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Using infographics to empower nursing students on integrating Ubuntu, HIV/AIDS and TB at a selected University, South Africa

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Abstract

Background Nursing students need to be equipped with specific knowledge on integrating Ubuntu, HIV/AIDS, and TB during their training to curb the pandemic in South Africa, specifically Limpopo Province. To stimulate nursing students' critical thinking when caring for patients with HIV/AIDS and TB, the Students integrated Ubuntu principles to communicate care using creativity.

Objectives To empower students to integrate Ubuntu when caring for patients living with HIV/AIDS and TB through infographics at a selected University in South Africa.

Method A qualitative participatory study approach was followed. Data was collected by engaging 25-level 1st and 2nd year Nursing students to design infographics that integrate Ubuntu, HIV/AIDS, and TB during a workshop. The participants were purposively sampled based on their creative skills and understanding of the use of infographics. Textual data from discussions, visual data from infographics, and field notes were triangulated and subjected to thematic analysis. Measures to ensure trustworthiness and ethical issues were implemented.

Results Different infographics on applying Ubuntu principles when caring for patients living with HIV/AIDS and TB were displayed and presented to the audience. Integrating Ubuntu principles, and caring for HIV/AIDS and TB through infographics were based on the knowledge and skills obtained during the workshop. The infographics and interpretations demonstrated that awareness of Ubuntu's principles is closely connected to the quality care of patients living with HIV/AIDS and TB.

Conclusion The infographics played an important role in understanding the integration of Ubuntu principles, HIV/AIDS, and TB.

Contribution Students were empowered on the use of creativity to understand Ubuntu principles when caring for patients living with HIV/AIDS and TB.

Keywords Empower, HIV/AIDS, Infographics, Integrating, Nursing students, TB, Ubuntu

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Introduction

The majority of the future healthcare workforce is made up of energetic, youthful nursing students. They have an important role to play in integrating the Ubuntu principles into the treatment of Human Immune deficiency virus/ Acquired Immune Deficiency Virus (HIV/AIDS) and Tuberculosis (TB). Empowering and equipping young people requires creativity in the form of visual cues to stimulate critical thinking [1]. Visual cues, like graphic illustrations, make it easier to recall and retrieve information. It is found to be crucial to use graphic illustrations to engage undergraduate nursing students in this increasingly visual world [2]. According to the South African National Strategic Plan for HIV, TB, and STI (2023–2028), 7 million people in South Africa are patients living with HIV positive, and an estimated 270,000 new HIV infections and 450,000 new TB infections occur annually. WHO [3] indicates that the National Department of Health has to redouble its efforts in the next 5 years in an "all of government and all of society responds" to these epidemics. The National Department of Health has to ensure that coverage of our services for prevention as well as treatment, care, and support, together with their quality, improves in every corner of our country (WHO, 2022). The key will be to improve the lives of patients living with HIV/AIDS and TB individuals including students in the planning and implementation of solutions. Students' engagement in academic- related learning activities are one of the important determinants of success [4, 5] in understanding HIV/AIDS/TB. Therefore, identifying the best teaching strategies to sustain and promote nursing students' engagement in academic and clinical settings is paramount.

Infographics are an essential teaching and learning tool because they simplify complex information into an eye-catching narrative with visual components like graphs, charts, and illustrations [6]. These components aren't just for looks, they improve data comprehension at its core, infographics are also a storytelling tool that increases engagement and attracts the attention of viewers. Integrating Ubuntu in teaching and learning has a proper assurance that comes with the fundamental recognition that each individual belongs to a greater community and is compassionate in teamwork for the greater good [7]. In aspects of life, infographics education, and Ubuntu in education helps students to build a better nation by teaching our children to put others first, to be compassionate, and collaborate for the greater good. Ubuntu also emphasizes sociability and ethics, to deepen our understanding of how to reduce HIV- and TB-related stigma in South Africa. It has been discovered that the values and principles of Ubuntu help to lessen HIV- related issues in many African regions. The Ubuntu principles of humanity also seek to address the many factors that contribute to the persistently high rates of infection, illness, and death, and it also significantly increases our focus on prevention and treatment [8]. Liu, Xu, Yang, and Hung [9], reported the existence of a knowledge gap about HIV/AIDS and TB among nursing students. The existing gaps in education were observed in integrating HIV/AIDS and TB management. Adding Ubuntu principles when empowering the nursing students with HIV/AIDS and TB knowledge, could influence the quality and level of care of People Living with HIV/AIDS (PLWH) and TB. The use of infographics fosters an environment where nursing students actively listen to one another, collaborate in teams, engage in diverse activities, and recognize their potential. A well-designed infographic can facilitate more effective learning and assist in a better understanding of how to care for PLWH and TB, especially when diversities are present. The use of infographics in the application of Ubuntu principles in HIV/AIDS and TB management can lead to holistic learning, and accelerated personality development and impart students with creativity, critical thinking, and problem- solving skills. All this strengthens the nursing curriculum, improves the synchronization of didactic and practical training, and develops standardized, competency-based examinations for nursing [10]. The current paper presents the work conducted from larger studies where some of the work has already been published, however, the focus of this paper was to empower and stimulate creativity with critical thinking among undergraduate students on using infographics to display HIV/AIDS, TB, and Ubuntu.

Purpose

The study aimed empower students to integrate Ubuntu when caring for HIV/AIDS and TB patients through the use of infographics at a selected University in South Africa.

Materials and methods

Methodology

A qualitative approach using participatory methodology was followed during a workshop. By adopting the participatory methodology, the authors were mindful that the context of visual research methods and their application or explanations are relevant to the study aim, and qualifies the participants as co-facilitators in integrating Ubuntu principles, HIV/AIDS, and TB. The process of participatory followed some steps as described in the data collection section.

Study setting

The study was conducted at a selected University in South Africa. The selected undergraduate university offers an undergraduate nursing programme. The curriculum includes HIV/AIDS and TB study content.

Population and sampling

The study population comprised 200 level 1st and 2nd undergraduate nursing students registered for the 2022 academic year at the selected Limpopo University. They were identified as they are still junior and have a lack of knowledge and skills regarding the application of Ubuntu principles in HIV/AIDS and TB management need to be empowered. The study adopted the non-probability purposive sampling technique to select 25 students attending the workshop. These students were identified after they were given work to show their technical skills, including creativity, and the ability to create unique, attractive designs and typography. They also could use colours to evoke emotions and meanings assisting in integrating HIV/AIDS and TB management with Ubuntu principles.

Data collection procedure

Since the students had already received knowledge of HIV/AIDS and tuberculosis in the classroom, different procedures for data collection were followed in an interactive workshop [11]. The first step included a knowledge-sharing session between the nursing students and researchers or facilitators to help each other understand the scope of the discussion. The second step involved identifying nursing students with technical drawing skills and an understanding of the use of infographics, to can display knowledge of HIV/AIDS and TB integrated with Ubuntu principles. Thirdly the students who confirmed to possess the required skills were requested to apply Ubuntu principles in caring for HIV/AIDS and TB patients using graphic illustrations and minimal words. Only 25 undergraduates of nurses were selected to participate others were not part of the study. On completion of the infographics, researchers and facilitators engaged students individually to explain the meaning of their drawings and action[s) in relation to Ubuntu, HIV/AIDS, and TB. Thereafter, the facilitators questioned each infographic to select the most relevant graphics for the presentation. The selection was guided by the question "What type of critical thinking and awareness of Ubuntu principles application can be generated through these illustrations in caring for HIV/AIDS and TB?". The last step involved each student presenting their own selected infographic because each participant is a valuable contributor to creating an understanding of their visual projections. An unstructured, open-ended question served as the basis for the participants' visual presentation. Before the presentation, all the participants were asked "***Can you please explain the activities illustrated in this drawing related to Ubuntu, HIV/AIDS, and TB?***" After the presentation, they were asked questions by both facilitators and other students to confirm the interpretability of the illustrations, which were regarded as part of visual data analysis. In between the questions and answers, new insights and relationships were explored and incorporated into the presentations by the facilitators to improve the existing knowledge base and create new knowledge.

Table 1 Themes and Sub-themes

Themes	Sub-themes
1.Use of infographics to communicate the integration of Ubuntu in the care of PLWHIV/AIDS & TB	1.1 Communication through diagrams
	1.2 Visual communication
	1.3 Communication through words
	1.4 Use of illustrations

Data analysis

Textual data from the discussions prompted by question-and-answer sessions, visual data from infographics and field notes were triangulated and subjected to thematic analysis. Tesch's open coding method of qualitative data analysis, as described by [12], was used to analyse the triangulated data. in such a way as to provide knowledge, new insights, and presentation of the findings. The voice-recorded information was transcribed verbatim, including the field notes data by the 1st author. She then read through each transcript to gain a general sense of each participant's knowledge regarding the studied topic. In the process, units meanings started emerging and were clustered together. Similar meanings were grouped and clustered as themes and sub-themes. All the authors applied the list of themes to the data. The themes were abbreviated as codes, which were written next to the appropriate segments of the transcripts. The authors tried out this preliminary organising scheme to see whether new categories and codes emerged. The most descriptive wording for the themes was found and categorised. Lines were drawn between categories to show the relationships. The authors made a final decision on the abbreviation for each category and alphabetised the codes. The data material belonging to each category was assembled, and a preliminary analysis was performed. The participants' direct excerpts were further used to amplify the themes and sub-themes that are discussed in Table 1 below

Results

Theme 1: Use of infographics to communicate the integration of Ubuntu in the care of PLWHIV/AIDS & TB

Students' infographics outlined various messages about incorporating Ubuntu into HIV/AIDS and tuberculosis. The presentations were in the form of Posters that conveyed various messages through four sub-themes:

Communication through diagrams, Visual communication, Communication through words, and Use of illustrations as indicated in Table 1. The sub-themes are explained below:

Communication through the diagrams

Students drew different types of graphical designs. In their drawings, Figures 1, 2, 3 & 4, the images of HIV were indicated together with the structure of the lungs. The lungs represents the respiratory system which is susceptible to TB which can occur as an opportunistic infection in patients who are living with HIV if the patient is not taking treatment.

> *"The diagrams helped me see the link between HIV and TB. It became clear how one affects the other, and why treatment is necessary."P4ML2*

Apart from the said diagram, a table was drawn in Figures (1 & 4] in which Ubuntu's philosophical values were indicated as love, caring, respect, sympathy, empathy, etc.

> *"Drawing the Ubuntu values in a table made it easier to understand their meaning and how they connect to healthcare and patient care."P12FL2*

Another drawing that one can comprehend is on stopping the spread of TB by doing so, a person who is suffering will protect others including their immediate family members from getting it with love.

"Mmh!!!. The prevention diagrams really made an impact. Seeing how TB spreads and how simple actions can stop it made me more aware of the importance of protecting others."P8ML1

When it comes to the prevention of HIV and its spread, both male and female condoms were drawn. The transmission of the virus and the bacteria that cause TB is shown in Figure 2. This was done so that the students

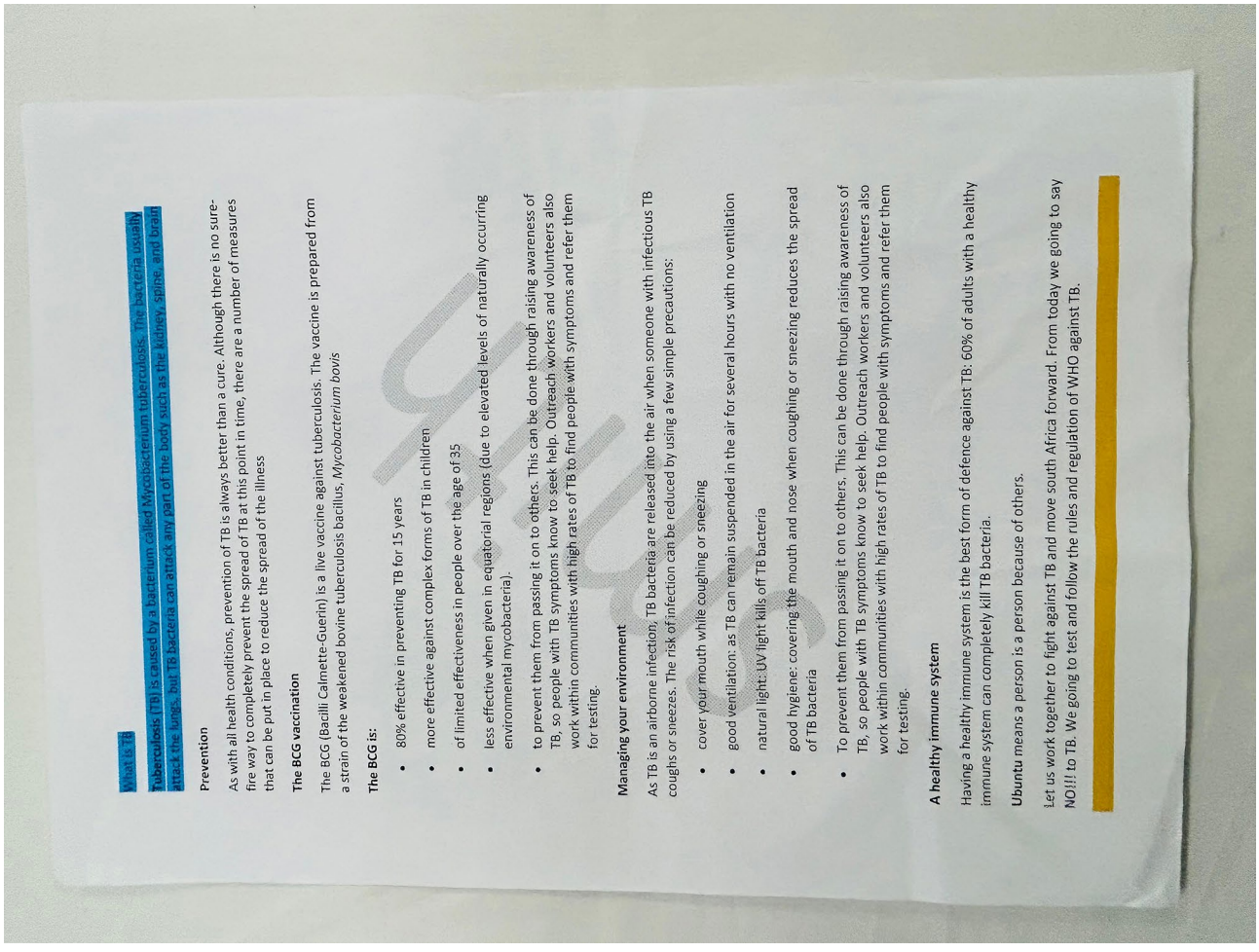

Fig. 1 Chain of connections in the fight against HIV

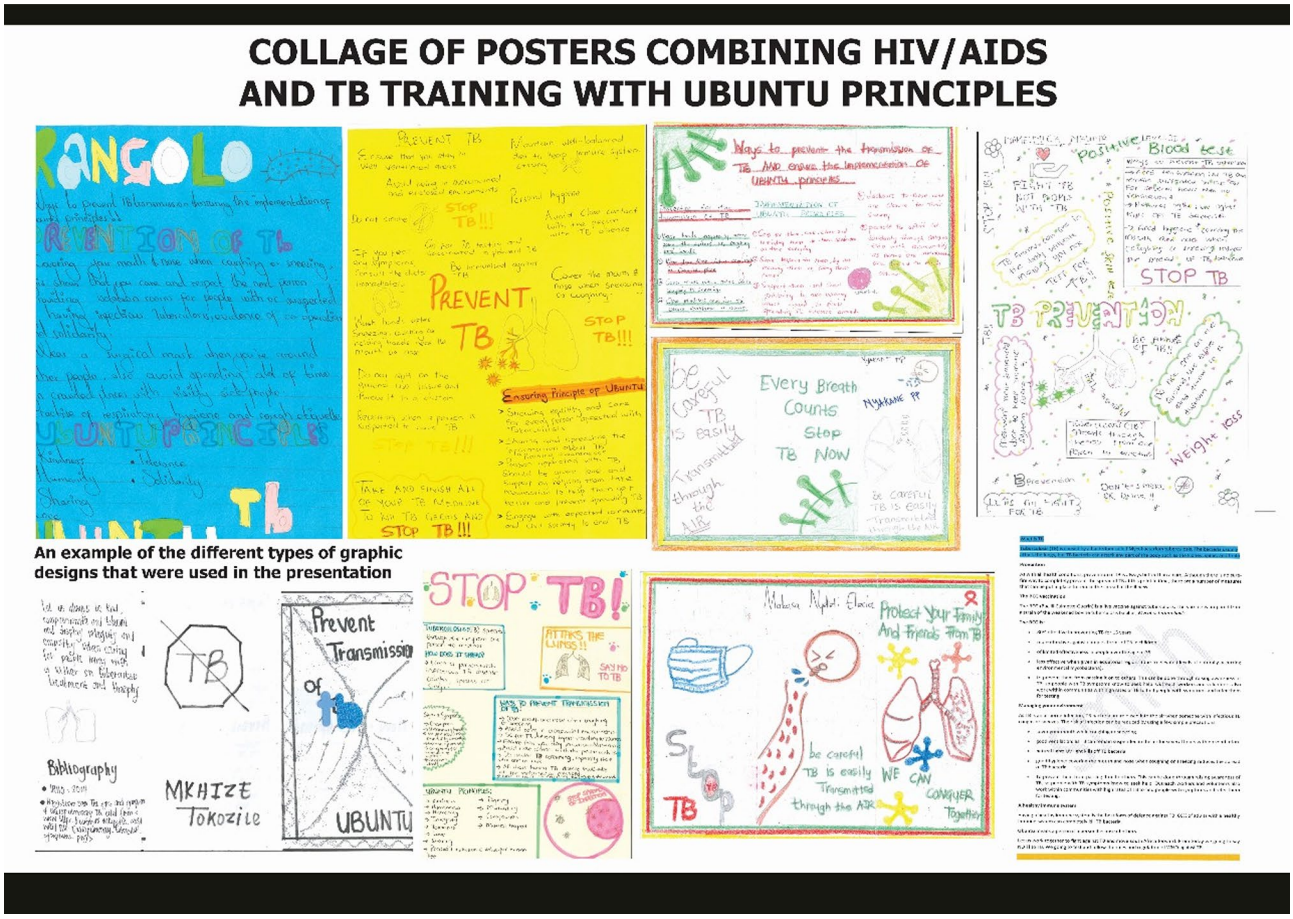

Fig. 2 A collage of posters combining HIV/AIDS and TB training with Ubuntu principles

could understand how the two spread and how they could be prevented.

> *"I have enjoyed communicating through drawing and visual imagery since a young age, so this experience was truly eye-opening for me. I felt empowered to learn about HIV/AIDS and TB alongside the principles of Ubuntu. Moving forward, I will always incorporate these principles into my nursing care and TB prevention efforts."P41ML2.*

Visual communication

Different types of visual aids on infographics containing multiple visualized data were displayed to best depict a specific type of information.

> *"The infographics helped simplify complex information, making it easier to understand the impact of Ubuntu in HIV/AIDS and TB care."P27FL1*

All the designed posters presented important information thus creating effective visuals that communicate clear and accurate information on HIV/AIDS and TB integrating Ubuntu principles.

> *"Seeing the posters made it clear how Ubuntu values like compassion and respect can change how we care for people with HIV/AIDS and TB."P21FL2*

During the presentation of one infographic students formed a human chain to embody how we are all connected and how if one suffers from HIV/AIDS we all suffer, (Figures, 4, 5, 6, 7 & 8). This is an example (Figure 9) of how the principles of Ubuntu can be visually displayed. Some visual communication proved that there are new insights into relationships and change processes when integrating Ubuntu principles in caring for HIV/AIDS and TB E.g. how the interconnectedness of the ubuntu values can reduce stigma related to HIV/AIDS and TB through solidarity.

> *"Ubuntu is about togetherness, and the visuals made this message very clear." "The human chain activity was powerful it showed that when one person is affected, we all feel the impact."P17ML1*

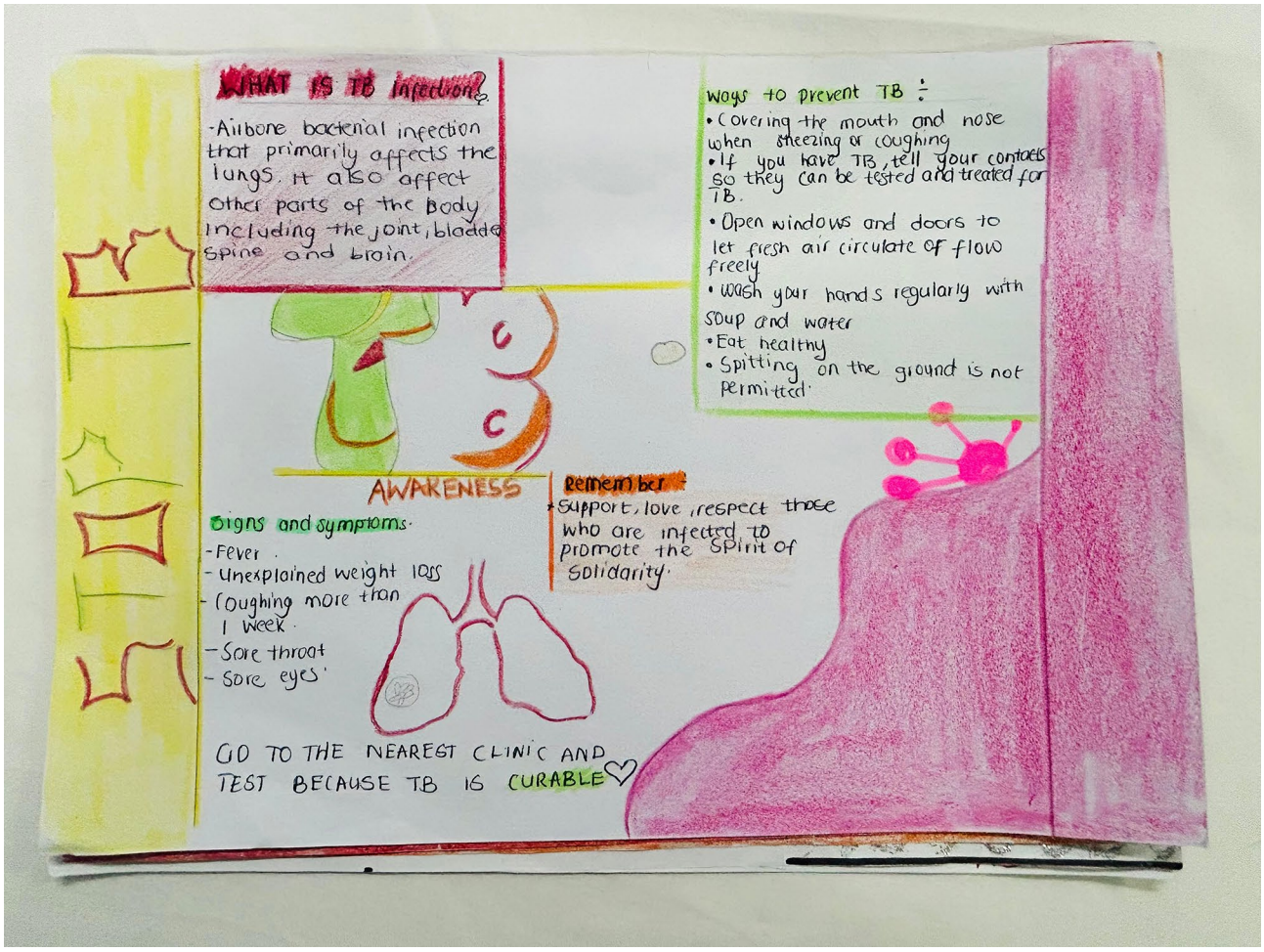

Fig. 3 Another poster displaying graphics and pertinent information

Commenting on the same illustration, P38FL2 said

> *"I always give health education on HIV/AIDS prevention but without the application of Ubuntu and the touch or solidarity of People living with HIV/AIDS holding each other's hands as a sign of Ubuntu I felt that humanity towards them without judgment*

Communication through words

Ubuntu improves the quality of care for HIV/AIDS and TB patients. The graphics, illustrations, and the attached interpretations demonstrated that awareness of Ubuntu's principles was closely connected to quality care of HIV/AIDS and TB patients. The words were connected to some of the infographics, e.g. kindness, respect, caring, compassion, and confidentiality.

> *"Seeing these values written alongside the images reinforced their importance in providing patient-centered care."P10FL2*

In their presentations and through the posters, students were able to narrate the drawings together with the written information.

> *The images are used to tell stories, making it easier for others to understand how Ubuntu connects to HIV/AIDS and TB care."P19ML1*

Through the knowledge shared during the workshop, students were able to draw other students' attention by indicating the relationship between HIV/AIDS and TB and how Ubuntu can be used to reduce the stigma and discrimination associated with the two conditions.

> *"By linking Ubuntu with HIV/AIDS care, we realized how important it is to treat people wholistically with dignity and support them as a community."P20FL1*
> *"Ubuntu reminds us that healthcare is not just about medicine, but about working together to provide emotional and social support."P35ML2*

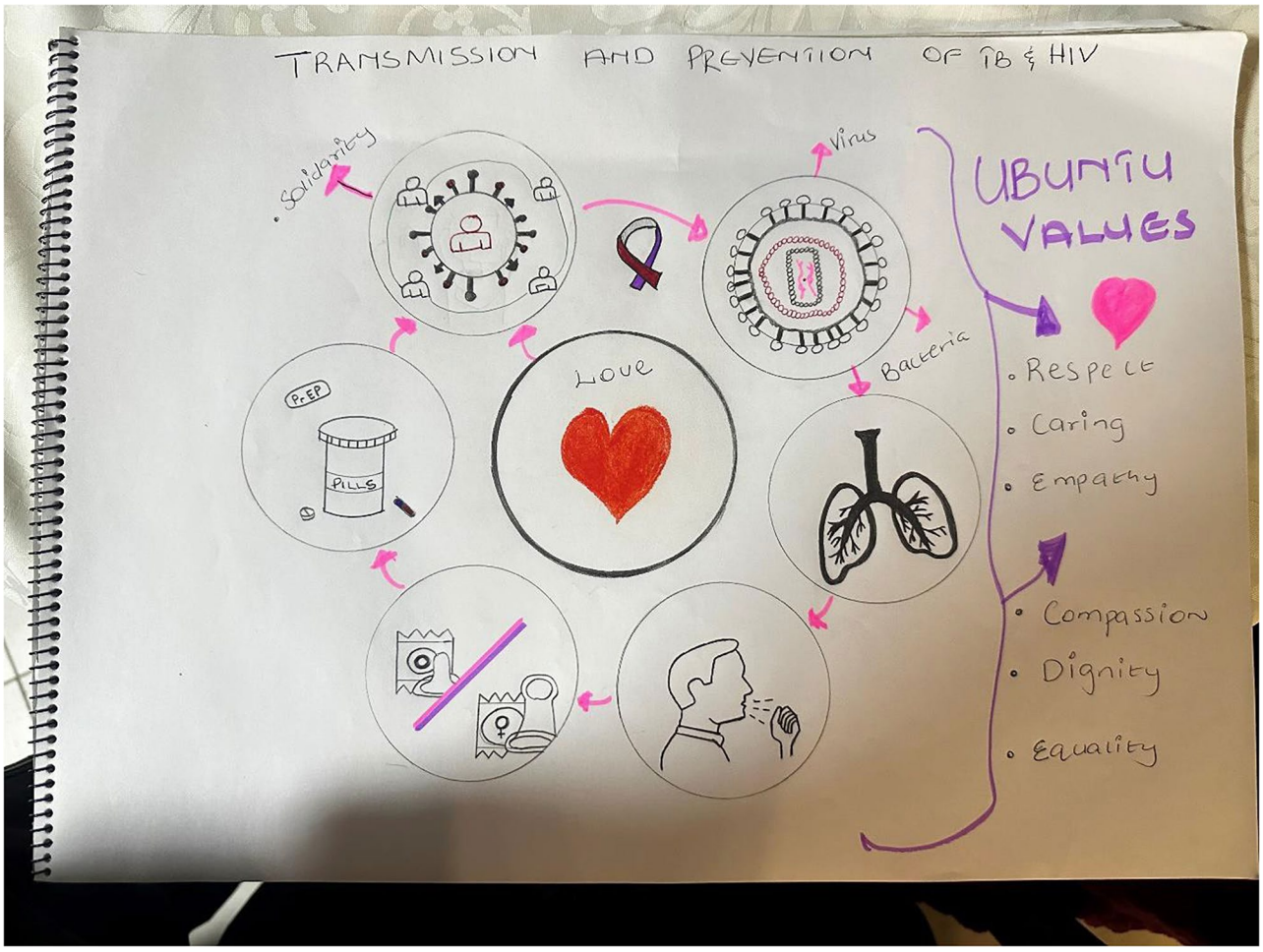

Fig. 4 An example of the different types of graphic designs that were used in the presentations

The aspects of confidentiality were stressed although they also emphasized the issue of encouraging patients to disclose their status so that they receive support from relatives, family members, and healthcare workers. Again, they have learned to encourage families, and healthcare workers to work together in supporting people who are living with HIV/AIDS or TB.

Illustrations of visual aids

In this section, illustrations were presented in the form of labels and notes to explain their infographics. Different types of posters are designed to portray Ubuntu as a critical component in the fight against HIV/AIDS and TB was displayed, see Figures 4, 5, and 6.

> *"The posters were visually striking and carried strong messages about kindness, respect, and support for those affected by HIV/AIDS and TB."P11FL2*

By focusing on different infographic designs concerning HIV/AIDS and TB and integrating Ubuntu principles the graphics helped the students to stay engaged and provide information in a new ways that are easier to understand.

> *"Using graphics made complex ideas simple, and it encouraged discussions among students about reducing stigma and supporting each other."P12FL1*

The other one said

> *"The visuals helped illustrate how compassion and respect can improve care and reduce stigma."P31FL2*

The students appreciated the presentation supported by the graphics and said:

> *"The visuals made learning interactive and meaningful, reinforcing the importance of Ubuntu in healthcare."P23FL2*

> *"The labels and notes helped clarify the meaning behind the images, making it easier to con-*

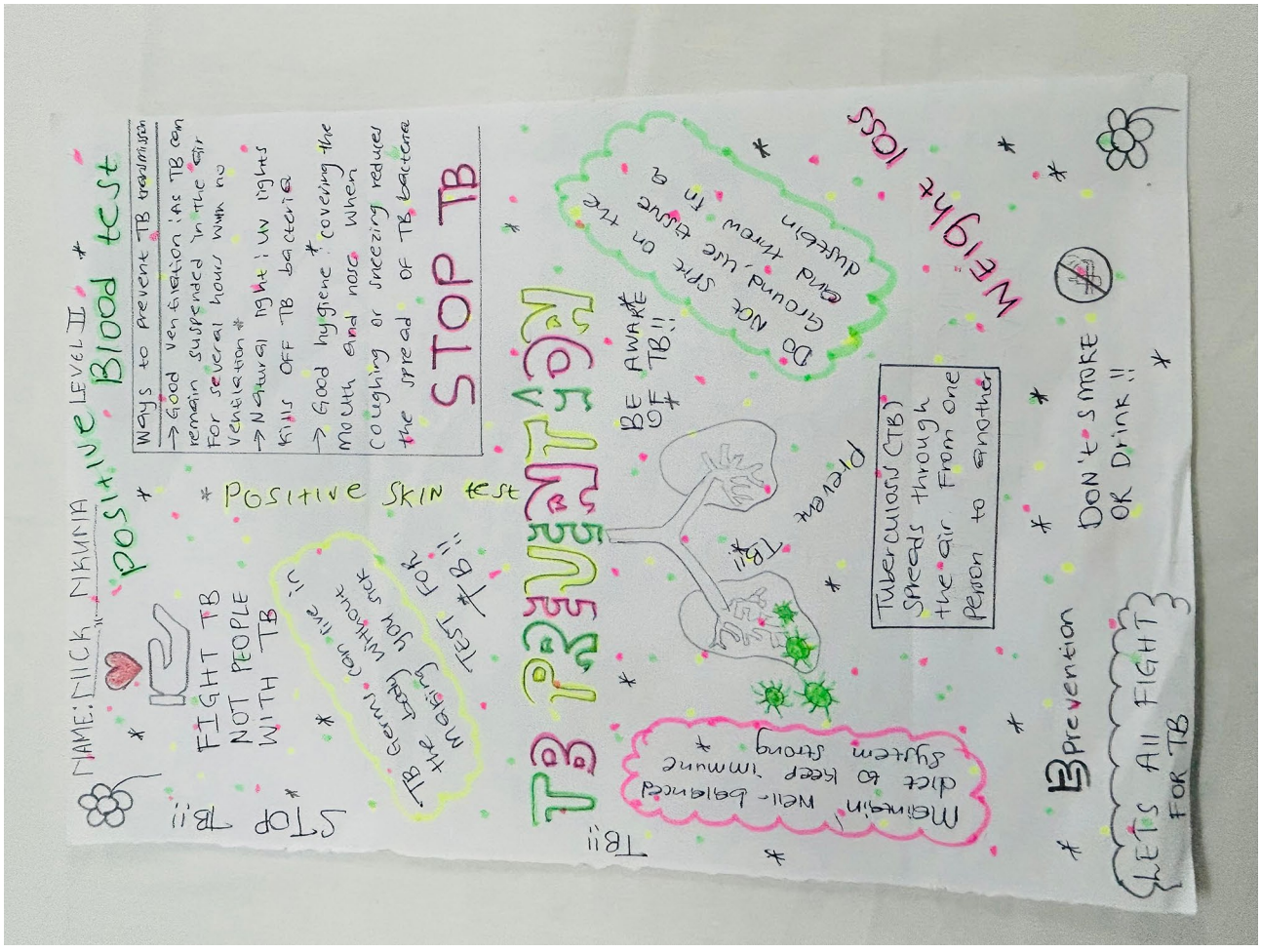

Fig. 5 Different posters

nect Ubuntu principles with HIV/AIDS and TB care."P11FL1

In their illustrations (Figures 2, 3 & 4), it was visible that the students integrated HIV/AIDS and Ubuntu principles through infographics based on the knowledge and skills gained during the workshop. When using the graphic illustrations acquired knowledge and skills appeared to was natural, students were confident, and not distracted during the presentations. To explain it further, students in Figures 1, 2, and 3 illustrated the cause of HIV as the virus and TB as the bacteria that affect a person. If it is a bacterium, it resides in the lungs (Figures 1, 2 & 3) and lies dormant until such time that the immune system is lowered then a person will show symptoms. The bacteria can be transmitted when the person coughs or sneezes in the air which will be the source of its spreading, The illustrations continue where condoms are shown, and it was indicated as a preventive measure for HIV with the use of antiretroviral drugs used to prevent and manage HIV infection. This was followed by a circle of supporting structures as a sign of solidarity for an infected person in the middle suffering from either HIV or TB. That circle of transmission and prevention incorporated Ubuntu principles and values which can be applied to people living with the two conditions so that they feel accepted.

Discussion

The results of the student's presentation proved that to effectively care for HIV/AIDS and TB several approaches e.g., visualization and infographics could be applied. Ubuntu's principles have much to offer in caring for HIV/AIDS and TB. In general, there are several ways to make HIV/AIDS and TB teaching and learning easier, like using infographics. This is especially is important when it comes to nursing education since nurses are in charge of educating those who are living with HIV/AIDS using different strategies [7]. The results of this study provided elements for reflection of the nursing teaching reality about the disease with the use of "infographics" where creativity and critical thinking were displayed which was simple and fun for the students. This is a really good idea that has had phenomenal success in social media

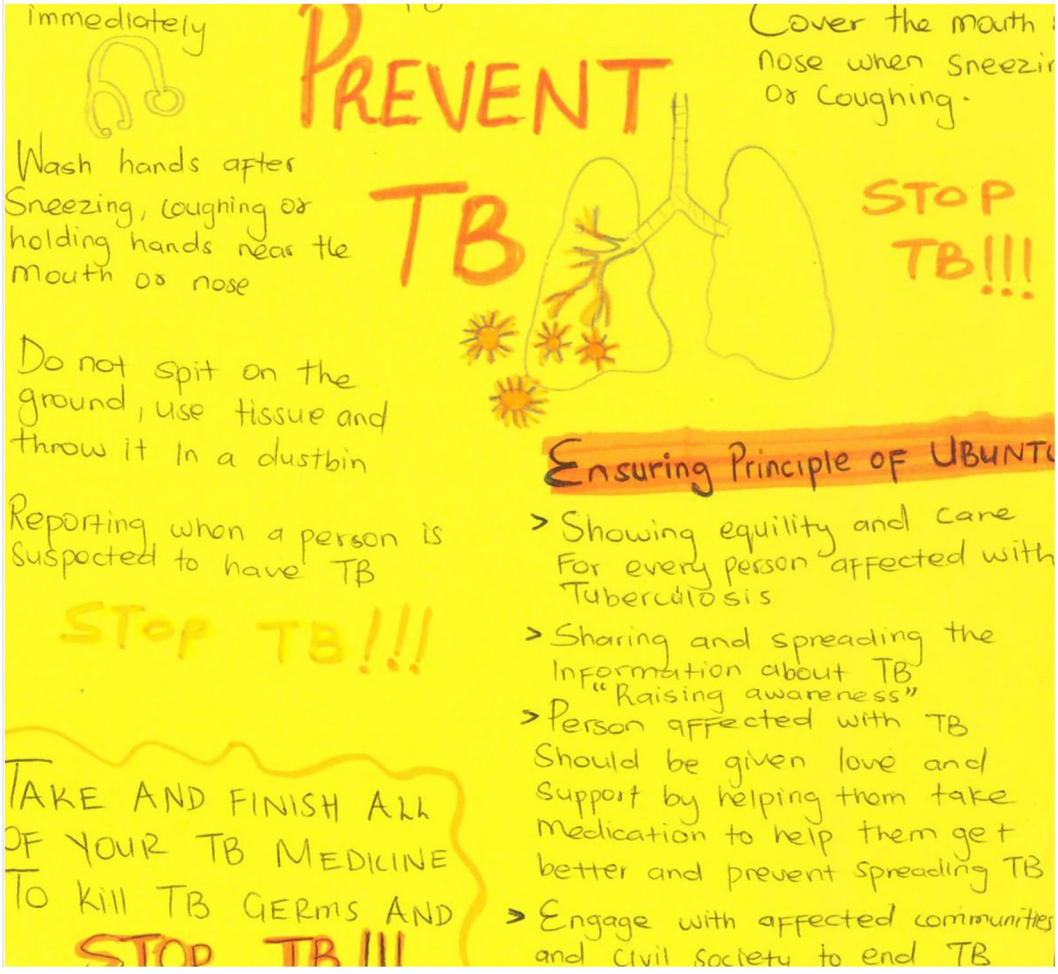

Fig. 6 Posters

Fig. 7 visual communication

sharing. Additionally, it indicates how empowerment through knowledge was acquired they were able to identify and integrate various ways in which Ubuntu can be integrated into the care of patients living with HIV/AIDS or TB. The students were able to display the learned information through posters where drawings, illustrations, and narratives. Thus, visual communications were applied. The study by The aim conducted by Daramee, Brookes,,Cruza, Smith, and Agent [13] aimed to convey data in a way that became is easier to understand

Fig. 8 Human chain to embody how we are all connected and how if one suffers from HIV/AIDS we all suffer

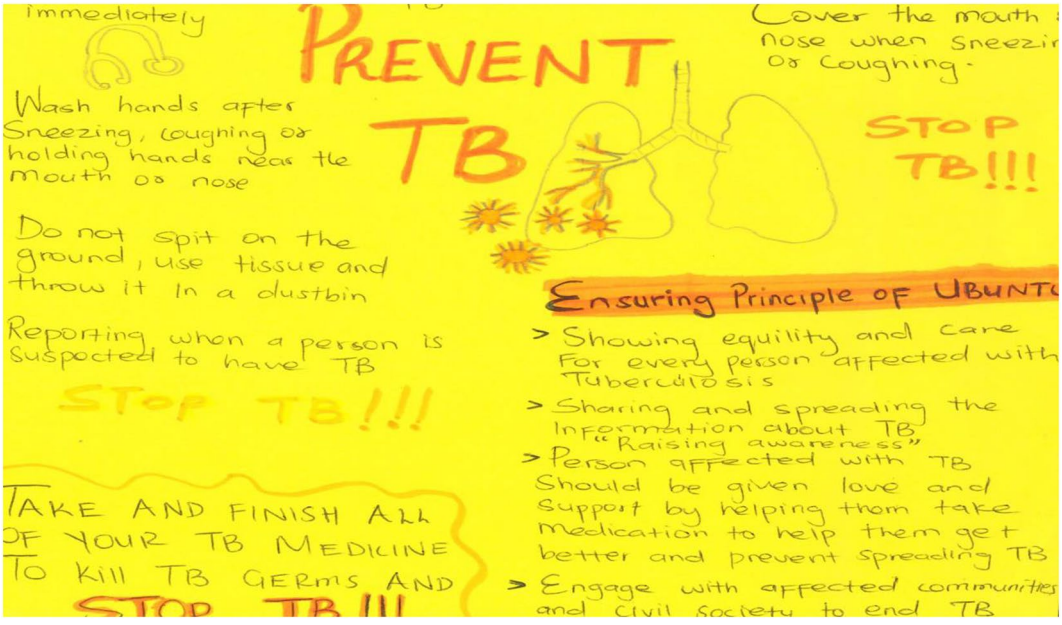

Fig. 9 How the principles of Ubuntu can be visually displayed

and more interesting to look at. The student's presentations illustrated the modes of transmission, prevention, and management of HIV/AIDS and TB. They were able to relate the Ubuntu philosophical values such as love, respect, empathy, compassion, and treating patients with dignity. Again, they have learned to encourage families and healthcare workers to work together in supporting people who are living with HIV/AIDS or TB. To treat them with respect and accept them to avoid stigma and discrimination as HIV is still a problem in many countries including South Africa. According to Stonbraker, Halpem, Bakkern, Schanal [14] HIV/AIDS is still a

significant challenge for health services. Therefore, there is a need to help develop appropriate prevention and disease management that address the biological and psychological aspects of the affected individuals using different means, such as charts, images, etc.

Infographics are a great way to put together multiple pieces of information with a graphical elements like charts, images, and diagrams with minimal content but optimum effectiveness. Infographics condense extensive amounts of data into small and easy-to-digest capsules of visual information. They focus on demonstrating information rather than telling it [15]. Infographics are more comprehensive and look attention-grabbing. It also makes it easier for the audience to memorise the information. According to the South African Strategic Plan, 2020/21 indicated that the most pertinent topic to gauge the Health Ministry's (HM) progress in decentralizing care for HIV/AIDS patients to primary attention is the requirement for training professionals to use infographics for HIV/AIDS prevention, diagnosis, and treatment. Since there isn't much text in an effective infographic, it can integrate HIV/AIDS and TB management into Ubuntu principles that are easy to interpret and understand. Its main goal is to quickly capture the attention of the viewer with interesting or eye-catching Figures [16]. With the use of these assets, which are generally displayed as static illustrations, the students were able to integrate simple messages about HIV/AIDS and TB. It is, however, important to pair infographics with other learning strategies such as case-based learning, role-playing, and reflective practice, nursing educators can create a robust framework that enhances students' ability to integrate Ubuntu with clinical competencies. This combination will ensure that the visual tools are not only empowering but also deeply meaningful in shaping compassionate healthcare professionals.

Therefore, higher learning institutions need to improve their training for health professionals for adequate HIV/AIDS management with the inclusion of Ubuntu and infographics. A study conducted by Lefa (2019) indicated that Ubuntu lies at the heart of the African way of life and impacts every aspect of people's well-being. Therefore, the concept of Ubuntu in South African HIV/AIDS and TB education must be emphasized. Connecting the infographics' captions, the students communicated the elements of kindness, respect, caring, compassion, and confidentiality, which are key in Ubuntu [11]. When it comes to HIV/AIDS and TB, this perspective emphasizes the nurse's function as a vital member of the health team that should display and act on the Ubuntu principles. Additionally, it plays a significant role in the integral and collaborative care that all medical professionals provide [17]. This emphasis the control and integral care of HIV/AIDS and TB management integrating Ubuntu principles.

However, the philosophy of Ubuntu, when visualized, should not be abstracted to the point where its rich, lived experience within African communities is diluted. Nursing students must be able to relate the visual representations of Ubuntu directly to their professional practice in managing HIV/AIDS and TB patients. There is a need for continuous evaluation of the educational materials' effectiveness and cultural relevance should guide the iterative design of such infographics.

Conclusion

There is a need to use innovation in teaching, learning, and research to stimulate creativity and facilitate effective communication, and critical thinking, and produce skilled design graduates through the use of infographics especially when sharing sensitive information such as HIV/AIDS/TB and application of Ubuntu principles This can be implemented through creative art forms. Students need to learn about the value of creativity as such in this workshop, drawings, illustrations, visual communication, and narrations played an important role in imparting knowledge about the integration.

Illustrations converted written words into visuals to be more readily understood by the other students. Illustrations capture people's attention and educate them by informing and developing their imagination prepares students to become empathetic, thoughtful individuals Information graphics visually present ideas and communicate facts and figures quickly or convey a message or a story.

The use of infographics enhances problem-solving by conveying messages through "pictures". Students can recognise, recall and comprehend images better than text. Therefore, the place of Ubuntu in health care, particularly when caring for HIV/AIDS and TB should be emphasized as equally valid to those outcomes traditionally taught within Higher Education curricula

Recommendations

Students should receive lessons, training, or upskilling in the use of infographics and illustrations to maximise the following benefits: - Using infographics benefits students because humans are visual beings, and our brains process images faster than text. By using illustrations students will engage better as such the institutions of higher education and learning can adopt this method when engaging with students. Nursing students in turn are encouraged to use the method when interacting with their patients for a better understanding of the message they are conveying, this will also assist people's minds in grasping large and small concepts.

Study limitations

The present study employed a qualitative, participatory design approach. This suggests that the findings of the study may not be generalized. It is therefore recommended that quantitative studies be conducted in similar settings in the future to help with the extrapolation of the findings. Caution is therefore necessary when interpreting the results for other settings. While the integration of infographics in nursing education, particularly on Ubuntu and communicable diseases like HIV/AIDS and TB, offer substantial benefits in terms of engagement and retention, it is vital that educators remain aware of its limitations. The simplification of complex information through visuals must be carefully balanced with depth, ensuring that students not only receive quick insights but also gain comprehensive understanding of the topics.

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s12912-025-02968-3.

Supplementary Material 1

Supplementary Material 2

Supplementary Material 3

Supplementary Material 4

Supplementary Material 5

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Author contributions

Conceptualization: M.N.K.; Methodology: M.N.K., T.I.R., M.M., and M.M.R.; Formal analysis: M.N.K. and M.M.R.; Investigation: M.N.K. and T.I.R.; Writing Original Draft: M.N.K. and T.I.R.; Writing, Review & Editing: M.N.K., T.I.R., M.M.R., and T.S.; Visualization: M.N.K., M.M.R., and T.I.R.; Funding Acquisition: T.I.R. All authors have read and agreed to the published version of the manuscript.

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Data availability

The data generated during this study and the supporting findings of this research are available on request.

Declarations

Ethics approval and consent to participate

This was a non-experimental study and as such, no human experiment was performed and/or the use of human tissue samples. However, humans participated in the study as such, the study was conducted following the ethical standards of the institutional and/or research committees and with the Declaration of Helsinki of 1975, as revised in 2013. Ethics approval was obtained from the University of Pretoria, Faculty of Health Sciences Research Ethics Committee (project no 465/2020). Permission was also obtained from the University of Limpopo and the Nursing Department. Written informed consent to participate in the study was obtained from all participants before data collection and they were told about the nature of voluntary participation and that they could withdraw from the study without prejudices.

Consent for publication

Consent to publish infographics was obtained from the participants.

Conflicts of interest

The authors declare that they have no conflict of interest regarding the publication of this paper.

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