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Research Article

Can Social Innovation advance the PMTCT programme? A South African reflection

¿Puede la Innovación Social contribuir al avance del programa PMTCT? Una reflexión sudafricana

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Abstract: The prevention of mother to child transmission (PMTCT) programme is an initiative developed to enable health care practitioners to provide essential care to mothers in order to prevent the transmission of HIV to their infants. However, the PMTCT programme has not been reaching its intended prevention objectives. This paper identifies the social issues that elucidate the gap between PMTCT program goals and the role that Social Innovation could play in improving the status quo. Supporting Social Innovation in health helps reduce infectious diseases by empowering communities to become active participants in their health challenges through local adaptation of global strategies that facilitate the reduction of health system limitations. The article combines a review of the literature with empirical evidence extracted from research that has analyzed the postpartum experiences of mothers living with HIV in the context of the PMTCT program in Khayelitsha, Cape Town, South Africa in 2021. To address the research question, exploratory research has been adopted through a case study. The research is qualitative, exploratory and descriptive based on a case study constructed with secondary data. The results show that Social Innovation contributes to addressing healthcare challenges by providing more personal, analytical and preventive healthcare pathways. In addition, Social Innovation makes a critical contribution to addressing demographic challenges by helping those who are unable to access healthcare. This paper argues that Social Innovation in health is most effective when it occurs from the bottom up, as it is a process that engages the community and connects social change and health improvement through the diverse efforts of local actors. The article demonstrates that having local beneficiaries drive the development of a Social Innovation programme in health results in more viable and sustainable solutions. It also demonstrates that Social Innovation harnesses the ingenuity and willingness of community members, strengthening conventional health service systems and helping to achieve improved and sustainable health services.

Keywords: social innovation; SIH: Social Innovation in Health; PMTCT: Prevention of Mother to Child Transmission; MTCT: Mother to Child Transmission; LMICs: Low-Middle in Countries.

Resumen: El programa de prevención de la transmisión materno-infantil (PMTCT) es una iniciativa desarrollada para que los profesionales de la salud proporcionen atención esencial a las madres con el fin de prevenir la transmisión del VIH a sus hijos. Sin embargo, el programa PMTCT no ha alcanzado los objetivos de prevención previstos. Este documento identifica las cuestiones sociales que explican la brecha entre los objetivos del programa de PMTCT y el papel que podría desempeñar la Innovación Social para mejorar el statu quo. El apoyo a la Innovación Social en materia de salud ayuda a disminuir las enfermedades infecciosas al empoderar a las comunidades para que se conviertan en participantes activos de sus retos sanitarios, mediante la adaptación local de estrategias globales que faciliten la reducción de las limitaciones del sistema sanitario. El artículo combina una revisión de la literatura con evidencia empírica extraída de

una investigación que ha analizado las experiencias posparto de las madres que viven con el VIH en el marco del programa PTMH en Khayelitsha, Ciudad del Cabo, Sudáfrica en 2021. Para abordar la pregunta de investigación se ha adoptado un diseño de investigación exploratoria mediante un estudio de casos. La investigación es cualitativa, exploratoria y descriptiva, basada en un estudio de caso construido con datos secundarios. Los resultados muestran que la Innovación Social contribuye a abordar los retos sanitarios proporcionando vías de atención sanitaria más personales, analíticas y preventivas. Además, la Innovación Social contribuye de forma decisiva a abordar los retos demográficos, ayudando a los que no pueden acceder a la asistencia sanitaria. Este documento sostiene que la Innovación Social en el ámbito de la salud es más eficaz cuando se produce de abajo hacia arriba, ya que es un proceso que involucra a la comunidad y que conecta el cambio social y la mejora de la salud a través de los diversos esfuerzos de los actores locales. El artículo demuestra que el hecho de que los beneficiarios locales impulsen el desarrollo de un programa de Innovación Social en materia de salud da lugar a soluciones más viables y sostenibles. Asimismo, demuestra que la Innovación Social aprovecha el ingenio y la voluntad de los miembros de la comunidad, fortaleciendo los sistemas convencionales de servicios sanitarios y ayudando a conseguir unos servicios sanitarios mejorados y sostenibles.

Palabras clave: innovación social; SIH: Innovación Social en Salud; PMTCT: Prevención de la Transmisión Materno Infantil; MTCT: Transmisión Materno Infantil; LMICs: Países de renta media-baja.

1. Introduction

The Prevention of Mother to Child Transmission (PMTCT) is a global intervention programme that was initiated by the United Nations (UN) to protect children around the world from HIV infection (Nyamhanga, Frumence & Simba, 2017). The PMTCT programme has undergone extensive transformation since its initiation (Chersich et al., 2018). However, retention in care in the PMTCT programme remains a challenging problem, even though access to Antiretrovirals (ARVs) treatment and the PMTCT programme has improved (Fayorsey et al., 2016). According to de Villiers (2021), retention in care is influenced by physical accessibility, access to health and case studies, financial affordability and acceptability which are problems originating from social context. For the effective management of the PMTCT programme, it is crucial to recognise the involvement of HIV/AIDS as a disease necessary to effectively manage mothers living with HIV.

The support of Social Innovation in health helps lessen infectious diseases of poverty by empowering communities to become active participants of their health challenges, through the local adaptation of global strategies that facilitate the reduction of health system limitations (Dako-Gyeke et al., 2020). The contribution of Social Innovation in health helps also bridge gaps in primary health care systems by providing a fresh lens to strengthen these health care systems and engaging communities in creating and sustaining solutions (Dako-Gyeke et al., 2020).

Literature highlights the expedient influence of Social Innovation in reducing infectious diseases and contributing positively towards health systems (van Niekerk, Manderson & Balabanova, 2021). This paper combines a review of the literature with empirical evidence extracted from a master's research which explored the experiences of postpartum mothers, living with HIV, of the PMTCT programme in Khayelitsha, Cape Town in 2021. The case study approach adopted in this paper aims to identify the social issues that explain the gap between PMTCT program goals and the role that could be played by Social Innovation to improve the status quo.

2. Literature Review

2.1. Overview of PMTCT programme in South Africa (SA)

In the past decade, there has been widespread progress globally in the prevention of mother-to-child transmission (PMTCT) of HIV and in 2014, the World Health Organisation (WHO) launched the call for elimination of mother-to-child transmission (MTCT) of HIV. Countries must meet specific criteria to achieve elimination status, including ≤50 new paediatric infections per 100.000 live births. For countries with high prevalence of antenatal HIV, these targets are very challenging and will only be achieved with extremely low transmission rates requiring almost total coverage of a comprehensive package of PMTCT interventions (Pellowski et al., 2019).

Scaling up of the PMTCT policy did not yield enough results to meet the Millennium Development Goal of reducing child mortality by two-thirds back in 2015 (United Nations [UN], 2015). Therefore, more work needs to be done in the quest to meet the Sustainable Development Goals (SDGs) particularly goal 3, which aims to "ensure healthy lives and promote well-being for all at all ages". The target of this goal is to "end preventable deaths of new-borns and children under-five years of age by 2030" (UN, 2015). To achieve the SDG, more radical efforts are needed from all stakeholders to respond to the gaps that still exist in the PMTCT programme, and finally rescue children from this infectious yet preventable disease. To achieve the set SDG target of ending AIDS by 2030, a new way of doing things and a different thinking is urgently needed. Some of the challenges, such as losing cases to follow up, inadequate documentation and stigma, cannot be ignored. Accessibility to healthcare facilities for all members of the community needs to be prioritised. In rural areas, women still give birth at home without the assistance of a trained health worker. Shortages of human resources in healthcare facilities, socio-economic conditions, and patriarchal cultural practices that exist in rural areas contribute massively to the challenges that affect implementation of the PMTCT programme (Anígilájé, Ageda & Nweke, 2016).

Furthermore, poor implementation of policies and guidelines has often been reported (du Plessis et al., 2014) as one of the major contributors to poor management and treatment of children under five years of age who are exposed to HIV. Nonetheless, it is imperative to acknowledge that management of HIV infection is complex, and the dynamics that influence the success of programmes such as PMTCT need to be understood in all their stages. Hence, the aim of this integrative literature review is to explore the impediments to and reasons for poor management of children under five years of age who are exposed to HIV in SA (Buthelezi, Modeste & Phetlhu, 2020).

2.2. Overview of PMTCT programme in South Africa (SA)

In South Africa, the PMTCT programme was first initiated in 2002 in Khayelitsha, Cape Town's largest township (Nicol, Dudley & Bradshaw, 2016), which had the highest HIV prevalence in the Western Cape- 34.3% of pregnant HIV positive women in 2012 (Stinson et al., 2016). According to the most recent census of 2011, Khayelitsha has a population of 391 749 (Frith, 2019). The national PMTCT programme began with maternal and infant single dose Nevirapine (NVP) and later transitioned to triple ARV therapy in February 2008. The programme has been amended and updated over the years and currently is Option B+, which is the provision of ARV's to all women living with HIV irrespective of CD4 or WHO clinical staging (Goga et al., 2016). The PMTCT programme is implemented through a comprehensive approach whereby women are given comprehensive antenatal services including HIV testing, implementation of safe childbirth services including counselling on infant feeding, and follow-up of mother and infant in the postnatal period (AVERT, 2018).

Western Cape, a province in South Africa, its PMTCT programme offers HIV testing for all pregnant women and those who test positive are immediately started on lifelong HIV treatment (Western Cape Government consolidated guidelines for HIV treatment, 2018). The risk of transmission is prevented during labour, after delivery and right through the postpartum phase,

including monitoring the mothers' viral load every three months for the duration of breastfeeding (Western Cape Government, 2018). The new WHO global health strategy on HIV was endorsed by the World Health Assembly in 2016, which called for all states and WHO to aim towards the target of zero new HIV infections in infants by 2020 (Banja & Gebrehanna, 2020).

Despite the great progress in the implementation of this programme, there is still room for improvement due to the lack of adequate follow up treatment of mothers living with HIV, thus increasing the risk of mother-to-child transmission (Mutabazi, Zarowsky & Trottier, 2017). Goga et al. (2016) reported that, in 2016, the national target for South Africa of <2% transmission risk at six weeks has not yet been achieved. UNAIDS (2010) and WHO (2011) shared that the cumulative loss to follow-up in Sub-Saharan Africa PMTCT programmes is estimated between 20-28% during antenatal care, up to 70% after four months after delivery and close to 81% at six months after delivery. Retention in care is essential as it provides opportunities to monitor response to treatment, prevent HIV associated complications and reduce the risk of transmission (Yehia et al., 2015). ART and retention of mothers in care are also vital in achieving the goal of eliminating new infections among children at a global level. Mothers who are retained in care are less likely to transmit the virus to their infants and both have improved health outcomes.

2.3. Problematic of the PMTCT programme

Mother to Child Transmission of HIV (MTCT) remains the most common cause of paediatric HIV infection in sub-Saharan Africa. In the absence of interventions, the risk of MTCT increases (Obai et al., 2017). The chance of vertical HIV infection without any intervention ranges between 15–45% and providing timely antiretroviral prophylaxis for HIV-exposed infants and ART for HIV-positive mothers are helping to cut back the risk below 5% (Belachew, Tewabe & Malede, 2020). Globally there has been significant progress in the prevention of mother to child transmission towards the goal of eliminating paediatric HIV infection.

Velapi (2021) in her dissertation that was exploring the experiences of mothers living with HIV of the PMTCT programme in Khayelitsha, recognised various contributors that influence the retention of mothers in the programme. The study revealed issues of health facility (institutional segregation) based on the patient's condition (HIV status), this made the mothers feel stigmatized and discouraged them to return for follow up visits (Velapi, 2021). The mothers also experienced that many health care workers showed hostile attitudes towards their patients. This created uncertainty and fear for the mothers. Examples included being shouted at if they had missed an appointment or being afraid to ask for information about their prescribed medication. Rasmussen et al. (2018) have identified this as one of the health care system challenges that limit the optimal uptake of the programme. Some of the mothers were predisposed to such treatment by health care workers as they were employed and their employers were not flexible in allowing them to visit the clinic once a month every month, as per PMTCT protocol. This made the mothers reluctant to return based on the anticipated reception. Other areas of concern, as revealed by the study was the minimal knowledge of HIV/AIDS and PMTCT programme that the mothers' possessed; unsatisfactory male partner involvement as a support system; fears and uncertainties of raising the HIV-exposed baby; fear of stigma risk of being identified as People living with HIV (PLWH).

2.4. The nexus between Social Innovationand Health

Before we can explore the relationship between Social Innovation and health, it is important to discuss what Social Innovation is. This will give a better understanding and overview of the role that can be played by Social Innovation in strengthening health systems and practices.

2.4.1. Overview of Social Innovation

Polman et al. (2017) defines Social Innovation as the reconfiguring of social practices, in response to societal challenges, which seeks to enhance outcomes on societal well-being and necessarily includes the engagement of civil society actors.

Social Innovation has ascended as a pioneering theme in the study of innovation. It has been regarded as an evolving research field in which there has been several descriptions. Such elements contribute to amplify discussions between scholars and practitioners about how the concept should be defined and which terms should be used, once it is commonly, but not consistently used in the literature (Moulaert et al., 2013).

To present a definition of Social Innovation is not an easy task given that Social Innovation is variously defined (Elliott, 2013), hardly seems as a plainly outlined scope (Howaldt & Schwarz, 2010) and has a number of conceptual overlays (Iizuka, 2013).

Social innovations are known as new practices used to tackle social challenges; they have a positive influence on individuals, society, and organizations. Social innovations have also been defined as new models, services, and products that simultaneously meet social needs (Marolt et al., 2015).

Two comparable definitions are those by Murray et al. (2010) who define social innovations as new ideas (products, services and models) that concurrently meet social needs and create new social relationships. Simply put, they are innovations that are both good for society and enhance society's capacity to act. Similarly, Bacon et al. (2008) holds that the term 'social innovation' refers to new ideas developed to fulfil unmet social needs. The cumulative use of the term Social Innovation has brought different meanings and therefore concepts with different understandings.

This study is nevertheless steered by the Benneworth (2013) description of social innovation. He positions that a true Social Innovation is systems-changing by developing novel solutions in border spanning learning communities to create social value and promote community development, challenging existing social institutions through collaborative action developing wider networks.

2.4.2. Social Innovationin Health

Social innovations in health are all-encompassing solutions to address access to healthcare gap through a multi-stakeholder, community-engaged process. Many social innovations have been developed in response to specific community needs. A subset of social innovations has transformed health service delivery in low- and middle-income countries (LMICs) (Akuffo & Soop, 2020).

According to Reeder et al. (2019, gaps remain to persist in healthcare and access to health services, LMICs. Social innovations offer a renewed perspective to reinforce health systems and primary health care. Through inclusive approaches, innovative solutions are developed and implemented by multiple-stakeholders address complex and longstanding health problems. Social innovations enable healthcare delivery to be more inclusive, effective and affordable. Social Innovation tackles "how" to improve health, by engaging communities in creating and sustaining solutions (Reeder et al., 2019).

Health systems and access to health services in South Africa continue to face critical challenges. Social innovations offer a renewed approach to reinforce health systems and primary health care. Social innovations play a critical role in transforming the lives of individuals and communities and it has the ability to make healthcare services to be more inclusive and accessible. Social Innovation has to improve health, by engaging communities in creating and sustaining solutions (Mason et al., 2015). Social Innovation in health is a community-engaged process that links social change and health improvement, drawing on the diverse strengths of local communities (Halpaap et al., 2020).

South Africa's social and health challenges are associated with the past and present circumstances of inequality. Several of difficulties in the South African healthcare system can be traced back to the apartheid era in which the healthcare system was extremely disjointed, with inequitable consequence, between racial groups (Baker & Mehmood, 2015). Social and structural conditions that excluded people from the health system are still obstinate. Social Innovation has

emerged as an alternative to address complex and obdurate societal challenges such as poverty and inequality, and as a way to yield lifelong social change.

Dako-Gyeke et al. (2020) assert that, marginalised countries, such as South Africa, encounter challenges related to poverty, tenacious health difficulties, underdeveloped infrastructure, limited capacity of local actors to detect appropriate, workable and accessible interventions. Social Innovation in Health offers a means by which various stakeholders can cultivate and support local responses to daily needs and constraints to access health services.

3. Research Methods

3.1. Case studies as theory building

The case study remains one of the most frequently employed study designs in Social Innovation due to its probing nature. Case studies are practically an example of 'researching 'open systems' where the phenomena can less be controlled, variables are not linear and they interact in changing ways over time (Merriam, 1998).

To address the research question with this framework, we espoused an exploratory research design using a case study. The basis for steering case study research branches from the fundamental work of Yin (2009) and Eisenhardt (1989), precisely, on their references for writing up qualitative research. Yin (2009) labels a case study as an empirical inquiry that investigates a modern phenomenon in depth and within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident. He further clarifies how this research strategy is suitable for a situation with many variables of interest, multiple data sources and useful previously developed theoretical propositions. Similarly, in-depth case study research analysis is especially suited to theory building in an area where there is little prior research and understanding is relatively poor (Benbasat, 2017). Eisenhardt (2018) provides details about how to develop theory in connection with case studies, determining steps for developing a qualitative study and specifying how these steps can enrich theory by leading to new theoretical propositions.

Using their recommendations, this case study is an appropriate method for informing theory. The research strategy of this article is to develop a theoretical understanding of the role that Social Innovation can play in improving equity in public health. To this end, the case study remains one of the most commonly employed study designs in Social Innovation due to its exploratory and explanatory potential. Case studies are methodologically an example of researching a phenomenon that can less be controlled, variables are not linear and they interact in changing ways over time, just as Social Innovation itself is an ongoing evolving process that is highly context bound (Bansal & Corley, 2012).

3.1. Research design and setting

This paper aims to identify the social issues that explain the gap between PMTCT program goals and the role that could be played by Social Innovation to improve the status quo. This research is qualitative, exploratory and descriptive, based on a case study built with secondary data.

This study was conducted in the Khayelitsha township of Cape Town, in one of the largest community health care centres. Khayelitsha has one of the highest HIV burdens globally (Berkowitz et al., 2018). In the Western Cape, Khayelitsha has the highest HIV prevalence (Stinson et al., 2016).

Patients in Khayelitsha that are on ART account for 17.5% of the total number of people on ART in the Western Cape. In this province, treatment is provided in over 250 clinics, which is approximately 1% of the total number of patients nationally across 3 800 clinics (Kaplan et al., 2017). There has been an increase in the percentage of HIV-infected pregnant women from 19.3% in 2000 to 34.3% in 2012, compared with 29.5 % on a national scale (Stinson et al., 2016).

Khayelitsha is the largest peri-urban township in the Cape Town metropole, located approximately 35km from the city centre and is an area of 43.51 square kilometers. The population is estimated to be 391,749 with an unemployment rate of 38%. Similar to other areas, migration from South Africa's bordering provinces and countries is the main contributor to the high population density in Khayelitsha (Stinson et al., 2016).

Approximately one fifth of women of childbearing age (15–49 years) in South Africa are HIV-infected (Statistics SA, 2018). According to Stinson et al. (2016), in 2012, 34% of pregnant women in Khayelitsha were HIV-infected. For this research, the target population was mothers who had been diagnosed as HIV-positive with exposed but HIV-negative infants who were being managed in the PMTCT programme in the health facility in Khayelitsha. The participants that were included were mothers who have been in the programme since initiation, mothers who seldom participated in the programme, and mothers who were recently initiated into the programme.

3.2. Data Collection

In order to address the research questions, the collection of secondary data (existing publications, thesis, reports and journals) was used for this research. Existing data was extracted to better understand and achieve a rigorous framework for how Social Innovation can be effectively employed to improve the experiences of the mother living with HIV in the PMTCT programme.

3.3. Data analysis

The researcher will use pattern matching suggested by Yin (2009) as a preferred strategy for case studies. Creswell (2009) suggests that a data analysis plan be used because it helps in providing categories of information that help in establishing emergent themes. The study will use emergent coding, and pattern matching coding which are analytical strategies that use codes to organize and group the coded data into categories based on common characteristics, and this sets the beginning of a category or theme in the data. Thematic analysis was used which is associated with inductive approaches and identifying themes that emerge. It was used for the purpose of producing trustworthy and insightful findings and was also beneficial in finding patterns in the data that relate to the aim.

4. Results and Discussion

In this paper, we have asked the research question of how Social Innovation can improve PMTCT, through a reflection of the experiences of the mothers in the PMTCT programme. Our case study has analysed an example of Social Innovation projects that have a social objective and emphasises the participation of the concerned communities.

As alluded in the introduction, this paper combines a review of the literature with empirical evidence extracted from research which explored the experiences of postpartum mothers, living with HIV, of the PMTCT programme in Khayelitsha, Cape Town in 2021 and the Social Innovation in health case studies. The analysis aims to identify the social issues that explain the gap between PMTCT program goals and the role that could be played by Social Innovation to improve the status quo.

With the aim to determine if Social Innovation can improve the PMTCT program, this paper establishes a link between the effective Social Innovation strategies in the presented case studies and recommendations in "Mothers living with HIV in PMTCT program in Cape Town, Khayelitsha" study.

The study aimed to explore the experiences of mothers living with HIV in the PMTCT programme and to explore the experiences of their infants' treatment process. The qualitative approach probed the researcher to understand the participants' lived experiences. The study

revealed that community support and health system related factors played a role in participants' engagement in the programme. Based on the mothers' experiences, recommendations from the study included education regarding PMTCT practices be improved during initiation of the programme to facilitate prevention of the transmission of HIV, continuous staff training and development for the maintenance of accurate service delivery, remove barriers such as the specific demarcation of HIV services in the facility as this contributes to patient identification and stigma. Lastly, the study also suggested that facilities should offer flexible opening times for mothers who find it difficult to attend as they are employed, alternatively an after-hour clinic.

4.1. Espousal of Social Innovationapproaches to enhance health programs

Social innovations are deeply rooted in the knowledge of the community and that effective solutions built upon the knowledge and experience gained in seeking to address adversity and problems. Social innovations in health are inclusive solutions to resolve the healthcare challenges, and need to be a multi-stakeholder and community-engaged process.

Furthermore, one can deduce from the case studies that, when the search for answers to healthcare issues is inclusive and it doesn't just involve health experts and authorities, it is possible that it can also address fundamental factors that wave the social, cultural and economic conditions for the issue to persist.

Below we discuss some of the themes that emerged from the case studies and how they speak and relate to the challenges and recommendations made by the PMTCT study conducted in Khayelitsha, South Africa.

4.1.1. Theme 1: Community Knowledge and Education

In the case of Khayelitsha Cape Town, participants of the study displayed limited knowledge with regards to HIV, the PMTCT programme and its principles. This study recommended that the facility develops a strategy to assess the effectiveness of the programme, with specific reference to mothers' knowledge and understanding of the programme and adherence to it. Health information and education provided to the mothers should be focused, contextual, practical, and with a clear rationale for the information and advice. This recommendation is supported by the case study where the cases presented those effective social innovations were profoundly entrenched in the knowledge of the community, and that results were constructed on the knowledge and skill attained in efforts to solve hardship and challenges. Knowledge dissemination in and amongst communities permitted the adoption of solutions. Education was mutual to all the Social Innovation case studies and thought to be crucial to the efficiency and long-term effect of each social innovation.

4.1.2. Theme 2: Community Support and Engagement

The PMTCT study suggested that community support was as important as partner and family support. For some participants, the community services provided more assistance than family or partners. The support participants received from community programmes influenced the way in which they interacted in the PMTCT programme. The mothers in the PMTCT programme were allocated to a treatment buddy, a person who is a member of the community who follows up on the patients in their homes and on progress with their treatment. Treatment buddies clarified any misconceptions that mothers may have and checked that mothers understood information provided by health practitioners.

The Social Innovation process exemplifies a bottom-up view of strategy and application that begins with the acceptance that entire members of society have agency and have the ability to resolve their own difficulties (Mulgan et al., 2007). We can deduce from our case studies that Social Innovation is a communal process allowing the generation of notions by people who seek to enhance wellbeing. They point towards the need to support the community's capacity to engage in collaborative processes. The ideas from our Social Innovation cases are, to a great extent, established by community members as a rejoinder to healthcare challenges, such, the cases

exemplify how community-driven Social Innovation initiatives make a positive contribution to addressing specific challenges faced by the community.

4.1.3. Theme 3: Transform healthcare practice through Social Innovation

According to Godin (2015) Social Innovation can contribute to new policy solutions in the health system. Successful social innovations can be replicated and scaled up to reach larger influence and the results from these social innovations can offer valued information on how health care services can be distributed.

The thesis recommended the evaluation and efficacy of the MTCT programme as participants displayed limited knowledge with regards to HIV, the PMTCT programme and its principles. The study holds that the facility develops a strategy to assess the effectiveness of the programme, with specific reference to mothers' knowledge and understanding of the programme and adherence to it.

Social innovations provide a renewed perspective to reinforce health systems and health care. Through inclusive methods, innovative solutions are planned and executed by community members, health workers and other actors to tackle multifaceted and long-lasting health issues. The case is a testimony that when new practices and methods are needed to address new or recurring health challenges. Social Innovation strategies and processes can create sustainable change within health and eventually improve population health outcomes. As such, Social Innovation offers new perspectives and tools to tackle the key health policies that are perhaps not effectively working for a certain segment of the population.

Furthermore, our case study further emphasises that when conventional approaches and top-down strategies are not effective, the solutions identified through the "Shortening distances through telemedicine in Honduras" case demonstrate the ingenuity of communities to fortify health systems. These social innovations offer a novel approach to solve existing and deeply entrenched health challenges. In all the three case studies presented in the paper, social innovations thrived in solving prevailing challenges and have the potential of addressing and contributing to the positive alteration of the health systems and practices.

4.1.4. Theme 4: Bottom up approach and inclusiveness

According to Gregoire (2016) effective and efficient Social Innovation is a bottom-up, citizen-led approach that results in developing and application of inventive solutions that unravel persistent health system problems. Espousing this method can aid the aims and objectives outlined in the policy framework. The Khayelitsha study, suggested that engaging the community to actively address social factors outside of the clinic environment, ongoing patient-tailored counselling for HIV-positive mothers, and increasing male involvement are key to the success of PMTCT programmes in Khayelitsha and similar locations.

The lesson drawn from the case study is that, central to Social Innovation is the notion that societies are capable of forming solutions to solve their own health care challenges. This understanding permits for inclusive participation in solution-creation by all members of the society, including, health workers, community members and policy makers. When Social Innovation adopts a bottom-up approach, the results are specific to the contingent and socio-economic intricacies of a community. Shared application, community involvement and agency ensure that solutions are sustained and continuous over a period of time, as such people remain in charge of their well-being. This inclusive nature of Social Innovation leads to communities with enhanced capacity to act and take ownership of implemented solutions and their own health (Chomane & Biljohn, 2021). The case of the PMTCT programme in South Africa is not a unique case. Many well-intended programmes and projects flop to effectively address social challenges. Programmes are often imposed into the society with slight or no contextual understanding. Consequently, the lack of engagement with marginalised communities result in South African policy makers missing out on the opportunity for more informed contributions.

5. Conclusions

The findings of this paper suggest that Social Innovation can aid in addressing numerous social challenges including health challenges. This case study shows that Social Innovation contributes towards addressing health challenges by providing more personal, analytical and pre-emptive health care paths. Furthermore, there is a critical contribution made by Social Innovation towards addressing demographic challenges by helping those that are unable to access healthcare. Additionally, the results of this paper highlight that, through Social Innovation healthcare delivery can be inclusive, effective and affordable by engaging communities in creating and sustaining solutions.

To this end, social innovative solutions presented here were based on the knowledge and experience of individuals and communities facing adverse circumstances, this knowledge was shared through health promotion and education, resulting in empowerment of the communities. The primary problems addressed by the solutions were the limited access to health care services and unsuccessful conventional approaches. These innovative and inclusive solutions verified how Social Innovation can brace health systems by providing new perspectives to health care problems and aiding societies to take ownership of their lives.

This paper holds that Social Innovation in health is more effective when it occurs bottom-up, as it is a community-engaged process that connects social change and health enhancement, through the diverse efforts of the local actors. The paper shows that having local beneficiaries drive the development of a Social Innovation health programme results in more workable and sustainable solutions. It demonstrates that Social Innovation draws into the ingenuity and will of community members, unsettling conventional systems of health care services and aiding to accomplish improved and sustainable health services.

Simply put, it demonstrated that Social Innovation in healthcare can bridge the existing

gap in disenfranchised communities by generating prompt ideas, fosters a social proposal along with building sustainable healthcare solutions.

To conclude, this paper set to determine how Social Innovation can aid in developing strategies to improve the outcomes of the PMTCT programme by addressing the recommendations highlighted in the mothers living with HIV in the PMTCT programme.

To respond to this research question, the paper established that Social Innovation in health aids in reducing and improving health care shortcomings by empowering communities to become active participants of their health challenges, through the local adaptation of global strategies that facilitate the reduction of health system limitations. The contribution of Social Innovation in health helps also bridge gaps in primary health care systems by providing a fresh lens to strengthen these health care systems and engaging communities in creating and sustaining solutions.

As such, social innovations in health are inclusive solutions to address the healthcare delivery gap that meet the needs of end users through a multi-stakeholder, community-engaged process (Gregoire, 2016). The Social Innovation solutions highlighted demonstrated how Social Innovation can reinforce health systems by providing fresh solutions to health needs and innovative solutions were based on the knowledge and experience of individuals and communities facing adverse situations. Therefore, there is clear evidence that Social Innovation can improve health systems and programs such as the PMTCT programme.

References

Akuffo, H., & Soop, T. (2020). Funding social innovation for health with research funds for development. *Infect Dis Poverty*, *9*, 120. https://doi.org/10.1186/s40249-020-00744-w

Anigilaje, E., Ageda, B., & Nweke, N. (2016). Barriers to uptake of prevention of mother-to-child transmission of HIV services among mothers of vertically infected HIV-seropositive infants in Makurdi, Nigeria. *Patient preference and adherence*, *57*. https://doi.org/10.2147/ppa.s87228

AVERT. (2019). *Prevention of mother-to-child transmission (PMTCT) of HIV*. https://www.avert.org/professionals/hiv-programmeming/prevention/prevention-mother-child

Bacon, N., Faizullah, N., Mulgan, G. & Woodcraft, S. (2008). *Transformers: How local areas innovate to address changing social needs*. NESTA.

Baker, S., & Mehmood, A. (2015). Social innovation and the governance of sustainable places. *Local Environment*, *20*(3), 321-334. https://doi.org/10.1080/13549839.2013.842964

Banja, F., & Gebrehanna, E. (2020). Determinants of Mother to Child Transmission of HIV in Public Hospitals of West Shewa Zone, Oromiya Region: mixed method study. *Research Square,* 1-20. https://doi.org/10.21203/rs.3.rs-16716/v1

Bansal, P., & Corley, K. (2012). What's different about qualitative research? *Academy of Management Journal*, *55*(3), 509-513. https://doi.org/10.5465/amj.2012.4003

Belachew, A., Tewabe, T., & Malede, G. (2020). Prevalence of vertical HIV infection and its risk factors among HIV exposed infants in East Africa: a systematic review and meta-analysis. *Tropical Medicine and Health*, *48*(1), https://doi.org/10.1186/s41182-020-00273-0

Benbasat, I. (2017). An Analysis of Research Methodologies. In F. Warren McFarlan (Ed.), *The Information Systems Research Challenge*. Harvard Business School Press.

Benneworth, P. (2013). The Evaluation of Universities and their Contributions to Social Exclusion. In P. Benneworth (Ed.), *University engagement with socially excluded communities* (pp. 309-326). Springer.

Buthelezi, S., Marie Modeste, R., & Phetlhu, D. (2020). Impediments and reasons for poor management of children under five exposed to HIV in South Africa. *International Journal of Africa Nursing Sciences*, *12*, https://doi.org/10.1016/j.ijans.2019.100188

Chersich, M., Newbatt, E., Ng'oma, K., & de Zoysa, I. (2018). UNICEF's contribution to the adoption and implementation of option B+ for preventing mother-to-child transmission of HIV: a policy analysis. *Globalization and Health*, *14*(1).

Chomane, P., & Biljohn, M.I. (2021). A conceptual framework for using social innovation as an approach to local economic development. *Africa's Public Service Delivery and Performance Review, 9*(1), a565. https://doi.org/10.4102/apsdpr.v9i1.565

Creswell, J. W. (2009). *Qualitative inquiry and research design: Choosing among five traditions*. Sage.

Dako-Gyeke, P., Amazigo, U., Halpaap, B., & Manderson, L. (2020). Social innovation for health: engaging communities to address infectious diseases. *Infectious Diseases of Poverty*, *9*(1). https://doi.org/10.1186/s40249-020-00721-3

Dawson, P., & Daniel, L. (2010). Understanding social innovation: a provisional framework. *International Journal of Technology Management*, *51*(1), 9-21.

de Villiers, K. (2021). Bridging the health inequality gap: an examination of South Africa's social innovation in the health landscape. *Infectious Diseases of Poverty*, *10*(19). https://doi.org/10.1186/s40249-021-00804-9

du Plessis, E., Shaw, S.Y., Gichuhi, M., Gelmon, L., Estambale, B. B., Lester, R., Kimani, J., & Avery, L. (2014). Prevention of mother-to-child transmission of HIV in Kenya: challenges to implementation. *BMC Health Services Research*, 14, S10. https://doi.org/10.1186/1472-6963-14-S1-S10

Edwards-Schachter, M., & Wallace, M. (2017). 'Shaken, but not stirred': Sixty years of defining social innovation. *Elsevier Inc.*, *119*, 64-79. http://dx.doi.org/10.1016/j.techfore.2017.03.012

Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review, 14*(4), 532–50.

Elliot, G. (2013). Character and impact of social innovation in higher education. *International Journal of Continuing Education and Lifelong Learning*, *5*(2), 1-11.

Fayorsey, R. N., Chege, D., Wang, C., Reidy, W., Peters, Z., Syengo, M., ... & Abrams, E. J. (2016). Mother Infant Retention for Health (MIR4Health): study design, adaptations, and challenges with PMTCT implementation science research. *Journal of Acquired Immune Deficiency Syndromes, 72*, S137-S144. https://doi.org/10.1097/qai.0000000000001060

Frith, A. (2019). *Census 2011: Main Place: Khayelitsha*. https://census2011.adrianfrith.com/place/199038

Goga, A., Dinh, T., Jackson, D., Lombard, C., Puren, A., Sherman, G., & Pillay, Y. (2016). Population–level effectiveness of PMTCT Option A on early mother–to–child (MTCT) transmission of HIV in South Africa: implications for eliminating MTCT. *Journal of Global Health*, *6*(2). https://doi.org/10.7189/jogh.06.020405

Godin, B. (2015). *Innovation Contested. The Idea of Innovation over the Centuries.* Routledge.

Gregoire, M. (2016). Exploring various approaches of social innovation: A francophone literature review and a proposal of innovation typology. *Mackenzie Management Review*, 17(6), 45-71. https://doi.org/10.1590/1678-69712016/administracao.v17n6p45-71

Halpaap, B., Peeling, R. W., & Bonnici, F. (2019). The role of multilateral organizations and governments in advancing social innovation in health care delivery. *Infectious diseases of poverty*, *8*(1), 1-5. https://doi.org/10.1186/s40249-019-0592-y

Heffron, R., Mugo, N., Hong, T., Celum, C., Marzinke, M., Ngure, K., … & Baeten, J. (2018). Pregnancy outcomes and infant growth among babies with in-utero exposure to tenofovir-based preexposure prophylaxis for HIV prevention. *AIDS*, *32*(12), 1707-1713. https://doi.org/10.1097/qad.0000000000001867

Howaldt, J., & Schwarz, M. (2010). *Social innovation: concepts, research fields and international trends.* www.internationalmonitoring.com/fileadmin/Downloads/Trendstudien/

Idele, P., Hayashi, C., Porth, T., Mamahit, A., & Mahy, M. (2017). Prevention of Mother-to-Child Transmission of HIV and Paediatric HIV Care and Treatment Monitoring: From Measuring Process to Impact and Elimination of Mother-to-Child Transmission of HIV. *AIDS and Behavior*, *21*(S1), 23-33. https://doi.org/10.1007/s10461-016-1670-9

Janesick, V. (2000). The Choreography of qualitative research design, In N. Denzin & Y. Lincolns (Eds.), *Handbook of qualitative research* (pp. 379-399). Sage Publications.

Kirk, J., & Miller, M. L. (2016). *Reliability and validity in qualitative research*. Sage.

Khamisa, N., & Mokgobi, M. (2018). Risky sexual behavior and human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS) among healthcare workers. *Southern African Journal of HIV Medicine*, *19*(1), a744. https://doi.org/10.4102/sajhivmed.v19i1.744

Lizuka, M. (2013). *Innovation systems framework: still useful in the new global context?* MERIT Working Papers 2013-005. United Nations University - Maastricht Economic and Social Research Institute on Innovation and Technology (MERIT).

Mason, C., Barraket, J., Friel, S., O'Rourke, K., & Stenta, C-P. (2015). Social innovation for the promotion of health equity. Health Promotion International, *30*(2), 116-125. https://doi.org/10.1093/heapro/dav076

Merriam, S.B. (1998). *Qualitative Research and Case Study Applications in Education.* Jossey-Bass Publishers.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis*. Sage.

Moulaert, F., MacCallum, D., & Hillier, J. (2013). Social Innovation: Intuition, Precept, Concept, Theory and Practice. In F. Moulaert, D. MacCallum, A. Mehmood & and A. Hamdouch (Eds.), *The International Handbook on Social Innovation* (13-24). Edward Elgar.

Mulgan, G., Tucker, S., Ali, R., & Sanders, B. (2007). *Social Innovation: What it is, Why it Matters and How it can be Accelerated*. University of Oxford, Young Foundation.

Murray, R., Caulier-Grice, J., & Mulgan, G. (2010). *The Open Book of Social Innovation.* NESTA & Young Foundation.

Mutabazi, J.C., Zarowsky, C., & Trottier, H. 82017). The impact of programs for prevention of mother-to-child transmission of HIV on health care services and systems in sub-Saharan Africa - A review. *Public Health Reviews*, *38*(28), 1-27. https://doi.org/10.1186/s40985-017-0072-5

Nannan, N., Groenewald, P., Pillay-van Wyk, V., Nicol, E., Msemburi, W., Dorrington, R., & Bradshaw, D. (2019). Child mortality trends and causes of death in South Africa, 1997 - 2012, and the importance of a national burden of disease study. *South African Medical Journal, 109*(7), 480. https://doi.org/10.7196/SAMJ.2019.v109i7.13717

Nicol, E., Dudley, L., & Bradshaw, D. (2016). Assessing the quality of routine data for the prevention of mother-to-child transmission of HIV: An analytical observational study in two health districts with high HIV prevalence in South Africa. *International Journal of Medical Informatics*, *95*, 60-70. https://doi.org/10.1016/j.ijmedinf.2016.09.006

Nyamhanga, T., Frumence, G., & Simba, D. (2017). Prevention of mother to child transmission of HIV in Tanzania: assessing gender mainstreaming on paper and in practice. *Health Policy and Planning, 32*(5), v22-v30. https://doi.org/10.1093/heapol/czx080

Obai, G., Mubeezi, R., & Makumbi, F. (2017). Rate and associated factors of non-retention of mother-baby pairs in HIV care in the elimination of mother-to-child transmission programmeme, Gulu-Uganda: a cohort study. *BMC health services research*, *17*(1), 48. https://doi.org/10.1186/s12913-017-1998-5

Pellowski, J., Wedderburn, C., Stadler, J., Barnett, W., Stein, D., Myer, L., & Zar, H. (2019). Implementation of prevention of mother-to-child transmission (PMTCT) in South Africa: outcomes from a population-based birth cohort study in Paarl, Western Cape. *BMJ Open*, *9*(12), e033259. https://doi.org/10.1136/bmjopen-2019-033259

Polman, N., Slee, B., Kluvánková, T., Dijkshoorn, M., Nijnik, M., Gezik, V., & Soma, K. (2017). *Classification of social innovations for marginalized rural areas*. SIMRA.

Psaros, C., Remmert, J., Bangsberg, D., Safren, S., & Smit, J. (2015). Adherence to HIV Care After Pregnancy Among Women in Sub-Saharan Africa: Falling Off the Cliff of the Treatment Cascade. *Current HIV/AIDS Reports, 12*(1), 1-5. https://doi.org/10.1007/s11904-014-0252-6

Ramoshaba, R., & Sithole, S. (2017). Knowledge and Awareness of MTCT and PMTCT Post-Natal Follow-up Services among HIV Infected Mothers in the Mankweng Region, South Africa. *The Open AIDS Journal*, *11*(1), 36-44. https://doi.org/10.2174/1874613601711010036

Reeder, J.C., Kieny, MP., Peeling, R., & Bonnici, F. (2019). What if communities held the solutions for universal health coverage? *Infectious Diseases of Poverty*, *8*(74). https://doi.org/10.1186/s40249-019-0586-9

Singh, A., & Singh, S. (2008). Diseases of Poverty and Lifestyle, Well-Being and Human Development. *Mens Sana Monographs*, *6*(1), 187. https://doi.org/10.4103/0973-1229.40567

Stinson, K., Goemaere, E., Coetzee, D., van Cutsem, G., Hilderbrand, K., Osler, M., & Boulle, A. (2016). Cohort Profile: The Khayelitsha antiretroviral programme, Cape Town, South Africa. *International Journal of Epidemiology*, *46*(2), dyw057. https://doi.org/10.1093/ije/dyw057

Thomas, G., Bassi, T., Continoho, M., & Goyal, A. (2017). *Unit-5 Various Modes of Transmission of HIV*. http://14.139.40.199/bitstream/123456789/6341/1/Unit-5.pdf

UNAIDS. (2010). *Report on the global AIDS Epidemic*. http://www.unaids.org/globalreport/documents/20101123_GlobalReport_full_en.pdf

UNICEF. (2017). *Prevention of Mother to Child Transmission (PMTCT)*. https://www.unicef.org/supply/index_42855.html

United Nations. (2015). The World's Women 2015: Trends and Statistics. Sales No. E.15.XVII.8. https://unstats.un.org/unsd/gender/downloads/worldswomen2015_report.pdf

van Niekerk, L., & Chater, R. (2016). *Drug Shop Integrated Management of Childhood Illness, Uganda.* World Health Organization - WHO.

van Niekerk, L., Manderson, L., & Balabanova, D. (2021). The application of social innovation in healthcare: a scoping review. *Infect Dis Poverty*, *10*, 26 https://doi.org/10.1186/s40249-021-00794-8

Western Cape Government. (2018). *The Western Cape Consolidated Guidelines for HIV Treatment: Prevention of Mother- to- Child Transmission of HIV (PMTCT), Children, Adolescents and Adults.* https://www.westerncape.gov.za/text/2018/November/pmtct_guidelines_23112018.pdf

World Health Organization - WHO. (2011). *Prevention of Mother-to-child transmission of HIV-1*. http://www.who.int/HIV-1/topics/mtct/en/nm

Woelk, G., Ndatimana, D., Behan, S., Mukaminega, M., Nyirabahizi, E., J Hoffman, H., & Phelps, B. (2016). Retention of mothers and infants in the prevention of mother-to-child transmission of HIV programmeme is associated with individual and facility-level factors in Rwanda. *Journal of the International AIDS Society, 19*(5). https://doi.10.7448/ias.19.5.20837

Yehia, B., Stewart, L., Momplaisir, F., Mody, A., Holtzman, C., Jacobs… Shea, J. (2015). Barriers and facilitators to patient retention in HIV care. *BMC Infectious Diseases*, *15*(1). https://doi.10.1186/s12879-015-0990-0

Yin, R. (2009). *Case Study Research: Design and Methods, Applied Social Research Methods Series*. Sage.