Research

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Rural students' motivation to study a health science degree

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Background. South Africa (SA) faces a critical shortage of healthcare workers, particularly in rural areas, while available spaces to study health science qualifications are limited, and therefore, understanding the motivation of health science students is important to ensure the health needs of the country are met. This study aims to understand the motivations of the rural-origin Umthombo Youth Development Foundation (UYDF)-supported students in pursuing a health science qualification, and the factors that influenced their decision.
Methods. The study employed a cross-sectional design, surveying 181 current UYDF students (86% response rate) across 13 health science disciplines. A self-developed questionnaire was used that included four structured questions, allowing participants to select multiple responses.
Results. Of the 181 respondents, 91% reported being motivated by altruistic reasons, such as a desire to help others and improve healthcare in their communities, while 81% reported a desire to improve their family circumstances. Financial remuneration (19%) and the high status of the profession (15%) were lesser considerations. The greatest influence on their decision was the need to improve their family circumstances (67%), followed by addressing staff shortages in their community (60%). Personal experiences with the healthcare system influenced 53% of the respondents to choose their career, while only 39% reported parental influence on their career choice. Most respondents (80%) had researched their chosen profession before applying, with 45% having spoken to professionals and 27% job-shadowed in their field. Almost all (98%) medical students were studying their first choice, while 36% of respondents studying other disciplines were studying their first choice. The majority (60%) of respondents decided to study a health science qualification while in secondary school.
Discussion. The findings suggest that rural-origin respondents in this study are motivated by both altruistic motivations and a desire to improve their socioeconomic and community conditions, which may contribute to a higher likelihood of long-term retention in rural healthcare settings.
Conclusion. The motivations of rural students to pursue health science careers stem primarily from a deep desire to improve both their community and personal circumstances. For many, their motivation is reinforced by a personal experience of inadequate health service delivery. These insights should be considered by universities in their selection of students, and by the Department of Health, so that the critical healthcare needs in underserved regions of SA can be addressed.
Keywords: health sciences, health science students, motivation to study health sciences, rural health science students, rural health

Afr J Health Professions Educ 2025;17(4):e2758. https://doi.org/10.7196/AJHPE.2025.v17i4.2758

There is a significant shortage of health workers in South Africa (SA), particularly in the public sector and rural areas, which needs to be addressed.[1] In addition, the number of university spaces available for students wanting to study health science degrees in SA is limited.[2] Health science studies are generally considered challenging, with adequate school preparation and strong motivation being considered essential for success.[2] Given the substantial investment of time and the cost of training, it is ideal for qualified healthcare professionals to remain in their profession long term, and to work where the needs are greatest.[2,3] The selection of the right candidates, those with academic ability, as well as characteristics that will result in their having a long-lasting impact in their field, is therefore critical.[2] In this regard, the eight medical schools in SA use a combination of academic results and other non-academic factors in an attempt to assess the suitability of applicants, as academic merit alone does not guarantee graduation, or a long-term commitment to remain in the profession.[2] Understanding the motivation behind students' decisions to pursue a health science qualification is important. Diab *et al.*[4] reported that rural students' motivation to study a health science qualification was driven by personal experience of the health system – often its limitations – and that many final-year rural students, in both medical and other health science disciplines, expressed a desire to return to work in their rural communities to improve services. Their 2018 study consisted of only 15 rural-origin health science students, and therefore the topic requires further investigation to substantiate the results. MacGregor and Ross[5] reported that 90% of Umthombo Youth Development Foundation (UYDF) graduates honoured their work-back obligations by working in rural areas, as per the funding agreement, with 54% working for 3 or more years.

Maharaj[6] investigated the factors affecting the career choice of four disciplines of health science students at one SA university, and reported that parents were a major influence (68.1%), followed by other significant people (42.0%). In addition, many students reported obtaining information from professionals who visited their schools (56.5%), with family members and guidance counsellors also playing an important role (52.2% and 50.7% respectively). Additionally, prior experience with a professional in their chosen career strongly influenced their decisions (46.4%). He also found that the desire to work with people was the most important personal factor in career choice, while the altruistic factor of helping others was the second most important factor. Prestige, variety, lifestyle and enjoyment of working with their hands were the least important factors.

Mabuza and Ntuli[7] explored the motivating factors of rural and urban students for choosing health science careers, and found that parents

(30.9%), and personal exposure to health professionals (29.6%) were the most important motivators. Urban-origin students were twice as likely as rural-origin students to be influenced by their parents (20.6% v. 10.3%) and personal exposure was a stronger motivator for urban students (19.6% v. 10.0%). In a study investigating 387 SA students' choice to study optometry at four universities, Mashige and Oduntan[8] reported that 93% of the students cited the altruistic factor of helping other people as the main reason for choosing the field, followed by job opportunities (92%), school subjects passed and points obtained for university entrance (91%), earning potential (89%), flexible working hours (84%), the ability to use initiative (71%), and interacting with others (70%). Personal experience with an optometrist influenced 71% of students, while the influence of parents or relatives was reported by only 56% of students.

A study of 150 first-year medical students in India reported that 82% chose medicine out of personal interest, while only 27% reported being influenced by their parents.[9] The main motivational factor for studying medicine was to earn respect in society (84%), followed by making their family members happy and proud (77%), while financial considerations were the main motivation for 35% of the students. Skatova and Ferguson[10] reported that UK medical students in their study chose their degrees because of career prospects and the desire to help others, with male students more likely to be motivated by career opportunities, and female students more inclined towards helping others. A Spanish study[11] of first-year Bachelor in Nursing students found that personal interests – such as fulfilment, vocation, and the desire to help others – were the main reasons for choosing the degree, which remained the same through to the fourth year. The perception of nursing as a profession involving care, contributing to society, and technical and practical skills required were the second most cited reasons. The influence of relatives and previous contact with the hospital environment did not significantly impact their reasons for choosing to study nursing or completing their studies.

The UYDF, established in 1999, partners with 15 district hospitals in three districts of KwaZulu-Natal (KZN) Province, to address staff shortages by recruiting and supporting rural youth who have an interest and aptitude to study a health science degree.[12] The foundation focuses on rural youth as they are more likely to live and work in rural areas after graduation than their urban counterparts.[4,5,7,13-15] The UYDF provides financial, academic and social mentoring support throughout their university journey in return for a commitment to work at a rural hospital after graduation.[12] The UYDF supports around 200 health science students annually across 14 different health science disciplines. The selection criteria are that students: (*i*) must come from one of three districts (uMkhanyakude, Zululand or King Cetshwayo) in KZN, where the 15 rural district hospitals that the UYDF partners with are situated; (*ii*) be accepted into a health science programme at an SA public university; and (*iii*) must be willing to work at a rural hospital after graduation. As part of the selection process, all new students share their stories and reasons for choosing their field of study. As of March 2025, UYDF has produced 623 graduates across 18 different health science disciplines, with the majority working in rural areas for extended periods.[5,12,14,15]

This study aims to understand the motivations of rural-origin UYDF-supported students in pursuing a health science qualification, and the factors that influenced their decision, providing valuable insights for universities and the Department of Health (DoH) in recruiting and retaining rural health science students.

Methods

This was a cross-sectional study, which used a questionnaire developed from themes identified in students' stories and existing literature.[4,7-9,11] The students were provided with a brief background of the study and invited to participate. The questionnaire, created using Google Forms, was emailed to all 211 UYDF students supported in 2024. It was highlighted that their participation was voluntary and had nothing to do with the support they currently received from UYDF, or the support they will receive in future.

The questionnaire included four structured quantitative questions, allowing participants to select multiple responses regarding: (*i*) reasons for choosing a health science degree; (*ii*) who, or what influenced their decision; (*iii*) whether they had researched their discipline; and (*iv*) the age or school grade when they made their decision. The responses to the closed-ended questions were analysed using Microsoft Excel version 2501 (Microsoft, USA) and presented as frequencies in tables. In addition, a number of students shared their reasons for studying a health science qualification in the only open-ended question asking at what age, or school grade, they decided to study a health science qualification. These were unsolicited, and some have been included to enrich the qualitative data.

Ethical approval was obtained from the University of KwaZulu-Natal Biomedical Research Ethics Committee (ref. no. BREC/00002918/2021).

Results

Of the 211 students invited to participate, 181 responded, yielding an 86% response rate. All participants were black South Africans, recruited from three rural districts in KwaZulu-Natal, and one district in the Eastern Cape (Table 1). The participants were from 13 health science disciplines, with 117 medical students (65%), 23 pharmacy students (13%) and 12 optometry (7%) students. The remaining disciplines had between 1 and 6 students each. Students were from 13 academic institutions, with 6% being in their first year, 27% in their second year, 19% in their third year, 25% in

Table 1. Demographic data of students who participated in the survey

Variable	Answer	*n* (%)
Province of birth	KwaZulu-Natal	179 (99)
	Other provinces	2 (1)
District	King Cetshwayo	36 (20)
	uMkhanyakude	60 (33)
	Zululand	80 (44)
	Other	5 (3)
Gender	Female	83 (46)
	Male	98 (54)
Discipline	Audiology	5 (3)
	Clinical medical practice	1 (0.5)
	Dental therapy	1 (0.5)
	Dentistry	4 (2)
	Medicine	117 (65)
	Nursing	3 (2)
	Occupational therapy	6 (3)
	Optometry	12 (7)
	Pharmacy	23 (13)
	Physiotherapy	4 (2)
	Radiography	4 (2)
	Speech & language therapy	1 (0.5)

their fourth year, 13% in their fifth year, and 11% in their sixth year, and one student in their seventh year. The majority of students were born in KwaZulu-Natal, the UYDF catchment area (Table 1). Slightly more males (54%) than females (46%) participated in the study (Table 1).

Table 2 summarises the reasons that participants chose to study a health science qualification, with 91% citing altruistic reasons such as wanting to help others, and improving healthcare in their community (90%). A sizeable portion (81%) reported their desire to change their family circumstances through studying a health science qualification, while a low percentage (19%) cited good remuneration and the high status of the profession (15%) as reasons (Table 2). Only seven participants chose their degree as they did not know of other options. The results are similar for medical and pharmacy students, although the latter ranked 'High status of the profession' higher than medical students and other disciplines (Table 2).

Regarding question 2 (who or what influenced their decision to study a health science degree), 67% cited the need to improve their family circumstances, and 60% to address the shortages of healthcare professionals in their community, which was reflected similarly in the medical respondents and other disciplines (Table 3). For respondents studying pharmacy, addressing the shortage of healthcare professionals in the community, and personal experience with the healthcare system were rated evenly and higher than the need to improve family circumstances, while those studying disciplines other than medicine or pharmacy, personal experience of the health system was rated the highest (51%). For 53% of respondents, personal experience with the healthcare system, either positive or negative, influenced their decision, while parents (39%), adult role models (31%), and teachers (28%) had a relatively small influence. These results are very similar for all disciplines. Parents'/guardians' and teachers' influence on pharmacy respondents was very low (17%) in comparison.

Regarding question 3, 81% of the respondents had researched their chosen profession before applying, which was similarly high among all disciplines. Less than half (45%) spoke to a health professional to learn more about the profession, this being less (31%) for those studying a discipline other than medicine or pharmacy. Just short of 50% of respondents studying a discipline other than medicine or pharmacy job shadowed a professional, while job shadowing among pharmacy respondents was the lowest (17%). (Table 4). Overall, 78% reported they were studying their first choice, this being 98% for medical respondents, while only 36% of those studying disciplines other than medicine or pharmacy reported they were studying their first choice (Table 4).

With regard to question 4 (what age or school grade they decided to study a health science degree), 60% of respondents decided when they were in secondary school. This is similar for pharmacy and other respondents, while for medical respondents, 48% decided in primary school.

The following comments made by the respondents confirm the quantitative results.

> I was still in primary school level doing grade 7, I was 13 years old, everything around my life made me want to do medicine, from my grandma's health to my health, the financial situation at home, and the passion I had towards improving all of it at once. (MN, 6th-year medical student)

This shows this medical student's decision was made at a relatively young age, having been influenced by a number of factors, including personal and family experience of poor health, and a desire to improve their financial situation and health through studying medicine.

> When I was doing grade 3, my uncle from my extended family got a bursary to study medicine in Cuba. That is how I got motivated because I saw that as a black child, it is possible to become a doctor. I decided to pursue the dream of becoming a doctor. (AM, 4th-year medical student)

This shows the value of role models in the community. Knowing someone in a similar socioeconomic situation who was able to do what was thought to be impossible became a powerful motivating force. Many respondents in this study (62%) stated that they want to be an inspiration to other youth.

> Growing up in a rural area, I witnessed firsthand the challenges and limited access to healthcare that many communities face. This inspired me to pursue a health science qualification, driven by a deep desire to bring quality healthcare to underserved areas and make a tangible difference in the lives of those who need it most. My goal is to bridge the gap and ensure that everyone, regardless of their location, has access to the care they deserve. (SZ, 3rd-year optometry student)

This extract encapsulates the personal experience of the deficiency of the health system, and the motivation to improve the situation (altruism), as reported by many of the respondents.

> I wanted to improve the health care service since I lost two of my relatives due to poor health care services. So, I vowed that I wanted to be the change that would improve healthcare and ensure that everyone, rich or poor, gets equal, excellent healthcare, and reduce the number of cases where people die due to a lack or delay of getting help. (AS, 3rd-year pharmacy student)

This again highlights the personal experience of the health system that has been reported in the quantitative data, and the strong motivation to be a solution to the problem despite the enormity of the situation.

Discussion

This study aims to understand the motivations of rural-origin UYDF-supported students in pursuing a health science qualification and the factors that influenced their decision. The 181 respondents are a good representative sample of the students supported by the UYDF, with the majority coming from three districts in KwaZulu-Natal, and 65% studying medicine, with a fairly even gender balance.

Regarding their reasons for choosing a health science degree, the current study found that participants had altruistic reasons, namely, helping others and improving healthcare, this being in line with previous studies.[4,6,8,11]

Although only 60% of the participants chose 'addressing the shortage of healthcare professionals' as a reason, this is related to improving healthcare in their community and helping others, which were ranked highly. There is a similarity between the options 'improving healthcare in your community', which highlights what needs to happen, and was highly rated, and 'addressing hospital staff shortages', which relates to how it would happen.

Changing their family circumstances was also ranked highly (81%), while two-thirds (62%) sought to be an inspiration to other youth. In contrast, reasons related to personal gain, such as good remuneration (19%) and high status of the profession (15%), were ranked low, especially among the non-medical and pharmacy respondents, indicating they were less important in the decision to study a health science qualification. However, for some

Table 2. Responses to the reasons for choosing to study a health science qualification

What made you choose to study a health science qualification	All disciplines (*N*=181), *n* (%)	Medical (*N*=117), *n* (%)	Pharmacy (*N*=23), *n* %	Other disciplines (*N*=41), n (%)
Want to help others	164 (91)	107 (91)	18 (78)	33 (80)
Improve healthcare in your community	163 (90)	104 (89)	18 (78)	35 (85)
To change your family circumstances	146 (81)	94 (80)	16 (70)	32 (78)
To be an inspiration to other youth	112 (62)	68 (58)	13 (56)	25 (61)
To address hospital staff shortages	107 (60)	67 (57)	15 (65)	21 (51)
Good employment prospects	84 (46)	52 (44)	9 (39)	14 (34)
Good renumeration	35 (19)	26 (22)	5 (22)	4 (10)
High status of the profession	28 (15)	19 (16)	7 (30)	4 (10)
Did not know of any other options	7 (4)	4 (3)	1 (4)	1 (2)

Table 3. Influences on decision to study a health science degree

Decision influenced by	All disciplines (*N*=181), *n* (%)	Medical (*N*=117), *n* (%)	Pharmacy (*N*=23), *n* %	Other disciplines (*N*=41), *n* (%)
Need to improve family circumstances	121 (67)	85 (73)	11 (48)	18 (44)
The shortages of healthcare professionals in the community	108 (60)	70 (60)	13 (56)	16 (39)
Personal experience of the healthcare system (positive or negative)	96 (53)	56 (48)	13 (56)	21 (51)
Your parents/guardians	70 (39)	46 (39)	4 (17)	18 (44)
Your matric results	59 (32)	44 (38)	7 (30)	6 (15)
Adult role models	56 (31)	30 (26)	8 (35)	14 (34)
Your teachers	51 (28)	41 (35)	4 (17)	9 (22)
Friends	17 (9)	11 (9)	1 (4)	3 (7)
Not knowing about other options	9 (5)	3 (2)	1 (%)	4 (10)

Table 4. Researching the professions

Question	All disciplines (*N*=181), *n* (%)	Medical (*N*=117), *n* (%)	Pharmacy (*N*=23), *n* %	Other disciplines (*N*=41), *n* (%)
Did you research about the profession before applying? Yes	146 (81)	94 (80)	19 (79)	28 (80)
Did you speak to a health professional in your discipline to understand more? Yes	82 (45)	60 (51)	11 (46)	11 (31)
Did you shadow a professional before applying? Yes	49 (27)	28 (24)	4 (17)	16 (46)
Is the discipline you are studying your first choice? Yes	142 (78)	115 (98)	12 (52)	15 (36)
At what age/grade did you decide to study a health science?				
Primary school (5 - 12 y old)	70 (40)	54 (48)	8 (38)	10 (26)
Secondary (13 y & older)	107 (60)	58 (52)	13 (62)	29 (74)

unknown reason and contrary to the other disciplines, 30% of pharmacy respondents chose the profession because of its high status. These results are in contrast to the findings of Mashige and Oduntan[8] where 88.6% of optometry students in their study chose their field based on its earning potential, and over 60% were motivated by the status of the profession.

Regarding who or what influenced their decision to study a health science degree, the top two were to improve their family's circumstances (67%), especially among those studying medicine, and to address the shortages of healthcare professionals in their community (60%). Although they emerged as strong influences, they were less prominent reasons compared with the more altruistic reasons. A possible reason for this could be the confounding between the questions, e.g. 81% stated they chose to study a health science qualification to change their family circumstances (Table 2), while only 67% stated that was what influenced them in their decision (Table 3).

The current study found that parental or guardian influence on their choice to study a health science degree was low (39%), especially among pharmacy respondents (17%). Jothula *et al.*[9] reported a similar low level of parental influence (27%) among students choosing to study medicine, although the second most common motivational factor for studying medicine in their study was to make family members happy and proud (77%), suggesting that the parent's influence may have been greater than reported. In addition, Mashige and Oduntan[8] also found parental influence to be low among students choosing to study optometry. The findings in this study are in contrast with two SA studies that reported a strong

parental influence on their children's decision to pursue a health science career.[6,7] A possible explanation for this difference is that the parents of the respondents in this study, being from rural areas, may have limited education and could not therefore provide career guidance to their children as highlighted by the fact that two of the districts from which respondents in this study come from are included in the 10 districts with the lowest educational attainment among individuals aged 25 to 64 in SA in 2016.[16] The influence of adult role models and teachers was surprisingly lower than that of parents, especially in light of the above explanation regarding adult education levels. In another study using the same dataset, which investigated how UYDF students achieved the grade 12 results to be accepted to study a health science qualification, 78% of respondents attributed their grade 12 success to having good teachers.[17]

Approximately half of the respondents in this study chose a health science discipline based on their personal experiences with the health system (Table 3), which was higher than the 30% reported by Mabuza and Ntuli,[7] and much higher than the 10% reported for rural-origin students in their study. Diab *et al.*[4] reported similar results to the current study in terms of rural students being influenced by personal experiences of the health system and having a strong desire to improve healthcare services in their communities.

Of all respondents, 81% reported having researched their chosen profession before applying, with a high percentage, especially among medical students (98%), being accepted to study their first choice. This shows initiative, determination and a seriousness to pursue a career that could change their lives, as well as those of others. Of concern is that only a third of students studying other disciplines, including optometry, reported studying their first choice, whereas Mashige and Oduntan[8] reported that 61% of optometry students in their study were studying their first choice. Further investigation is needed to understand the implications of students not studying their first choice in terms of motivation to complete the qualification and to work in the profession long term.

In summary, altruism emerged as the most common motivation for choosing a career in health by these rural students, with a strong desire to bring about change in their communities and their families. The seriousness of this intention is reflected in their stories, which indicate that many of them decided to study a health science career at a relatively young age – in primary or early secondary school – and have pursued that dream, showing persistence and a seriousness to be change agents in their communities. Diab *et al.*'s[4] comment on the naive aspiration of rural students, that they would return as a saviour to their communities to address the shortcomings in the health system they have experienced, is confirmed in this study. Diab *et al.*[4] suggest that this is a powerful symbolic motivator for them, with which we would concur, and further suggest that this commitment could lead to a longer-term commitment to work in rural areas as reported by MacGregor and Ross,[5,14,15] compared with other healthcare professionals who lack similar community ties or rural backgrounds. Moreover, their personal experience of the deficiencies of the health system as shared in the respondents' narratives, often involving family members, caused in many cases by staff shortages, may further intensify their passion to return to their communities and to make a meaningful difference. Further, this altruistic motivation may enhance their resilience in the face of challenges such as resource limitations, isolation, and high workload, which are common in rural settings.[15] Their strong sense of purpose could also lead to longer-term career satisfaction, potentially influencing their decision to stay in rural areas for extended periods, further alleviating staff shortages and high staff turnover.[15] In addition, altruistic rural students who return to work in their communities, seeking to inspire younger generations through their example, are powerful motivators, as illustrated in this response given above. *'When I was doing grade 3, my uncle from my extended family got a bursary to study medicine in Cuba. That is how I got motivated because I saw that as a black child, it is possible to become a doctor. I decided to pursue the dream of becoming a doctor.'*

Finally, health science faculties in SA may use these insights, in addition to academic merit, in their selection of undergraduate health science students.

Limitations

The study's focus on rural students from KwaZulu-Natal means the findings may not be generalisable to all health science students in SA. Furthermore, the structured nature of the survey, including the lack of qualitative engagement, may have restricted the range of responses, potentially missing other important factors influencing career choice.

Conclusion

The motivations of rural students to pursue health science careers stem primarily from a deep desire and conviction to help others by improving healthcare in their community, as well as their family circumstances. For many, their motivation is reinforced by a personal experience of inadequate health service delivery. These insights should be considered by universities in their selection of students, and the Department of Health, so that the critical healthcare needs in underserved regions of SA can be addressed.

Declaration. None. No artificial intelligence (AI)-assisted technologies have been used in the production of this work.

Acknowledgements. None.

Author contributions. Conception, data collection, analysis, write-up, submission: RGM. Article development and revision: AJR.

Funding. None.

Conflict of interest. None.

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Received 23 October 2024. Accepted 30 May 2025.