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Exploring health dynamics in Tsakare Community, Mount Darwin District, Zimbabwe: A qualitative approach to education 5.0 driven interventions, 2024

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Abstract

Introduction: Community engagement, a foundational pillar of Education 5.0, integrates academic institutions, societal ecosystems, and public health priorities to promote learning and holistic community wellbeing. Given the limited data on health challenges within the Tsakare community, this qualitative study investigated local health dynamics to inform evidence-based interventions.

Methods: A cross-sectional qualitative study design employing participatory learning methodologies was implemented to involve community members actively in the research process. A combination of focus group discussions, in-depth interviews, and transect walks was utilised to collect data from a diverse sample of community members, health care providers, and local leaders. Thematic analysis was used to identify key patterns and themes.

Results: The study identified four major domains influencing the Tsakare community health dynamics, including communicable and non-communicable diseases (NCDs), socio-cultural and health system challenges, sociocultural practices, including reliance on traditional medicine and poverty-driven childhood marriages, delayed health care access and increased STI/HIV prevalence. Poverty negatively affected girls' health, education, and social development. The health system was constrained by limited resources, staffing shortages and poor infrastructure. Hypertension and diabetes, prevalent conditions exacerbated by poor awareness and diet, significantly increased the risk of cardiovascular disease, renal failure, and stroke. Additionally, substance abuse was identified as a critical driver of mental health issues, leading to increased crime rates and violence. Substance abuse was a prominent mental health concern, necessitating community-based interventions, public health strategies, and social support systems to address its underlying causes.

Conclusions: Study findings imply the need for integrated public health strategies that strengthen the health system, implement targeted NCD and STI prevention programmes, launch culturally sensitive health education to address harmful practices, and establish community-based mental health and substance abuse interventions which align with Education 5.0, a framework for developing contextually relevant health solutions and empowering local institutions.

Keywords: Community Health, Tsakare, Non-communicable diseases, Health care access, Zimbabwe

Citation

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Introduction

The Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development introduced Education 5.0 in 2020 as a national framework mandating universities to address local challenges through teaching, research, community engagement, innovation, and industrialisation [1]. Despite these policy shifts, the University of Zimbabwe (UZ) and similar institutions continue to face difficulties in translating academic mandates into measurable community outcomes. This challenge is especially evident in Tsakare, where the UZ has established a community laboratory intended to foster interdisciplinary, co-created interventions.

Education 5.0 represents an important evolution from the earlier Education 3.0 model by requiring universities to adopt a direct, solution-oriented partnership with communities—an essential step in tackling complex health challenges such as the emerging syndemic in Tsakare [1]. Whereas Education 3.0 emphasised disciplinary knowledge generation and graduate output, it often failed to bridge the gap between research and societal impact [2]. In contrast, Education 5.0 explicitly reintegrates teaching, research, community engagement, innovation, and industrialisation, promoting a transdisciplinary approach to knowledge application [2]. Education 5.0 marks a considerable transformation from previous models by prioritising community-engaged scholarship and transdisciplinary collaboration as essential components of university objectives [3,4]. Nevertheless, the adoption of these frameworks in rural Zimbabwe encounters systemic obstacles, including inadequate infrastructure, a historical lack of investment in rural health, and socioeconomic inequalities that influence health-seeking behaviours [5]. Rural areas such as Tsakare frequently experience geographic isolation, limited resources, and dependence on informal health systems, such as traditional healers and community health workers [6,7]. These issues are further exacerbated by a significant prevalence of both communicable and non-communicable diseases (NCDs), a trend increasingly acknowledged as a syndemic in low-resource environments [8]. To understand the local health dynamics in Tsakare, it is essential to frame the community within the larger context of rural health marginalisation and gender.

However, a critical knowledge gap remains in understanding the specific health dynamics within the Tsakare community. Health dynamics are the active processes, interactions, and outcomes that occur within and between domains. Domains are thematic areas that assist in the organisation of health dynamics. Without such contextualised insights, it is difficult to align academic interventions with real community needs or to operationalise Education 5.0's transformative aspirations effectively. This study was therefore undertaken by the UZ, Faculty of Medicine and Health Sciences, to explore the health dynamics of the Tsakare community. The goal was to generate evidence for designing targeted, Education 5.0-aligned interventions that support sustainable, community-driven health transformation.

Methods

Study design

A participatory learning approach was adopted, aligning with contemporary community-engagement methodology [9] to ensure the co-creation of knowledge with Tsakare community members. The participatory learning approach included (i) health mapping, where participants created visual maps of their community, highlighting the available health facilities, health related challenges and areas which were perceived to be disease hot spots (vulnerable areas), (ii) problem ranking where the community members prioritised health issues and iii) transect walks by the research team and community members to observe environmental health risks and a tour of the local health facility. Transect walks were a way of triangulating some of the issues that had been raised during the discussions.

Study setting

The study was carried out in the Tsakare Community, located in Ward 36 of the Mount Darwin District, purposively selected as part of the UZ Education 5.0 inter-faculty initiative. The UZ, following its Education 5.0 philosophy, chose the Tsakare Community in Mount Darwin District as a site for implementing its Education 5.0 initiatives due to its ranking among the poorest districts in Zimbabwe, high prevalence rates of communicable diseases such as HIV and is representative of many rural, remote areas that are characterised by limited access to basic social services [10]. Traditional and religious practices have a significant impact on Tsakare's community health [11]. Traditional herbal medicine is widely used, using locally derived herbs such as Warburgia salutaris "mufandichimuka" for hypertension and aloe vera "gavakava" roots for a variety of diseases, frequently as a first response due to cultural trust and healthcare inaccessibility [12]. Religious influences, particularly those from Apostolic sects, further shape health-seeking behaviour, with customs such as utilising holy water and stones and avoiding hospital visits, resulting in delayed care and an increasing reliance on Traditional Birth Attendants [13,14].

These practices intersect with and reinforce other critical issues. Early marriage, often sanctioned by religious norms and driven by poverty, heightens health risks for young girls. Similarly, mental health issues and substance abuse are frequently viewed through a spiritual rather than medical lens, complicating access to formal support. Together, these deeply rooted socio-cultural challenges

sustain a cycle of poor health outcomes and hinder effective health interventions.

Community engagement offered hands-on learning experiences through activities focused on promoting health, implementing community health interventions, and building capacity among health workers and community leaders. These efforts enabled the collaborative development of enduring solutions that enhanced community health and livelihoods, while also furthering UZ's commitment to inclusive, evidence-based, and transformative national development.

Study population

The study participants were community members who included mainly the women who are the custodians of family health, the local leadership, men as household decision makers, and the Village Health Workers (VHWs) who are locally selected, trained, and resident community members who serves as a crucial link between the formal healthcare system and the community and they receive a small incentive, and their role is foundational to primary healthcare. Trained health care workers (nurses) were also included. The study included adults aged 18 years and above who were permanent residents of Tsakare. Eligible participants comprised community leaders, VHWs, and nurses from Tsakare Clinic who could provide informed consent. Individuals below 18 years, non-residents, or unwilling to consent were excluded.

Sample size and procedures

A non-probability purposive sampling strategy was employed to recruit participants for in-depth interviews (IDIs) and focus group discussions (FGDs). The final sample size was not fixed a priori but was determined by the principle of data saturation [15], whereby data collection ceased when new interviews and focus groups yielded no further novel themes or insights. This approach is aligned with the concept of data adequacy for robust thematic analysis [16]. In line with established qualitative guidelines [17].

We conducted a total of four FDGs (two for community members and two for VHWs. Individual members were coded across groups to ensure easy identification. Participants for each group ranged between 7 and 8 [18]. Five in-depth interviews were conducted with three community leaders and the two Tsakare health care workers (nurses) from the only clinic in Tsakare, and this proved sufficient to capture the complexity and diversity of perspectives on health dynamics within the Tsakare community. The purposive selection of the participants was done to ensure focused engagement and diverse perspectives [19].

The participant sample was composed of approximately 80% females. This gender distribution is methodologically justified as women are often the primary custodians of household health, making them the most knowledgeable informants on family health issues, care-seeking behaviours, and local health system challenges [20]. Furthermore, the study's focus on key issues disproportionately affecting women, such as maternal health, cervical cancer screening, and the health impacts of early marriage, necessitated the purposeful oversampling of female participants to ensure their perspectives were adequately captured and to generate findings relevant to these gendered health priorities [21].

Data collection tools and methods

Data collection was led by a qualitative research expert, with all data gathered by senior investigators boasting over twenty years of collective experience in qualitative methodologies and community-based participatory research within rural Zimbabwean settings. In addition, specialised training in FGD facilitation, focusing on techniques for managing group dynamics, neutral probing, and creating a safe environment for discussion, is required to ensure the collection of rich, authentic data.

To gain deeper insights into prevalent health conditions in the community, key informant interviews were conducted with village heads and healthcare workers at the local clinic using a key informant interview guide. FGDs were conducted with community members and VHWs using an FGD guide. The FGD guide had questions on access to health care services and barriers, health-seeking behaviour, communicable and non-communicable diseases.

To accommodate potential gender biases arising from the 80% female composition, investigators employed several key strategies. They conducted separate, homogeneous focus group discussions for men and women to ensure all participants felt comfortable speaking openly. Interviewers used neutral questioning techniques and were trained in reflexive practice to remain aware of their own potential biases. Furthermore, the perspectives of male participants and key male informants, such as village leaders, were intentionally analysed to identify and contrast differing viewpoints, thereby ensuring the findings incorporated a balance of gendered experiences despite the sample skew.

A visit to the local clinic was conducted to assess existing gaps in healthcare services and locally available resources. A checklist was used to assess the following components: availability of health care infrastructure and facilities, access and transportation, adequacy of medical equipment and supplies, workforce availability, health programmes and services, and patient care and treatment. This multifaceted approach allowed for a nuanced analysis of how these variables interact and influence health outcomes in the community. All participants demonstrated literacy,

and to ensure comprehensive understanding and cultural relevance, all research questions and materials were professionally translated into Shona, the local language predominantly spoken in the community.

Data analysis

A comprehensive data management protocol was implemented to ensure the integrity and confidentiality of all collected information. All FGDs and in-depth interviews were audio-recorded using dual digital recorders, with files securely transferred to password-protected cloud storage within 24 hours. Verbatim transcription was conducted by trained bilingual assistants following a standardised verification protocol. A structured digital filing system with restricted access was established for efficient data retrieval, featuring encrypted backups and adhering to a five-year retention period in compliance with institutional ethical guidelines.

Data were analysed using a manual inductive thematic analysis [22]. The process began with the familiarisation phase, involving repeated reading of transcripts to gain deep immersion. Initial codes were then generated by manually highlighting and labelling meaningful excerpts in the text, prioritising data-driven codes over pre-conceived categories. These codes were collaboratively grouped into potential themes, which were reviewed and refined through an iterative process of checking against the coded extracts and the entire dataset to ensure analytical rigour [16].

Finally, clear definitions and names for each theme were established, and compelling extracts were selected to illustrate the thematic structure in the reporting phase. Themes were consistent across the diverse participant groups. We actively searched for and analysed the data from male participants to ensure their viewpoints were not marginalised in the final thematic structure. We specifically looked for instances where male narratives offered a different emphasis or perspective on a shared theme, and we have ensured these nuances are represented in our results where they occurred.

Ethical considerations Ethical approval for this study was granted by the Medical Research Council of Zimbabwe (MRCZ/A/3191/2024). Before data collection, community-level permission was obtained from Tsakare's traditional and administrative leaders. This process involved providing a detailed explanation of the study's purpose, procedures, potential risks and benefits, and the voluntary nature of participation. Participants were explicitly informed of their right to refuse to answer any question or withdraw from the study at any point without penalty.

To accommodate varying literacy levels, both written and witnessed oral consent were options, with all participants receiving a copy of the consent information. To uphold confidentiality, all personally identifiable information was immediately removed during transcription and replaced with unique, anonymised codes. Data was stored securely in password-protected files, and physical notes were kept in a locked cabinet, accessible only to the core research team. In reporting the findings, all quotes and narratives are presented without any information that could identify the individual.

Results

Participant characteristics

A total of 39 participants were included to ensure representation of key stakeholders in the community health system. Most of the participants were females, 31 (79.5%, Table 1). The study found four significant domains that influence Tsakare community health dynamics: (1) the dual burden of infectious and noncommunicable diseases; (2) health-care system problems; (3) socio-cultural practices and norms; and (4) socioeconomic and environmental challenges Themes derived from the discussions included communicable and non-communicable diseases, perceived social and cultural health issues, and health system factor challenges (Table 2).

Table 1. Participant Characteristics, Tsakare Community, Mount Darwin, Zimbabwe, 2024

Variable	Frequency (n=39)	Percentage (%)
Sex		
Female	31	79.5
Male	8	20.5
Type of participants		
Community members	19	48.7
Village Health Workers	15	38.5
Community leaders	3	7.8
Health care workers	2	5.0

The rising burden of NCDs amidst a lack of community awareness and services

The most frequently mentioned health challenges were non-communicable diseases, with high blood pressure (BP) commonly referred to as "BP" and diabetes mellitus referred to as "sugar." Other diseases included cancer, mental health, arthritis, asthma, malaria, dysentery, cholera, sexually transmitted infections, including HIV and AIDS, and cardiovascular diseases.

A village health worker said,

'Our major problem in this community is BP, followed by sugar. We have also lost a lot of people from these two

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Table 2. Themes from the Focus Group Discussions, Tsakare Community, Mount Darwin, Zimbabwe, 2024

Thematic Area	Specific Challenges
Non-Communicable Diseases (NCDs)	• High blood pressure (hypertension) • Diabetes • Cancers (Cervical, breast, prostate) • Cardiovascular disease • Asthma • Arthritis • Mental Health Disorders
Communicable Diseases	• Sexually transmitted infections • HIV/AIDS • Malaria • Cholera • Tuberculosis • Dysentery
Socio-Cultural Factors	• Poverty, early marriages • Teenage pregnancies • Home deliveries (without skilled birth attendants) • Strong reliance on traditional medicines
Health System Factors	• Long distance to health facilities • Poor Health Facility Infrastructure • Inadequate medical supplies and a lack of equipment • Poor maternal and child health services • Shortage of healthcare professionals

diseases' (FGD 1, VHW 5, female).

Cardiovascular diseases were also mentioned, with community members reporting a high number of individuals succumbing to sudden death. The community members' perception of the causes of these deaths was that people were not screened because of a lack of equipment at the local health facilities.

'People are just falling, and the next news you hear is that the person is dead. Some people in the community have suffered a stroke, and there is hardly any help for those people, and the burden all falls on the families who become the carers with no means and know how' (IDI, 1, Village leader 2, male).

The community also lamented the lack of screening services for cancers, particularly cervical and breast cancers. Some community members alleged that the cancer screening services were only benefiting People Living with HIV who were the recipients of communication of screening dates.

'Women would like to be screened for free, but there are hardly any announcements about such programs. It is only people who are on Antiretroviral therapy who are made aware' (FGD 1, Community member 3, female).

This assertion was, however, denied by a VHW who suggested that women were shunning the services. Only one male participant referenced prostate cancer, identifying erectile dysfunction as one of its associated symptoms. He said,

'This cancer, which affects men, has affected our manhood, and that is why a lot of men are being abandoned by their wives' (FGD 2, Community member 6, male).

Mental health also emerged as a prominent topic among the FGD participants. The community members attributed it to substance and drug abuse, which was rampant in the Tsakare community. The FGD participants reported that many youths were engaging in drug use, which had led to an increase in young people loitering in the community and engaging in disorderly conduct.

'We are no longer feeling safe in this community, as these young people are taking 'mutoriro' [crystal meth] and you find them sticking [local lingo for being disoriented]' (FGD 1, Community member, 5, Female).

The elderly women also voiced concerns about experiencing pain in their knees and feet. A healthcare worker confirmed that many people in the community had arthritis, which was underdiagnosed, as there were no facilities in the community. One of the participants jokingly said the cause of knee problems and sore feet was that they had been overused.

'Those feet have aged because they have been overused [laughter by the participants]' (FGD 1, Community member, 7, female).

Some participants identified asthma as a concern. This disease was reported to be prevalent among children. The major concern was that asthma was not effectively managed in both the communities and the health care facilities. One participant said,

'…due to insufficient asthma management skills by the community and lack of medication at the health facilities, children are suffering' (FGD 2, VHW, 8, female)

Occupational health was also a major issue. Discussions revealed that there is a lot of gold mining in Tsakare. The artisanal miners do not have protective clothing, and they also risk injuries such as being trapped in the mines and major injuries due to cave-ins, equipment malfunctions, which could lead to fractures, amputations and fatalities.

'Artisanal miners are exposed to many diseases due to the dust they inhale without protective clothing' (FGD, 2, Community member, male).

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Communicable diseases perpetuated by environmental factors and high-risk livelihoods

The communicable diseases participants cited were water-borne diseases, which included cholera, dysentery, typhoid and bilharzia (schistosomiasis). The participants stated that their area was experiencing acute water scarcity with chronic shortages of potable water.

'This place is very dry, and the few water bodies that we have we share with our livestock and the water we use is very dirty, and many people are suffering from diarrhoeal diseases like cholera and dysentery' (FGD 1, VHW 4, female)

Discussions with the health staff indicated that Mount Darwin is an endemic area for schistosomiasis. The disease was said to be aggravated by poor sanitary conditions and environmental factors. During the rainy season, there were no bridges, and the children had to cross rivers barefoot on their way to and from school. Adults were exposed to schistosomiasis through occupational activities like utilising river/stream water for crop irrigation. The children also used these streams for recreational activities like swimming.

'This area is very hot, and children cool themselves in schistosomiasis-infested water bodies, particularly during the rainy season' (FGD 1, Community member 4, female).

Malaria also remains a significant health challenge in Tsakare. A concerned village health worker reported that asymptomatic and mild cases were underdiagnosed despite the availability of malaria prophylaxis from VHWs.

'We have malaria medication, but the problem is that people sometimes come to us when they are very ill' (FGD 1, VHW 2, female).

Several participants raised concerns that HIV and other sexually transmitted infections could be increasing in emerging 'hot spots' that were linked to artisanal mining, tobacco sales, nightclubs, illicit drug markets and the rampant vending activities in the community.

'We know that there is a lot of HIV transmission among school children and makorokoza [artisanal miners] as female school children have set base at the places that are most frequented by these miners' (FGD 2, Community member 5, female).

Sociocultural norms as determinants of health-seeking behaviour

The identified sociocultural factors linked to health included the use of traditional and herbal remedies, beliefs in witchcraft, gender-based violence, early marriages, teenage pregnancies, home deliveries, religious beliefs and fear of medical interventions. According to the participants, a lot of people in the communities relied on herbal medicines for all diseases, particularly the prevalent noncommunicable diseases. The problem with herbal medicines was that they were self-prescribed and, at times, taken alongside conventional medicine, which posed a risk of contraindications.

'The problem is that people now have more trust in traditional medicine, and sometimes they use both, which is discouraged' (IDI 1, health care worker, female).

The discussants also suggested that the community still believed that some diseases, like stroke and mental illnesses, were attributed to witchcraft and, therefore, there was poor health-seeking behaviour. Certain religious sects were discouraging their congregants from accessing health facilities and using conventional medicine, preferring holy water and stones. These sects also discouraged women from seeking maternal health care services and were still using their own Traditional Birth Attendants (TBAs).

Mount Darwin was reportedly one of the areas where teenage pregnancies and early marriages were rife. The participants attributed this to poverty in the area and the proliferation of artisanal miners. Poverty was identified as a driving factor for transactional sex for financial support, resulting in unintended pregnancies. A female participant said,

'A lot of schoolgirls are dropping out of school due to pregnancies, and some are even married off by their families to avoid the stigma of being termed single mothers'. (FGD 2, Community member 7, female).

Systemic health service deficiencies undermining care quality and access

Discussions and community mapping indicated that Tsakare Clinic's catchment had 80 villages with only 19 VHWs, yet the expectation is to have one VHW per village. There was a VHW who was, at the time of the study, managing seven villages.

'The clinic's catchment area is too large, and VHWs are overworked. Furthermore, the clinic faces medication shortages due to limited funding (FGD1, VHW 3, male).

Clinic infrastructure and resource constraints reflecting systemic neglect

The clinic, formerly a farmhouse, is located at the Tsakare Business Centre and serves approximately 11,000 people. Tsakare Clinic is managed by a Health Centre Committee (HCC) comprising community representatives, a local councillor, and a member of parliament. The clinic is funded through voluntary community contributions of

United States Dollar (USD) 1.00 per month per household, with total monthly collections rarely exceeding 20USD.

Participants expressed concerns about the clinic's location, as it shared boundary walls with the community homesteads. The fence was porous, allowing livestock such as cattle and chickens to roam freely. Observations raised concerns of the clinic's proximity to the households, as it could lead to potential exposure to infectious diseases or biohazardous waste. The clinic's old incinerator posed a risk of air pollution to residents in the vicinity.

'… the clinic's siting makes it a ticking time bomb. Patients seeking care for one condition may be exposed to additional, often preventable, infectious diseases (IDI, 2, Health care worker, female).

The clinic had poor infrastructure, characterised by dilapidated buildings (poor staff accommodation), inadequate consultation rooms (with HIV/Tuberculosis services offered in a temporary container), unreliable water supply (5000-litre tank supplying clinic and residents), no electricity (relying on a small solar system), limited essential equipment with only two ambulances servicing 22 clinics. The small drug room was unsecured. There was a single Blair toilet facility comprising four squat holes and four bathrooms serving both staff and patients.

'We do not have to tell you more about this place, you have at least seen everything for yourselves' (IDI, 1, Health care worker 1, female).

For maternal and child health care services. a small room had been converted to a delivery room, and after delivery, the mother and child would be transferred to a general ward (a room housing both male and female patients with different diseases). The lack of a mother's shelter had led to an increase in home deliveries, resulting in delayed management of complications, births before arrivals (BBAs) and greater reliance on TBAs. Concerns were raised about the psychological impact on other patients due to a lack of privacy, especially in the event of unfavourable outcomes such as death.

'Patient accommodation leaves a lot to be desired, with no privacy, and patients get scared when a death occurs.' (FGD 2, Village health worker 2, female).

Discussion

This study revealed that health challenges in Tsakare are interlinked and mutually reinforcing, forming a complex syndemic driven by poverty and systemic weaknesses. Four domains shaped community health: communicable diseases, non-communicable diseases, socio-cultural influences, and health system constraints. Hypertension and diabetes were widespread, exacerbated by poor awareness and unhealthy diets, elevating risks of cardiovascular disease, renal failure, and stroke. Reliance on traditional medicine, child marriages, and delayed healthcare seeking increased the prevalence of infections, including HIV, while poverty limited access to care and education, particularly for girls.

The under-resourced health system, with staff shortages and poor infrastructure, further hindered service delivery. Substance abuse, linked to poverty and mental distress, contributed to crime and social instability. Together, these factors create a self-perpetuating cycle of poor health and socio-economic disadvantage.

This study found that Tsakare's health challenges form a complex, mutually reinforcing syndemic, dominated by the dual burden of communicable and NCDs, deeply influenced by sociocultural and systemic factors. The finding that hypertension and diabetes are perceived as the top health threats aligns with the national epidemiological shift towards NCDs in Zimbabwe [23]. However, our data reveal a critical local nuance: the community's narrative of "sudden death" is not just a clinical observation but a manifestation of a crisis-driven, rather than prevention-oriented, health-seeking model.

These conditions often coexist, compounding risks for cardiovascular disease, renal failure, and stroke [24]. Studies suggest that diabetes mellitus, predominantly type 2 diabetes, is rising sharply due to sedentary lifestyles and ageing populations [24]. Integrated healthcare approaches targeting lifestyle modifications, regular screening, and improved access to medications are essential to curb this growing epidemic [25].

Findings revealed a high burden of water- and vector-borne diseases, creating a scenario where the health system and households are forced to juggle acute and chronic crises, a challenge documented in other resource-poor settings across Sub-Saharan Africa [26].

The reliance on traditional medicine and the prevalence of early marriages are more than just cultural footnotes; they are critical determinants of health access. Our findings suggest that the preference for traditional medicine is not merely cultural but is also a rational response to a health system perceived as inaccessible, understocked, and, at times, ineffective. This mirrors findings in Mozambique and Malawi, where traditional healers fill a service-delivery void [27]. Similarly, the high rate of early marriages in Mashonaland Central [28] is not just a statistic but a key social driver of health vulnerabilities, directly impacting girls' risk for STIs, HIV and AIDS, maternal mortality, and intergenerational poverty.

A concern was raised about early marriages, which have also been reported in Southern African countries such as Zimbabwe, Mozambique, Malawi, and Zambia, with

significant negative effects on girls' health, education, and social development. Key drivers of early marriage include poverty, food insecurity, and entrenched gender inequalities, which create economic pressures that encourage families to marry off daughters early [29]. Cultural and religious practices, such as those within Apostolic sects in Zimbabwe, further perpetuate early marriages [30]. Despite legal reforms like Zimbabwe's 2022 Marriage Act, which prohibits marriage under 18, enforcement remains weak, and societal norms continue to impede progress [31].

The tour of Tsakare Clinic revealed not only resource constraints but also exposed a system in a state of structural collapse. The lack of an ambulance, a mother's shelter, and basic equipment is not just an inconvenience but are fundamental breach in the continuum of care. The absence of a mother's shelter in Tsakare was linked to a rise in home deliveries, a similar finding by [32]. Addressing this gap requires investment in infrastructure alongside community sensitisation to promote facility-based deliveries, which are critical for improving maternal and newborn health outcomes [33].

The porous clinic boundary, shared with livestock, is a powerful symbol of the blurring line between a place of healing and a source of disease. This level of infrastructural decay, while extreme, reflects a broader pattern of rural health marginalisation, where geographic and economic peripherality translates into medical abandonment [34,35]. These findings resonate with broader issues faced by rural healthcare systems globally, where resource constraints hinder service delivery [36,37]. Similar studies have documented how resource constraints limit service delivery in rural clinics across Africa, often leading to unmet healthcare needs among populations [38,39]. Mother's shelters provide a safe and supportive environment for expectant mothers to stay close to health facilities as they approach delivery, thereby reducing delays in accessing emergency obstetric care [40].

The findings from Tsakare present a critical test case for the Education 5.0 framework. While the framework mandates co-creation of solutions, our data reveal that current interventions may be insufficiently transdisciplinary and fail to address root causes. An effective Education 5.0 response would not just involve the medical faculty running a screening camp. It would integrate public health (for community NCD awareness campaigns), engineering (to design low-cost water purification and clinic incinerator solutions), social sciences (to address the socio-economic drivers of early marriage and substance abuse), and business studies (to develop sustainable models for the health fund levy).

This approach aligns with modern calls for transdisciplinary collaboration, where universities break down traditional silos to co-produce knowledge and innovations that are more responsive to complex societal challenges like syndemics [41]. The challenges in Tsakare highlight the gap between the theory of interdisciplinary collaboration and its practice. As noted in a systematic review, while the benefits of such integration are widely acknowledged, successful implementation requires dedicated institutional support and frameworks that are often still lacking [41].

The Tsakare community's willingness to pay a small clinic fee shows a strong sense of ownership, a key goal of participatory research [42]. However, the university must help transform this fragile, goodwill-based system into a sustainable one, not just record it. Recent studies confirm that while local payments boost engagement, they often fail due to small contributor pools, management problems, and a lack of government support [43]. Therefore, the university should use its business experts to co-design simple financial systems with the community and explore new ideas, like affordable digital micro-insurance, which has improved sustainability in similar settings [44].

Finally, the university can close Tsakare's health infrastructure gap by mobilising resources, technical skills, and students to build a new, community-focused clinic. Models like Stellenbosch University's Ukwanda Centre for Rural Health show that universities can successfully partner with communities to construct and run health facilities, providing sites for hands-on interdisciplinary learning and better rural health care [45]. This approach enhances student training, deepens public trust, and extends quality care to underserved areas, fulfilling the social innovation aims of Education 5.0. Overall, implementation of Education 5.0 in Tsakare requires dedicated institutional support, multidisciplinary collaboration, and alignment with evidence-based frameworks to ensure theory meets practice and produces measurable societal transformation.

Our study's strength included comprehensive data collection methods, FGDs, observations, and some ethnography provided a robust understanding of health issues in the Tsakare community. This study acknowledges interviewer bias, social desirability bias, the purposive sampling strategy and selection bias, which could limit the generalisability of findings.

These limitations were mitigated through homogeneous FGD grouping, neutral interviewing techniques, and researcher reflexivity, while methodological triangulation strengthened the overall validity of the findings. While youths were not specifically sampled as a separate participant group, youth-related health challenges such as substance abuse, early marriage, teen pregnancy, and STIs were prominently mentioned in the data provided by adult participants. Future research should purposefully involve young voices to better understand and address their health needs.

Conclusions

This qualitative research emphasises the intricate and multifaceted health challenges encountered by the Tsakare community in rural Zimbabwe. The results indicate a persistent dual burden of disease, where non-communicable illnesses like hypertension and diabetes coexist alongside communicable diseases such as schistosomiasis, diarrhoea, and HIV. The community's health challenges are significantly exacerbated by key socio-cultural factors. These include a strong dependence on traditional medicine, a high prevalence of early marriage, and deeply ingrained gender-specific health-seeking behaviours. Furthermore, these problems are perpetuated and amplified by a local health system that is severely under-resourced and difficult for residents to access.

The circumstances in Tsakare highlight the necessity for a comprehensive and interdisciplinary approach, consistent with the Education 5.0 framework. Siloed, disease-focused interventions are inadequate to tackle the intertwined determinants of health. Sustainable advancement in community health will necessitate co-developed, context-sensitive solutions. These solutions must simultaneously strengthen health service delivery and address underlying socioeconomic and environmental causes. Furthermore, they must foster meaningful collaboration among academic institutions, health authorities, and the community itself to ensure success and sustainability.

What is Already Known About this Topic

- Maternal and newborn mortality rates in Zimbabwe are still high, largely due to delays in seeking, travelling to, and receiving quality maternal health services
- Men's participation in maternal health remains limited, even though research indicates that they play a crucial role in influencing women's decisions regarding healthcare
- Cultural expectations and gender roles often prevent men from actively engaging in antenatal, delivery, and postnatal care
- Previous research in Sub-Saharan Africa has demonstrated that involving men in maternal health can enhance timely access to skilled care and decrease avoidable complications
- Despite global efforts advocating for male involvement, the practical incorporation of men into maternal health programs in Zimbabwe is still insufficient

What This Study Adds

research offers insights specific to the context of Tsakare, Zimbabwe, on how socio-cultural norms and health system elements influence men's participation in maternal and community health

- It emphasises the obstacles that hinder male involvement, such as perceptions of health related to gender, financial limitations, and insufficient support from the health system
- The results highlight the important role of Education 5.0 in encouraging community involvement and collaborative solutions for local health issues
- By capturing the voices of the community, this study provides evidence that can inform policy and program strategies aimed at fostering inclusive, family-centred healthcare models

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Authors' Contributions

ZNJ and RM: Led the research process, including conception, design, acquisition of data, analysis, and interpretation of the findings, as well as drafting the manuscript. SC, MC: Worked together in analysing and interpreting the results, guaranteeing the precision and significance of the research while also writing the draft manuscript. PG, CT, GM, RG, JC, JC, MM, and FM: participated in the review of the manuscript, providing important insights and direction regarding the methodological strategy and understanding of the findings. They also reviewed the manuscript to enhance clarity and flow. All the authors reviewed and approved the manuscript.

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Conflict of Interest Statement

The authors of this work declare that there are no competing interests.

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