in Tanzania. The analysis process involved audio recording, transcription and reviewing the panellists' presentations, as well as the questions and comments from the audience, to determine the most prominent and recurring challenges and turn them into themes. Once the key obstacles were identified, they were categorised according to their strengths as high, medium, and low, based on the extent to which they impact healthcare data utilisation. This categorisation allowed for a better understanding of the relative importance and urgency of addressing each challenge to improve data-driven decision-making in the Tanzanian health sector.

After the key obstacles were identified and categorised, the study's findings were compared with the existing literature on healthcare data utilisation and the practical experiences shared by the panellists during the discussion. This comparison helped to validate the

study's results, ensuring that the identified challenges and their categorisation were consistent with the current understanding of healthcare data utilisation in Tanzania. Moreover, the comparison allowed for the identification of any novel insights or perspectives that emerged during the panel discussion, highlighting areas where further research or interventions may be necessary to address the challenges and improve healthcare data utilisation for policy decision-making.

Ethical Consideration

The study was reviewed and approved by the Scientific Committee of the 8th Tanzania Health Summit, which oversaw the conduct of the panel session. Formal Institutional Review Board (IRB) review by a university was not sought, as the study drew on a moderated expert panel held within an official health conference rather than on conventional human-subjects research; the Scientific Committee of the Summit therefore served as the approving body for the session and its use in this study.

To protect participant confidentiality, all identifying information was removed during data analysis and reporting. Contributions were assigned neutral, role-based identifiers (for example, Ministry of Health Representative, Research Institution Representative, and NGO Representative), and institutional or programme names that could indirectly identify a participant were generalised. Audio recordings and transcripts were stored securely and were accessible only to the research team, and were used solely for the purposes of this study. Any potentially sensitive information disclosed during the discussion was handled in confidence.

RESULTS

The study identified seven key challenges that limit the use of healthcare data for policy decision-making in Tanzania. The study identified seven key challenges that limit the use of healthcare data for policy decision-making in Tanzania. Table 1 presents a summary of these challenges, while Table 2 outlines the characteristics of the qualitative study respondents.

Gaps in Skills for Healthcare Data Interpretation and Use

One of the key obstacles identified by the expert panel is the limited skills among professionals in interpreting and using healthcare data in Tanzania. This limitation hinders the effective use of data for decision-making and program planning. Despite the efforts made by different stakeholders to build capacity among healthcare workers, there is still a need for more training and mentorship programmes to improve data management skills. Several factors contribute to the lack of skilled professionals in healthcare data management, including inadequate training programmes and the limited access to data analysis tools. Furthermore, there is a significant gap between the theoretical knowledge acquired in the classroom and the practical skills required for effective data management in the healthcare sector. As one panellist noted,

"We ask nurses to collect data but never show them how it informs policy. To them, it's just paperwork." — Panellist 1 (Ministry of Health Representative)

To address this challenge, the panellists recommended

TABLE 1: Summary of Identified Challenges of Data Utilization in Healthcare Settings

S/N	Challenge	Strength
1	Unskilled professional to interpret and utilize data	High
2	Multiple health information systems for data collection	High
3	Poor quality of data collected	High
4	Competing donor priorities on different parameters of data	Medium
5	Poor communication of data between data generators and policymakers/or health planners	Medium
6	Healthcare Staff Multitasking	Low
7	Low working morale and incentivization	Low

The table shows seven challenges that were identified during the panel discussion and summarized according to their strength, with high strength being the topmost challenges to low strength as the least challenges.

TABLE 2: Characteristics of Respondents

Identifier	Professional Role	Area of Expertise	Relevance to Study
Panellist 1	Director/Head of ICT, Ministry of Health Zanzibar	Digital health & health information systems	Leads a regional eHealth strategy (including electronic medical records & community health information systems) & emphasises data-driven decision-making
Panellist 2	Chief Medical Officer, national Ministry of Health	Public health & health administration (maternal/child health focus)	Senior health leader with responsibility for maternal/child health programmes & national health policy and outbreak management, integrating data into decisions
Panellist 3	Director of ICT, government local-administration body	Health informatics and digital technology for primary care	Oversees eHealth initiatives to digitise primary healthcare records; advocates training & use of health data to improve service delivery
Panellist 4	Senior research scientist, national research institution	Public health research & neglected tropical diseases	Leads disease-control research & health-systems implementation research; work informs policy through evidence-based data
Panellist 5	Technical/Project Director, non-governmental organisation	Women's health and cancers (breast, cervical)	Implements & evaluates cancer screening & vaccination programmes that rely on high-quality data for monitoring outcomes and informing policy

Note: Respondents are identified by neutral, role-based labels to protect confidentiality. Institutional and programme names have been generalised for the same reason.

the introduction of practical training programmes that provide hands-on experience in data analysis and interpretation. Such training programmes should include mentorship and support from experienced data analysts to ensure the effective transfer of skills. Moreover, the panellists emphasised the importance of investing in the

development of user-friendly data analysis tools that can enable professionals to access and analyse data more easily. This would enhance the capacity of healthcare workers to use data effectively for decision-making and improve the quality of healthcare services delivered to the community.

Fragmentation of Health Information Systems and Its Impact on Data Use

Another key obstacle limiting healthcare data utilisation in Tanzania identified by the expert panel is the existence of multiple health information systems. The panellists highlighted that several different organisations have introduced various health information systems in Tanzania, including the government, international organisations, NGOs, and other partners. This has resulted in a proliferation of different data collection tools and platforms, leading to difficulties in integrating and harmonising the data collected.

“At one point we counted over 12 different health data systems in use. Every time a new project starts, they build a new database instead of upgrading the existing one.” — Panellist 3 (Government ICT/Digital Health Representative)

The multiple health information systems also create challenges in terms of data quality and accuracy, as different systems may collect data in different ways or using different standards, leading to inconsistencies in the data. This can make it difficult to compare or analyse data from different sources and limit the effectiveness of data-driven decision-making. Moreover, the panellists noted that these different systems can be costly to maintain and require specialised expertise to operate, leading to inefficiencies in data collection and management. The existence of multiple health information systems also results in duplication of efforts and resources, leading to a waste of resources that could have been directed towards improving the quality of healthcare service delivery.

“Parallel, overlapping information systems increase our workload and compromise service delivery – when health workers are overtasked, errors creep in.” — Panellist 2 (Senior Government Health Official)

Poor quality of data

The panellists noted that the quality of healthcare data is crucial in making informed decisions at all levels of the healthcare system. However, there are several factors contributing to the poor quality of data in Tanzania. Firstly, there is inadequate training for healthcare providers in data collection, management, and analysis. Many healthcare professionals lack the necessary skills and knowledge to collect and enter data correctly, leading to incomplete or inaccurate data. Moreover, there is limited training on data analysis and interpretation, which is essential in drawing conclusions and making informed decisions.

Secondly, there are challenges related to the design and implementation of health information systems. Tanzania has multiple health information systems, which often operate independently of one another. This leads to a lack of interoperability and data standardisation, resulting in incomplete or inaccurate data. Additionally, some systems may not be user-friendly, leading to errors in data entry.

Thirdly, there are challenges in the data collection process, including inadequate supervision and monitoring, leading to data quality issues such as missing data or data duplication. In some cases, there may be deliberate manipulation of data for personal gain or to meet performance targets. Finally, there are also issues related to the quality of healthcare facilities, including inadequate infrastructure, lack of resources and supplies,

and insufficient staffing. These factors can lead to incomplete or inaccurate data collection and reporting.

Overall, poor data quality in Tanzania poses a significant challenge to healthcare data utilisation, which could impact the decision-making process and, ultimately, patient outcomes. Addressing this challenge requires a concerted effort to improve the skills and knowledge of healthcare providers, enhance the design and implementation of health information systems, strengthen data collection processes, and improve the quality of healthcare facilities.

Competing Donor Priorities on Type of Data and Systems Use

The panellists discussed how competing priorities from various donors on the types of data and systems to be used in healthcare in Tanzania can limit data utilisation. This can lead to confusion and difficulty in creating a cohesive and effective system for data utilisation. Donors may have different goals and interests in mind, which can sometimes conflict with the goals and interests of the local government and healthcare providers. Additionally, some donors may prioritise certain types of data over others, leading to gaps in important data collection and utilisation.

These competing donor priorities can also affect the implementation of HMIS in Tanzania, with donors pushing for their preferred systems or data collection methods, which may not align with the needs of the local healthcare system. This may lead to a lack of standardisation and integration of different systems, making it difficult to effectively utilise the data collected. Therefore, it is important for donors to work closely with local healthcare providers and governments to ensure that their priorities align with the needs of the healthcare system and that their contributions are integrated effectively.

“A facility might fill out five registers a day, but only the ones tied to donor-funded indicators get reviewed. That skews attention and resources.” — Panellist 5 (NGO Representative)

Poor Communication

One of the obstacles identified by the panellists that limits healthcare data utilisation in Tanzania is poor communication. The panellists noted that there is often a lack of communication between stakeholders in the healthcare sector, which leads to a lack of coordination and cooperation in utilising healthcare data. Poor communication can lead to duplication of efforts and wasted resources and ultimately hinder the effective use of healthcare data for decision-making. Furthermore, poor communication can result in misinterpretation of data and misinformation, which can lead to misguided policies and interventions. Inaccurate data can negatively impact decision-making and potentially harm patient care, leading to reduced trust in the healthcare system.

“Facilities submit reports to districts, then hear nothing back. Over time, staff get the message that no one is really interested.” — Panellist 5 (NGO Representative)

The panellists agreed that improving communication channels among stakeholders in the healthcare sector is crucial in addressing the challenge of poor communication. This can be achieved through increased collaboration and partnerships among stakeholders,

regular meetings, and workshops to share experiences and build capacity in utilising healthcare data. Additionally, the panellists suggested the need for better data-sharing protocols and standardised reporting systems to ensure accurate and reliable healthcare data are disseminated to all relevant stakeholders in a timely manner. Improved communication will facilitate the effective utilisation of healthcare data for decision-making and ultimately improve healthcare service delivery in Tanzania.

Healthcare Staff Fatigue

The burden of long working hours and excessive workload on healthcare workers leads to fatigue, which can affect the quality of data they collect and the accuracy of the data interpretation. This is particularly concerning in Tanzania, where health facilities are often understaffed and healthcare workers overworked. Fatigue can lead to healthcare workers rushing through their data collection and analysis, which can result in incomplete or inaccurate data. Additionally, healthcare staff may lack the motivation to engage with the health information system and collect quality data, leading to gaps in the data collection process. Fatigue can also affect the accuracy of data interpretation, as tired healthcare workers may not be able to effectively analyse and interpret the data they collect. This can lead to incorrect conclusions and potentially misguided decision-making.

Addressing healthcare staff fatigue requires interventions at multiple levels, including improving staffing levels, workload management, and training in data collection and analysis. Additionally, there is a need for policies that prioritise healthcare workers' well-being, including measures such as regular breaks and support for mental and physical health. By addressing healthcare staff fatigue, healthcare organisations can improve the quality and accuracy of healthcare data, which can lead to better decision-making and ultimately improve health outcomes for patients.

Low Working Morale

Finally, the study identified low working morale among healthcare staff as an obstacle to effective healthcare data utilisation. The panel discussion acknowledged that healthcare workers face numerous challenges in their work, including long working hours, inadequate remuneration, and poor working conditions, which contribute to low morale. This low morale affects the motivation of healthcare workers, which ultimately impacts the quality of data collected and utilised.

The panellists emphasised that low morale is a major issue that needs to be addressed by policymakers and stakeholders in the health sector. It is important to note that low morale is not only limited to healthcare workers but also affects policymakers and researchers who are responsible for utilising data to make informed decisions. Low morale can lead to a lack of interest in data utilisation and the reluctance to take on additional responsibilities. A panellist noted that

"It's not that health workers don't care about quality, but the system doesn't incentivise going above and beyond"
— Panellist 2 (Senior Government Health Official).

This can lead to healthcare workers not collecting accurate data, not utilising the data that is available, and

not engaging in activities that could improve data quality. This, in turn, affects the decision-making process, leading to unguided policies and implementation actions.

DISCUSSION

The panel discussion provided valuable insights into the various challenges that limit healthcare data utilisation for policy decision-making in Tanzania. The expert panellists identified seven key obstacles: unskilled professionals to interpret and use data, multiple health information systems, poor quality of data, competing donor priorities on type of data and systems use, poor communication, healthcare staff fatigue, and low working morale. This discussion delves deeper into the implications of these obstacles and potential strategies to address them.

The lack of skilled professionals in healthcare data management has significant implications for the effective utilisation of data in policy decision-making.¹³ This issue may stem from inadequate training programmes, limited access to data analysis tools, and a disconnect between academic curricula and the practical skills needed in the healthcare sector.¹⁴ Addressing this obstacle requires the development of practical training programmes that offer hands-on experience in data analysis and interpretation, incorporating mentorship and support from experienced data analysts to ensure the effective transfer of skills.¹⁵ Moreover, investing in user-friendly data analysis tools and open-source technologies could enable professionals to access and analyse data more easily, thereby improving data-driven decision-making and the quality of healthcare services.¹⁶ Additionally, fostering collaborations between academic institutions and healthcare facilities can help bridge the gap between theoretical knowledge and practical skills required for effective data management.¹⁷

The existence of multiple health information systems within Tanzania presents several challenges. These challenges include difficulties in data integration, harmonisation, and standardisation.¹⁴ Inconsistent data collection methods and formats across different systems can make it difficult to compare or analyse data from various sources.¹⁸ In Tanzania, Mboera identified that multiple health information systems led to fragmented and uncoordinated data, which negatively impacted the country's ability to monitor health indicators and make informed decisions. Similarly, in Uganda, Kiberu reported that the lack of standardised data collection tools and the existence of multiple systems contributed to poor data quality and limited the capacity to use data effectively for decision-making.¹⁹

To address these challenges, harmonising and integrating health information systems is essential. This can help ensure data quality, accuracy, and effectiveness in decision-making.²⁰ By creating a single, unified system, data can be collected, stored, and analysed in a consistent manner, facilitating better comparison and interpretation of health data.²¹ In turn, this can improve the overall quality of health services, as decision-makers have access to more reliable and comprehensive data.

The poor quality of healthcare data in LMIC has significant implications for health outcomes, planning, and resource allocation.²² Several factors contribute to these data quality issues, including inadequate training of

healthcare providers in data collection, management, and analysis⁵, challenges in the design and implementation of health information systems, and issues related to healthcare facilities.¹⁸

Inadequate training of healthcare providers in data collection, management, and analysis can result in inaccurate or incomplete data, which affects the overall quality of health information.¹⁴ This can be addressed by providing targeted training and capacity building for healthcare providers, focusing on enhancing their skills and knowledge in data management.¹⁷

Challenges in the design and implementation of health information systems also contribute to poor data quality. This can include issues with data standardisation, integration, and harmonisation, as discussed earlier.²⁰ To tackle these challenges, countries should invest in the development and implementation of robust, user-friendly health information systems, which can facilitate better data collection, analysis, and reporting.²³

Issues related to healthcare facilities, such as inadequate infrastructure, lack of essential equipment, and insufficient staffing, can also negatively impact data quality.¹⁸ Improving the quality of healthcare facilities by investing in infrastructure, equipment, and human resources can help enhance data collection processes and overall data quality.²²

Addressing these challenges requires concerted efforts from governments, international organisations, and other stakeholders. This can involve developing and implementing policies that support the improvement of healthcare providers' skills, enhancing the design and implementation of health information systems, strengthening data collection processes, and investing in the quality of healthcare facilities.²²

Competing donor priorities can create challenges in establishing a cohesive and effective system for data utilisation in Tanzania.²⁴ When different donors support health information systems with varying objectives, requirements, and expectations, it can lead to fragmented and uncoordinated data collection and management efforts.²⁵ This fragmentation can hinder the effective use of data for decision-making and impact the overall health outcomes in these countries.²⁰

To address this issue, donors should work closely with local healthcare providers and governments to ensure that their priorities align with the needs of the healthcare system and that their contributions are integrated effectively.¹⁹ Collaboration among stakeholders can facilitate better coordination, information sharing, and alignment of health information system development efforts.²⁵

One approach to improving alignment is through the establishment of a common framework for health information systems, which can help standardise data collection and reporting requirements across multiple donors. This can lead to more streamlined and effective data management processes, enabling better decision-making and health outcomes.

Another strategy is to promote better communication and collaboration between donors, local governments, and

healthcare providers, as seen in the case of the District Health Information Software 2 (DHIS2) implementation in various African countries.¹⁹ This can help ensure that donor-funded projects align with the specific needs and priorities of the local health system and contribute to a more cohesive health information system.

Poor communication among stakeholders in the healthcare sector, including healthcare providers, governments, donors, and non-governmental organisations, can hinder the effective utilisation of healthcare data for decision-making and lead to suboptimal healthcare service delivery in Tanzania.¹⁴ Improved communication can be facilitated through increased collaboration and partnerships among stakeholders, which can help align goals and objectives, streamline data collection and reporting processes, and enhance data utilisation for decision-making.²⁰ Organising regular meetings and workshops can provide opportunities for stakeholders to share experiences, challenges, and best practices and foster a better understanding of data needs and expectations among different actors.²¹

Implementing standardised data sharing protocols and reporting systems can also play a vital role in improving communication. This approach can enhance the transparency, accessibility, and comparability of healthcare data, enabling more effective communication among stakeholders and facilitating data-driven decision-making.¹⁶ By adopting these strategies, stakeholders in Tanzania and other sub-Saharan African countries can work together more effectively to address healthcare challenges, improve the quality of healthcare data, and ultimately enhance healthcare service delivery.

Fatigue among health staff has been identified as a key obstacle limiting healthcare data utilisation in Tanzania.⁵ The burden of long working hours, excessive workload, and understaffing can affect the quality of data collected and the accuracy of data interpretation.²⁶ These factors can contribute to burnout and decreased job satisfaction, which can negatively impact healthcare service delivery.²⁷ Addressing healthcare staff fatigue requires interventions at multiple levels. Improving staffing levels can help distribute workload more evenly and reduce the burden on individual healthcare workers.²⁸ Workload management strategies, such as task shifting or delegation, can also help balance the workload among staff and improve their capacity to collect and analyze data.²⁹ Additionally, there is a need for policies that prioritise healthcare worker well-being. Implementing regular breaks and providing support for mental and physical health can improve staff satisfaction and reduce the risk of burnout. Offering emotional support, counseling services, and stress management training can further promote healthcare worker well-being and productivity.²⁶ By addressing healthcare staff fatigue, healthcare organisations can improve the quality and accuracy of healthcare data, which can lead to better decision-making and ultimately improve health outcomes for patients.

Low working morale among healthcare staff has been reported as an obstacle to effective healthcare data utilisation in Tanzania.³⁰ Factors contributing to low morale include long working hours, inadequate remuneration, poor working conditions, and a lack of opportunities for professional growth.¹⁵ These factors can lead to high turnover rates, burnout, and reduced

job satisfaction among healthcare workers, ultimately affecting the quality and utilisation of healthcare data.

Improving working conditions, such as providing adequate resources, safe work environment, and ensuring appropriate staffing levels, offering competitive remuneration packages and providing non-financial incentives, such as career development opportunities and recognition programmes, can contribute to increased job satisfaction and motivation.³¹

Engaging healthcare workers in decision-making processes can foster a sense of ownership and commitment towards healthcare data utilization. Providing training on data collection, management, and analysis can equip healthcare workers with the skills and knowledge necessary for effective data utilisation and can increase their interest in and commitment to data-driven decision-making.¹⁴

Study Limitations

While this panel discussion provided valuable insights into the barriers to healthcare data utilisation in Tanzania, several limitations should be acknowledged. The limited discussion time and the panelists' areas of expertise constrained the scope and depth of the issues explored. As such, certain perspectives or contextual nuances may not have been fully captured. Second, although the panellists were selected based on their expertise and practical experience, their contributions may reflect personal or organisational biases. These perspectives, while informative, may have influenced the framing and interpretation of key challenges. Recognising these limitations is important for contextualising the findings and identifying areas for further research, including more comprehensive qualitative studies or stakeholder consultations across additional levels of the health system.

CONCLUSION

The panel discussion has provided valuable insights into the various challenges that limit utilisation of healthcare data in policy decision-making in Tanzania. The expert panellists identified key obstacles such as unskilled professionals, multiple health information systems, poor quality of data, competing donor priorities, poor communication, healthcare staff fatigue, and low working morale. Addressing these challenges requires a multifaceted approach and the involvement of various stakeholders, including governments, international organisations, healthcare providers, and donors.

Investing in the training and professional development of healthcare workers is essential to strengthen their healthcare data management skills and bridge the gap between theoretical knowledge and practical application. Harmonising and integrating health information systems can facilitate better data collection, analysis, and reporting. Collaboration among stakeholders, including donors, local governments, and healthcare providers, is vital to ensure that donor-funded projects align with the specific needs and priorities of the local health system, thus contributing to a more cohesive health information system.

Improving communication among stakeholders can enhance data sharing and facilitate data-driven decision-making, ultimately leading to better healthcare

outcomes. Efforts to address healthcare staff fatigue and low working morale can lead to improved data quality and utilisation, which can contribute to better decision-making and overall healthcare service delivery. Strategies such as improving working conditions, offering adequate remuneration, recognising contributions, engaging healthcare workers in decision-making processes, and providing training on data utilisation are essential for increasing morale and job satisfaction.

To effectively address the identified challenges and improve healthcare data utilisation in Tanzania and other sub-Saharan African countries, a comprehensive and collaborative approach is necessary. By working together, stakeholders can overcome these obstacles, enhance the quality of healthcare data, and ultimately improve healthcare service delivery and patient outcomes.

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