The distribution of pharmacists trained at the University of the North, South Africa

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Executive summary

As part of the EQUINET and Health Systems Trust Human Resources for Health (HRH) programme of work, this paper studies the distribution of pharmacists trained at the University of the North (UNIN) from 1966 and 2003, with a view to understanding the key factors that influenced their career choices. The study sought to inform EQUINET work on distribution and retention of human resources for health.

Between 1966 and 2003 UNIN produced 582 pharmacy graduates, most of whom live in South Africa. Of these graduates 449 were registered by the SAPC in 2004. Contact information for graduates was obtained from a variety of sources including university records, the South African Pharmacy Council (SAPC) register and some of the graduates themselves.. A semi-structured questionnaire was sent to 233 of the graduates, and several focus group discussions and (group) in-depth interviews were held with a number of graduates. The response rate for the questionnaire survey was 55.4%; 121 responses were analysed. Of the 121 respondents (67 male, 54 female), 68 were single and 53 married. Most respondents (n=73, 60.3%) work in the Limpopo Province, and most live and work within 200 km of their original homes. Most respondents (n = 85; 70.2%) are of rural origin; 46.3% work in rural areas, and 62.8% work in the public sector. Respondents who came from rural areas were more likely to work in a rural area and in the public sector.

Job satisfaction ratings were high for 58% of respondents, and this was apparently not associated with income levels. Respondents who indicated that their expectations had been met completely or to a large extent were more satisfied with their jobs than those who indicated that their expectations were met only partly or not at all. Only 53.4% would opt to do pharmacy again, while a mere 29% would encourage their children to do pharmacy. The most commonly cited motivations for taking up the present job were the opportunity for professional development and the desire to serve the community, with pay as the sole reason for less than 4% of respondents. Pay, however, would be the major consideration in changing jobs for 25%. The most fulfilling aspects of the practice of pharmacy were interactions with patients and other health care professionals. Frustrating aspects included a lack of recognition for pharmacy as a profession, poor pay and a lack of support from the Pharmacy Council and other pharmacists.

The focus group discussions and in-depth interviews re-affirmed the main findings of the questionnaire survey. Participants made suggestions for redress in areas of discontent, including how to improve conditions of service, interactions between Pharmacy Council and pharmacists, and the Pharmacy Programme at the University of Limpopo[1], and a clearer definition of the role of the pharmacist in the health system. In all discussions the overwhelming view was that, in addition to an improvement in conditions of service, there should also be a general improvement in infrastructure, such as roads and schools, so as to attract more pharmacists to work in rural areas and the public sector.

The key findings of this paper are:

- Most of the pharmacists from the University of the North are within South Africa.
- Of 121 respondents, 46.2% work in rural areas, and 62.8% in the public sector.

[1] On 1 January 2005 the University of the North (UNIN) merged with the Medical University of Southern Africa to form the University of Limpopo.

- Pharmacists of rural origin are more likely to work in rural areas and in the public sector than their counterparts coming from urban areas.
- When respondents were asked why they took up their present jobs, opportunities for further professional development and the desire to serve the community were more commonly cited motivating factors than pay was. However, many said they would change jobs for better pay.
- A multi-sectoral approach with financial and non-financial incentives will be needed to address the scarcity of pharmacists in the public sector and rural areas.

We recommend the following:

- Government departments and schools of pharmacy should consider giving preferential treatment to applicants from rural areas.
- Both financial and non-financial incentives should be used to attract and retain pharmacists to rural areas and the public sector.
- A multi-sectoral strategy should be used to address the infrastructural needs of the rural areas.
- In terms of management, we recommend a consultative and inclusive approach to ensure greater involvement of pharmacists in their own affairs.
- In order to prepare pharmacy students better for the working environment, we suggest that the trainers, government and South African Pharmacy Council work together to sensitise pharmacy students to the health system through adequate clinical exposure and experiential learning.

1. Introduction

The greatest inequities in the distribution of health professionals in South Africa are between the private and public sectors. Whereas the private sector serves less than 20% of the population, it consumes 58% of total health expenditure and employs the majority of most categories of health care professionals (Padarath et al, 2003; Padarath et al, 2004; Goudge et al, 2002). On the other hand, the public sector suffers a vacancy rate of 31.1% overall, ranging from 67.4% in Mpumalanga Province to 13.4% in Limpopo Province (Padarath et al, 2004).

The maldistribution of health professionals between the two sectors is marked for all professions, except for nurses. Of the 10,629 pharmacists registered with the Pharmacy Council in 2003 only 1,222 (11.5%) were employed in the public sector (Padarath et al, 2004). Nationally, the public sector distribution of pharmacists is 3.1 per 100 000 population, with wide inter-provincial variation between 2.2 per 100 000 in Limpopo Province and 6.4 per 100 000 in the Western Cape (Health Systems Trust, 2005).

The University of the North (UNIN) Pharmacy Programme was started in the 1960s primarily to train African (black) pharmacists. From the outset, UNIN targeted black students from disadvantaged backgrounds, notwithstanding barriers such as the poor levels of preparedness of these students for professional science courses at the time. The first pharmacy student completed his degree in 1966 and by the early 1970s, about four students were graduating annually. The programme has expanded and 30-50 pharmacists have qualified annually for the last 15 years or so. Despite this steady output of pharmacists (from disadvantaged areas), the shortage of pharmacists, especially in the poor, rural areas, remains unacceptably high.

UNIN is often credited with having trained most of the black pharmacists in South Africa but there has been no study or audit undertaken to establish the fate and career destinations of these graduates. Information that does exist is anecdotal. Indeed, this was a criticism made by the South African Pharmacy Council about UNIN's programme at their last inspection visit (South African Pharmacy Council, 2002). The UNIN Pharmacy Programme has few UNIN-trained graduates on their staff, which makes one wonder what happened to the university's other graduates. This paper is the first report on what has happened to graduates of the old UNIN Pharmacy Programme.

This paper investigates the factors influencing the career choices made by UNIN graduates (with emphasis on the factors that make them stay in the public sector), the progress they have made, and their satisfaction (or lack thereof) with their present work. It also provided an opportunity to get feedback from the graduates on areas for improvement.

2. Methodology

The aim of this study was to establish the distribution of pharmacists trained at the University of the North, and the factors responsible for their choices in terms of sector and location of place of work. The objectives of the study were:

- to trace the whereabouts of UNIN pharmacy graduates in terms of their place and sector of work;
- to investigate the factors that influenced the distribution/location of UNIN pharmacy graduates to their present positions;
- to assess how satisfied UNIN pharmacy graduates are with their present positions (in terms of location, sector and income levels);
- to assess the relative contribution of various factors to the choices made by UNIN pharmacy graduates;
- to solicit suggestions for improvement in areas, such as the recruitment of students for pharmacy training, the allocation of pharmacy graduates for internship, community service and after-community service posting, and postgraduate training; and
- to initiate and encourage the involvement of UNIN pharmacy graduates in the Pharmacy Programme activities.

2.1 Study design

This study is descriptive, using quantitative and qualitative methods with a participatory research approach. Multiple sources of information were used, including the university (for a list of graduates), the South African Pharmacy Council (for a list of registered pharmacists), the graduates themselves (as key informants on their classmates/ contemporaries), a questionnaire survey, focus group discussions and in-depth group interviews.

2.1.1 Sampling

The study population consisted only of pharmacists who completed the pharmacy degree at UNIN from 1966 to 2003. We attempted to include all the UNIN pharmacy graduates, but were limited by lack of contacts for some of them. By end of 2003 UNIN had graduated 582 pharmacists, of whom 449 were registered by the South African Pharmacy Council (SAPC), and at least 30 were dead.

A variety of approaches, including telephone calls, personal face-to-face interviews and e-mail inquiries were used to trace the whereabouts of UNIN pharmacy graduates. The information obtained was crosschecked against a list of UNIN pharmacy graduates, based on university records, as well as the register from the South African Pharmacy Council. Using these methods, 381 UNIN-trained pharmacists were tracked down, most of whom were practicing in South Africa.

2.1.2 Tools used

A semi-structured, self-administered questionnaire was sent out to 233 of the pharmacy graduates by fax (n=15), e-mail (n=23), 89 were delivered personally to work places, and 106 were mailed by post. In cases where there was no response after three weeks, the questionnaires were followed up by telephonic reminders. The option to have the questionnaire completed over the telephone was abandoned because too many potential respondents felt uncomfortable about giving information over the telephone.

hree focus group discussions were held: two in Limpopo Province and one in Gauteng. The Three focus groups consisted of seven, nine and six participants respectively. In addition, three in-depth interviews/discussions were held with two participants in KwaZulu-Natal (Durban), two in the Limpopo Province (at the university), and a group of four in the Eastern Cape (in Port Elizabeth). The in-depth interviews followed the approach used in the focus group interviews, except in this case the number of participants was smaller than our pre-set number for a focus group. Information obtained from the in-depth interview was treated in the same way as that from the full focus group discussion.

2.1.3 Data analysis

A database of all UNIN pharmacists was compiled using MS Excel. MS Excel was also used to calculate various frequencies, proportions or percentages. Responses for open-ended questions were grouped into broad categories before analysis took place. Appropriate statistical tests (Chi-square test, ANOVA, or Student t-test) were done using the Statistical Package for the Social Sciences (SPSS) or Primer statistical programmes.

Focus group discussions were transcribed and the transcripts were compared to the investigators' notes for veracity. The data was analysed in terms of the broad areas/themes, and keywords were identified for purposes of data analysis. Common themes from the different discussions were grouped together for compilation purposes.

3. Findings

The findings present the results of the interview questionnaire and focus group discussions within key areas

3.1 Respondent characteristics

Of the 582 UNIN pharmacy graduates, 449 are registered with the South African Pharmacy Council and at least 30 have died. The questionnaire was sent out to 233 graduates, based on best available contact information at the time. When the data was compiled, 129 responses had been received so far, a response rate of 55.4%. Of these 129 responses, 121 were included in the analysis for this report.

The 121 respondents consisted of 67 males and 54 females: 68 were single and 53 were married. Most of the respondents (n=73, 60.3%) work in the Limpopo Province, and the majority (65.5%) live and work less than 200 km from their original homes (mean distance was 189.2 km and range was 2 to 1000 km).

Eighty-five (70.2%) of the respondents were of rural origin; 36 (29.8%) were of urban origin. Fifty-six (56) of the 121 (46.3%) worked in rural areas, while 65 (53.7%) worked in urban areas. Respondents of rural origin were more likely to work in rural areas than their colleagues from urban areas; of the 56 who work in rural areas, only 4 were originally from urban areas (χ^2 = 23.522, 1 degree of freedom, $P < 0.001$). Of the 119 respondents who provided information on their accommodation, 41 (34.5%) were living in their own houses, 35 (29.4%) were in employer-rented houses, 18 (15.1%) were in privately rented houses, 10 (8.4%) were in their parents' houses, and 15 (12.6%) were in official residences. Gender had no apparent influence on the type of accommodation chosen.

Table 1 shows the level of education for the parents of the 121 respondents. There were no significant differences in the level of education between the mothers and fathers, and none between the educational level(s) of the parents of male and female respondents.

Table 1: Level of education of the parents of respondents

Level of education	Mothers	Fathers
No formal education	22	23
Primary school	20	15
High School, no Matriculation	34	26
Matriculation, no tertiary	14	12
Post-matriculation tertiary	30	37

Matriculation equals 5 years of secondary school

Responses were received from pharmacists at different levels within the pharmacy profession (*Table 2*), with most being pharmacist interns (22.3%), pharmacy managers or owners (20.7%), pharmacists (14%), community service pharmacists (10.7%), senior pharmacists (8.3%) and principal pharmacists (8.3%). All respondents reported that they had never been unemployed since they obtained their BPharm degrees, except one respondent, who became unemployed on medical grounds.

Table 2: Professional rank of respondents

Rank/Position	N	%
Pharmacist intern	27	22.3
Pharmacy manager and/or owner	25	20.7
Pharmacist	17	14.0
Community service pharmacist	13	10.7
Senior pharmacist	10	8.3
Principal pharmacist	10	8.3
Administrative/management position	6	5.0
Chief pharmacist	5	4.1
Lecturer	4	3.3
Research pharmacist	2	1.7
Retired	1	0.8
Unemployed	1	0.8

Most respondents (n=83, 68.5%) have not (yet) undertaken any further studies since leaving pharmacy school. Of those who have studied further, 10 (8.3%) obtained post-graduate certificates in business management (3), primary health care (3) and computer literacy (4). Eleven (9.1%) have post-graduate diplomas, most of which are in management or business management; and 11 (9.1%) have obtained or were studying for a Masters degree (two for MBA, one for MPH, two for MPharm and six for MSc). Six respondents did not specify whether or not they had undertaken or were undertaking further studies.

3.2 Respondent work characteristics

Of the 121 respondents, 76 (62.8%) work in the public sector, 36 (29.8%) work in the private sector, and seven (5.8%) work in both private and public sector. The details are shown in *Table 3*. Of the 76 who work exclusively in the public sector, 59 (77.6%) are of rural origin, while 23 (63.9%) of the 36 who work exclusively in the private sector are of urban origin. The association between rural/urban origin and sector of work was statistically significant ($\chi 2 = 16.579$, 1 degree of freedom, $P < 0.001$).

Table 3: Workplaces for 121 respondents

Workplace	N	% of Respondents
Public hospital	66	54.6
Owner: Retail pharmacy	11	9.1
Employee: Retail pharmacy	8	6.6
Academic	7	5.8
Partner: Retail pharmacy	6	5.0
Two jobs: Private sector only	6	5.0
Two jobs: Private sector + public hospital	4	3.3
Private sector + academic institution	3	2.5
Government department	3	2.5
Industry	3	2.5
Private hospital	2	1.7
Retired	1	0.8
Unemployed	1	0.8

When asked how many times they have changed jobs (after internship), 54 (44.6%) of the respondents reported they have never changed jobs, 31 (25.6%) said they have changed jobs once, 17 (14%) have changed jobs twice, six (5%) have changed jobs three times. Predictably, those who changed jobs many times were those who had been in the field for longer periods. Those that have never changed their jobs were largely those at the beginning of their pharmacy career, such as those doing internship or community service. Though all the respondents who have changed jobs five times or more were males, there was no statistically significant link between gender and the number of times jobs were changed.

Most respondents (n=90, 74.4%) did or were doing their internship at government hospitals, fourteen (11.6%) at community/retail pharmacies, four (3.3%) in academic settings, four (3.3%) in the pharmaceutical industry. Respondents felt their training received at pharmacy school prepared them reasonably well for pharmacy placements in hospital, retail and industry and less so for academic placements (see *Table 4*).

Table 4: For which sector did the training received best prepare you?

Sector indicated in response	Total number indicating sector	% Respondents
ALL (hospital, retail, industry and academic)	18	15
Hospital	64	53
Retail	56	46
Industry	38	31
Academic	5	4
Not stated	7	6

Respondents felt they were prepared for their current positions by the education and training they received during the undergraduate course (50.4%), their work-related experience (9,.1%), their personal characteristics (7.4%) and a combination of undergraduate training and on-the job experience (9%). Twenty-eight (23.1%) did not attribute their preparedness for the present job to any particular factor.

3.3 Factors influencing job choices

Most respondents said that they had taken up their current jobs either because the jobs provided an opportunity for professional development or because they wanted to provide a service to the community (See Table 5). Pay was less commonly cited. There was no apparent association between age, gender, professional level (rank) or sector of work and the reported motivating factor for taking up the present job. For example, pharmacist interns were as likely to cite the need to serve the community as were retail pharmacy owners/managers.

In the focus group discussions, most of the participants reported that they expected to join a health system that had respect for the pharmacist. They expected this recognition from administrators, doctors, nurses, pharmacist assistants, other health professionals and support departments. They also thought that the working environment would enable them to make a difference by doing what they were trained to do as pharmacists, on the basis of a proper job description. Many believed they were entering an environment that would afford them more contact with patients than they found. All expected that pharmacists would be well-paid professionals. Some expected to join “a strong, proud and vibrant profession; instead we found that Pharmacy is not a united profession.” Many participants anticipated finding senior pharmacists with a love for the profession. They did however report that these expectations were not always met:

> *"When I arrived at the hospital, it was as if someone had wasted everybody's time sending them a pharmacist. I spent about four months trying to justify my existence at the hospital, and all along whatever I was suggesting was disregarded. They had managed without a pharmacist for years, so what was my role?"*

When asked why they changed their jobs or why they would change their jobs, the opportunity for professional development and pay was more commonly cited.

Table 5: Respondents' reasons for taking up their current jobs

Reason	Number of times reason given	% Responses
Opportunity for professional development	62	51
Service to the community	50	41
Pay	25	21
No other choice	15	12
Proximity to family	16	13
Urban location	8	7
Other reason	5	4

"By the end of internship, all the intern doctors at my hospital had cars, only one pharmacist intern had a car, but he always had a car even at campus. That is how my dream of owning a car as soon as I finished at Turf [UNIN] died!"

When respondents were asked whether or not they would opt to study pharmacy again, if they had the chance, of the 118 responses, 53.4% said they would study pharmacy again, 38.1% said they would not, and 8.5% were unsure (see *Table 6*). A quarter of respondents (28.8%) would recommend or encourage their children to study pharmacy, while nearly half (47.5%) definitely would not, and 23.7% did not know if they would encourage their children to do pharmacy (see *Table 6)*. Those who would opt to do pharmacy again were more likely to encourage their children to do pharmacy than those who would not do pharmacy again if they were to go back in time (χ^2 = 26.475, four degrees of freedom, P < 0.01).

Table 6: Respondents' willingness to study pharmacy or recommend it as a profession to their children

Would you still study pharmacy if you had the chance to do it again?	**Would you encourage your child to study pharmacy?**			
	Yes	No	Don't know	Total
Yes	30	21	12	63
No	4	30	11	45
Do not know	0	5	5	10

The reasons given for doing pharmacy again or not are summarised in *Tables 7* and *8*. The most common reasons were the employment/job prospects and the nature of the profession (loveable, enjoyable, interesting and respectable). Only one respondent cited good pay as a reason for doing pharmacy again. Among those who would not opt to do pharmacy again, poor pay/conditions of service and restrictive legislation and the government's attitude were most commonly cited. Other reasons included an interest in other professions, a lack of promotion prospects, bad experiences at work and a lack of recognition for pharmacy as a profession.

Table 7: Respondents' reasons for doing pharmacy again

Reasons	**N**	**% of respondents**
No reason stated	18	29
Employment/job opportunities	11	18
Enjoyable course/work	15	24
Interesting / challenging / dynamic profession	9	14
Personal choice, dream come true	3	5
Fulfilling / important / respected profession	6	10
Good pay	1	2

Table 8: Respondents' reasons for *not* doing pharmacy again

Reasons	N	% of respondents
No reason stated	9	19.1
Poor pay	5	23.4
Government's attitude to pharmacy	5	10.6
Restrictive legislation	5	10.6
Other interests (for example, medicine or engineering)	4	8.5
Dissatisfied, not rewarding	8	17.1
No promotion / recognition / opportunities	5	10.7

The most common reason given for encouraging children to do pharmacy was the nature of the pharmacy profession as a dynamic, promising, enjoyable career with plenty of employment opportunities (15 respondents), followed by the need to carry on the family legacy (2), absence of any better choice (1), good personal experience as a pharmacist (1), and the fact that there are few black pharmacists (1).

In contrast, respondents would *not* encourage their children to do pharmacy for reasons of poor pay, bad government regulations/legislation, the need for the child to make choices, the need for professional diversity in the family, competition from dispensing doctors, availability of better choices and the desire to avoid frustrations for the child. Those respondents who would do pharmacy again but would not encourage their children to do pharmacy gave reasons such as the need for children to make their own choices or follow their own interest (7 respondents), the wish to have a variety of professional skills in the family (4), uncertainty about the future (5), poor pay (2) and restrictive legislation (2).

Twenty-one of those who said they did not know if they would encourage their children to pharmacy said it was up to the child to decide (13 respondents), that the future of pharmacy was uncertain (3), that the new legislation had made pharmacy unviable as a profession (2), and that there was need for professional diversity in the family (1). There were also references to unpleasant experiences as a pharmacist (1), the hard examinations (1) and the need for positive change in society (1).

3.4 Income and job satisfaction

Most respondents earned between , R50,000 and R250,000 (US$7,600- US$38,000) (see *Table 9*) There were no gender-based differences in income levels.

Of the 113 respondents who gave a rating for job satisfaction, 19 (16.8%) indicated they were completely satisfied with their job (a score of 10 out of 10), while only 2 (1.8%) said they were completely dissatisfied with their jobs (a score of 1 out of 10). The overall score for job satisfaction was good, with more than half of the respondents indicating a score of 7 and above (n=65, 57.5%). There were no gender-based differences in reported job satisfaction scores. As indicated in *Table 9*, job satisfaction ratings were also not related to income, with some of the lowest-earning respondents reporting job satisfaction scores of 10 out of 10.

Table 9: Income vs. job satisfaction

Income Level	N	Job satisfaction mean (std)
< R50,000	4	8 .0 (1.41)
R50,000 – R150,000	69	6.7 (2.26)
R151,000 – R250,000	30	7.1 (1.90)
R251,000 – R400,000	8	7.9 (1.73)

SAR1 = US$6.5

There were 112 responses to the question on whether or not the expectations the pharmacists had upon completing the pharmacy degree have been met. Most felt their expecations had been only partly met (see *Table 10) T*he higher the job satisfaction rating(s), the more likely the respondents were to say that their expectations had been met.

There were no differences in expectations ratings between the male and female respondents, but married respondents had relatively higher satisfaction scores than the single ones – more than 50% of the married respondents said their expectations were completely or to a large extent met, compared to 75% of the singles who said their expectations were partly met or not met at all ($\chi^2 = 8.497$, 3 degrees of freedom, $P < 0.05$).

Table 10: Relationship between job satisfaction and expectations score

Have your expectations been met	N	Mean job satisfaction score (STD)
(a) Completely	7	9.0 (1.0)
(b) To a large extent	33	7.8 (1.98)
(c) Partly	54	6.7 (2.03)[1]
(d) Not at all	12	5.5(2.13)[2]

[1]$P < 0.05$ compared to (a); [2]$P < 0.05$ compared to (a) and (b).

There were significant differences between the rural- and urban-based respondents regarding how their expectations had been met, with 73.4% of the urban respondents saying their expectations were partly met or not met at all, compared to 51% of the rural-based respondents who felt that their expectations were fully met or met to a large extent ($\chi 2 = 10.387$, 3 degree of freedom, $P < 0.05$). However, there was no relationship between the place of work and the job satisfaction ratings, with the urban and rural mean scores at 6.97 and 6.96, respectively. Similarly, the age or rank of the respondents had no apparent bearing on the job satisfaction ratings or the answers about how expectations were met.

In the focus group discussions participants gave further insight into the factors affecting their job satisfaction. Many indicated that pharmacy was not a valued profession within the health system. In the opinion of some of the discussants, pharmacists are not seen as important members of the health team.

> *"It is doctors who are treated with respect. When we reported for internship, we were given an old ward with no glasses [sic] in the windows while there were three rooms empty. We soon learnt that they were keeping those rooms in case they got intern doctors! What were we supposed to feel?"*

Many instances were cited where pharmacists felt undermined or overlooked by administrators, other health professionals and patients. Another common issue was the mismatch between the teaching received at pharmacy school and the actual practice of pharmacy. Many were

frustrated by the lack of facilities and opportunity to counsel patients the way they were taught. Some participants observed that pharmacists are individualistic and do not look after themselves as a profession.

Another common theme through the discussions was the patient expectations of pharmacists, which tend to be unrealistic or impossible to live up to. A case in point relates to those patients who demand that items not prescribed be dispensed all the same. All participants, regardless of whether they were in the public or private sector, agreed that patients expect instant service from the pharmacists. As summed up by one of the participants, “Patients will wait for hours to see a doctor but are very impatient with waiting at the pharmacy; for them ten minutes at the pharmacy is too long.”

> *"Often patients come up to you and address you as 'doctor', at which time they talk to you respectfully. Once they realise you are a pharmacist and not a doctor, their attitude changes. It is as if they have wasted their time on only a pharmacist."*

Administratively, there is a lot the pharmacists are not happy with, especially in the public sector. It was the view of many that administrators think pharmacists are too demanding. Some pharmacists report for work only to find that there is no job description for the pharmacist at any level; what happens depends on the institution and the management in place.

> *"The administrators do not take pharmacists seriously. Any requests we make are treated as being too demanding. When nurses and doctors make their requests for staff or supplies, they are not seen as demanding."*

In one discussion, it emerged that even the senior pharmacists in some of the health facilities were part of the problem because they did not live up to what was expected of them. Cases were cited where pharmacists were surprised when they were consulted by doctors about patient treatment or prescription, thereby negating their role as medication experts. Other cases included the inability or failure of pharmacists to make useful contributions during continuing professional development (CPD) meetings. A further example cited of the complete disregard of the role of pharmacists was in one hospital where *"a dispensary was built without pharmacist input, only for the pharmacist to be expected to work in the poorly designed structure afterwards."*

Some participants didn't consider the actual practice of pharmacy as challenging as they had expected. There was too little room for patient-pharmacist interaction and too much time spent on mundane tasks the pharmacist was not trained for, such as packing medicines for the wards instead of participating with other health professionals in patient management.

A minority of participants in the focus group discussions reported good experiences at work – they spot a lot of erroneous prescriptions, and alert the prescribers (doctors) of the errors. In the experience of these pharmacists, such doctors are grateful for the corrections and always look forward to their input. In the words of one participant: “Knowledgeable pharmacists are valued by others who consult them. Doctors can be corrected without them being rude or defensive; what matters is the approach of the pharmacist. Obviously if you call the doctor and sound like you are blaming him, he will just hang up!”

3.4.1 Respondents' most frustrating and fulfilling/enjoyable experiences

The most common frustrating issues respondents reported were:

- problems dealing with other health workers, such as arrogant doctors, unfair competition from dispensing doctors, insubordinate pharmacist assistants, uncaring managers, other staff members who do not do their work, and the lack of unity among pharmacists;

- the government's attitude and regulations, for example the new pricing and medical aid regulations and the Health Act, poor pay with heavy work load and community service requirements; and
- interactions with the South African Pharmacy Council, for example its internship (requirements and examinations) and its lack of support for the pharmacy profession by the Pharmacy Council; and
- a lack of respect and recognition by other health care workers. (See *Table 11)*

Table 11: Most frustrating part of the job (N= 104)

Frustration level	N	% of responses
None (no frustration so far)	9	13.6
Doctor/ government attitudes	12	18.1
Heavy workload	6	9.1
No respect/recognition	6	9.1
Poor pay	6	9.1
Lack of drugs in public hospitals	5	7.6
Legislation & price cuts, medical aid regulations	8	12.1
Internship exam/ lecturers/ seniors lack of support	8	12.1
Patients' attitudes	5	7.5
Community service	1	1.5

In the focus group discussions, the overwhelming majority of the participants said that the most pressing problem was the lack of recognition of pharmacy as a valuable profession; both health care workers and patients undermine the role of the pharmacist. This problem is most severe in the public sector. As one of the participants said: "*Even patients do not respect pharmacists, except perhaps in retail. Why should a patient run back to the doctor to find out if the instructions I have given him are correct or accurate?"*

Poor pay was another problem cited in all discussions. Pharmacists felt they are poorly paid, and it did not help that the pay progression with years of experience was too slow. In the words of one participant, "*For doctors, the difference between the salary an intern receives and what a community service doctor gets is quite big. For us, it is not even noticeable.*" In the private sector, the feeling was that the earning power of the pharmacist has been reduced: "With the new pricing regulations, running a retail pharmacy is charity." Another observed: "As long as you have doctors dispensing next door, how can you thrive as a retail pharmacist?" One complained: *"I expected I would get in, work a few months and make down payments for a car and house. Instead, I was struggling to pay the rent and the pharmacy staff… The money I expected just wasn't there."*

Lack of incentives in addition to the poor pay, especially in the public sector, was another recurrent theme in the discussions. *"Apart from the miserable salary there is nothing else; even when we do overtime, we are not paid."* For one participant, being expected to prove that she worked overtime was too much, *"It is as if I am a casual labourer. No one asks the doctors to prove that they actually worked when they were on call, but the pharmacist has to."*

Non-involvement in decision-making was another issue for the pharmacists. Decisions about pharmacy and pharmaceutical care are often made without pharmacist input, *"If you try to advise anybody as a pharmacist, you are seen as a wiseacre, interfering in other people's*

business. And yet as a professional I can't let medication errors go uncorrected." The general feeling was that the administrative set-up in the public sector is biased towards doctors and nurses who are in management positions. Bunching pharmacy with other 'Allied Health Professions' has not helped because most often the manager of Allied Health Professions, will not be a pharmacist*. "What does a physiotherapist know about the needs of pharmacy?" asked one participant. In the words of another: "The previous situation where we were all under the medical superintendent was somewhat better – at least we were used to the doctors' arrogance. Now we have these others trying to prove a point…"*

Some senior pharmacists had a problem with the attitude of (some) interns who do not know what to do and are unwilling to learn. The view was that the teaching style encourages cram work with little experiential learning. Collectively, that might translate into unhappy experiences for the interns especially.

Interactions with patients (such as dispensing medication, counselling, instruction, receiving positive feedback and initiating therapy) was reported to be the most fulfilling part of the practice of pharmacy (See *Table 12*). Other positive experiences included teaching (pharmacy interns and pharmacist assistants), taking responsibility for resources (a hospital pharmacy or a large pharmaceutical company), getting feedback from other health professionals and being able to detect prescription errors. For a few, the only fulfilling part of the job was the salary at the end of the month.

Table 12: Respondents' most fulfilling/enjoyable part of the job (N= 111)

	N	% responses
Interactions with patients: advice, help, service and trust	52	46.8
Initiating therapy	4	3.6
Involvement with other professionals/ advising doctora	5	4.5
Made a change	3	2.7
Professional development	3	2.7
Challenges on the job	2	1.8
Detect prescription errors	2	1.8
Involvement in anti-retroviral (ARV) programme	2	1.8
Managing resources/big company	2	1.8
Being the first black pharmacist to own pharmacy in town	1	0.9
First salary	1	0.9

3.5 Personal ambitions and career plans

Respondents were asked what their future career ambitions were. *Table 13* shows the most popular job positions chosen when respondents were asked where they would like to be in five, ten and 20 years' time. *Table 12a* shows the most popular wishes were to be in business, to have completed Master's degrees, and to have attained a higher rank within the hospital/public sector. In ten years' time, as shown in *Table 13b*, most preferred to be in a position in retail pharmacy, followed by business, a management position in the private sector or government department and academic positions at a university. Not shown in the table are two respondents who wanted to have obtained non-pharmacy related degrees (n=2, 1.7%), two who wanted to be outside South Africa (n=2, 1.7%), one who wanted to be engaged in research, one who would be retired, one who wanted to become a private consultant and one who wasn't certain

what he or she would like to be in 10 years' time. In 20 years' time. (*Table 13c)* the most popular choices were owning a retail pharmacy, retirement , academia and management .

Table 13: Future career prospects of respondents in five, 10 and 20 years' time

(a)Where do you see yourself in 5 years' time? N=98	**N**	**% Responses**
Business	23	19.0
Master's degree	16	13.2
Public hospital	14	11.6
Management/administrative (govt)	8	6.6
Retail/community pharmacy	6	5.0
Manager (Private sector)	6	5.0
University lecturer	4	3.3
Researcher	4	3.3
Industry	4	3.3
PhD	4	3.3
(b)Where do you see yourself in 10 years' time? N=91		
Retail/community pharmacy	26	21.5
Business	9	7.4
Manager (Private sector)	8	6.6
Management/administrative (govt)	8	6.6
University lecturer	8	6.6
Public hospital	7	5.8
Industry	7	5.8
PhD	6	5.0
Political office (MEC, Legislature)	4	3.3
(c)Where do you see yourself in 20 years' time? N= 71		
Own pharmacy	15	12.4
Retired	14	11.6
Academics	9	7.4
Manager/Director/CEO	9	7.4
Other business	8	6.6
DOH HQs administration	3	2.5
Public hospital	3	2.5

3.5.1 Respondents' involvement in the University Pharmacy Programme

Most respondents (n=98, 81%) said they would like to be involved in the Pharmacy Programme at their alma mater, with only 17 (14%) saying they would not like to be involved. Six (5%) did not respond. The main suggestions were for involvement were mentoring students, alumni association activities, participation in student teaching and offering opportunities for experiential learning. Lack of time, distance, lack of interest and past unpleasant experience at school were some of the reasons cited by those who would rather not be involved in the Pharmacy Programme.

3.5.2 Respondents' views on the future of pharmacy

Comments on the pharmacy profession and the future of pharmacy in the South Africa Healthcare System (*Table 14*) indicated concerns relating to

- recognition of the pharmacy profession;
- the role of pharmacists;
- the relationship between pharmacy and other professions;
- the future prospects for pharmacy;
- the relationship between pharmacy, government and the Pharmacy Council; and
- the future of pharmacy at the University of Limpopo.

Table 13: Respondents' views on the future of pharmacy N=103

Categories of concern over the future of pharmacy	N	% of respondents
Recognition of the profession	18	14.9
Role and future of pharmacists	22	18.2
Relations with other professions	20	16.5
Future of pharmacy	16	13.2
Pharmacy and government and Pharmacy Council	13	10.7
Pharmacy at the University (of Limpopo)	15	12.4
No Comments	17	14.1

Most comments related to recognition of the pharmacy profession: (15 out of 18 responses) were calls for greater government recognition of the profession (through better pay and fewer regulations), and attitude problems from arrogant healthcare professionals (who should know that the pharmacist is the medication expert in the healthcare team), and the community at large (who should view the pharmacist as more than a shopkeeper at a drug shop). In the view of these respondents, once pharmacy is given due recognition, it will be accorded the respect it deserves and will flourish as the important profession it is. A recurrent suggestion was that other professions should stop doing the work of pharmacists by handling drugs they are not qualified to handle. One respondent's view was that pharmacy is a highly recognised profession and will always remain so, while another indicated that pharmacy and pharmacists will never get the recognition they deserve.

Comments on the role of pharmacists largely blamed pharmacists themselves for the plight of their profession. The spirit of most of the expressed views was that pharmacists have neglected their profession and left a few pharmacists, other health professionals and administrators to determine the destiny of the profession. There were suggestions for pharmacists to therefore "claim ownership of their profession", "have love and passions for the profession", "protect the profession", "show unity and support for each other", "promote a culture of learning and research, especially among blacks", and "adapt very fast to new regulations and find ways of coping with the changing situation". The need to interact with other health professionals, to be in direct contact with patients, and to keep pharmacy going at all costs were also mentioned.

The comments on the relationship between pharmacists and other health professionals were informed by the perception that there was no clarity on the roles and limits of various professions, especially where drugs were concerned. Some of the views were to the effect that doctors would kill the pharmacy profession if they were allowed to continue dispensing, and yet "if pharmacy is killed the rest of the health care system will come down". In view of pharmacy's pivotal role in healthcare, it was emphasised that pharmacy as a profession should be

recognised and respected by other professionals, or else the pharmacists will remain undermined by them. Similarly, some felt that pharmacy was being run down by other health professionals, “instead of being treated equally with other health professionals”. One respondent said that “pharmacists know more than doctors" and yet they are “under-rated, underpaid and mismanaged by non-pharmacists”. Clearly, many of the respondents would prefer that other healthcare professionals left the affairs of pharmacy to the pharmacists, who know what is best for their profession.

On the future of pharmacy, seven out of 16 respondents had a positive view of the profession. These views included comments such as:

- “Pharmacy is going to stay for more generations to come.";
- “Pharmacy has a great future in South Africa.”
- “Pharmacy is still looking good."

Some of the positive views included caveats, for instance:

- “There is a future if salaries are increased.”
- “It will be good if medical aid schemes stop manipulating pharmacists’ profits.”
- “If pharmacists unite, pharmacy won’t be sold away."

Nine of the 16 comments on the future of pharmacists were negative, and were informed by the uncertainties brought about by the new drug pricing legislation and the National Health Act on the practice of pharmacy. One comment that seemed to sum up these views was that “the future is uncertain, pharmacy closures are already happening”. Others included statements such as:

- “Pharmacy is slowly dying down.”
- “The future of retail pharmacy is not good.”
- “There is no future in pharmacy.”
- “The future is blurred because of the new regulations."

Three of these comments included suggestions for pharmacists to fight to stop the death of their profession.

Thirteen of the respondents restricted their comments to the interactions between the pharmacy profession and the regulatory bodies – the government and South African Pharmacy Council. The perception that government does not respect the pharmacy profession was clearly expressed, with support from measures affecting pharmacists that were put in place without pharmacists’ input, the poor pay, the apparent lack of support for the training and education of pharmacists, and “lack of support from government”. Suggestions were made for government to show respect for the pharmacists by treating them “as the sole custodians of medicines”, for government to “think twice before passing regulations governing pharmacy” and “not to frustrate the future of pharmacists”. The Pharmacy Council, on the other hand, was called upon to “start supporting pharmacists”, “work harder”, “protect pharmacists, instead of only collecting annual fees” and “make pharmacy more attractive as a profession”. For one respondent, the council needs to review its policy on the internship examination with a view to stopping it all together. There were many comments with suggestions for the Pharmacy Programme, mostly regarding those aspects of the training that need improvement. These comments included the need for the introduction of business courses, more coverage of clinical aspects of pharmacy, a review of the entire curriculum and training approach, and the need for student involvement in community projects. For some, theoretical material should be reduced in favour of more clinical or practical training. One respondent said that, with more focus, the programme will “continue producing

more competent pharmacists", while another asked for the programme to train "more pharmacists and let the public know about the profession".

In the focus group discussions participants suggested that the ideal situation for a pharmacist would start with better pay. . During one discussion, it was suggested that the general working conditions should be improved, the rural allowance should be increased to 50% of basic pay, and the scarce skills allowance should be revised upwards too. It was felt that they should be *" not be seen as only dispensers of medicines. We should do more ward rounds, and should be a more united profession where the professionals support each other*." Some of the participants felt that clinical pharmacists should be employed in all hospitals, and these in turn would help train interns, especially in the public hospitals. Tutors for interns should be remunerated for their service, and they will then be motivated to keep in touch with their protégés. Ideally, there should be networking among pharmacists, and pharmacists should be duty-bound to assist each other, especially in new appointments. This could be done through organisations like the Pharmaceutical Association of South Africa (PSSA). When pharmacists are in charge of pharmaceutical services at *all levels*, only then will real improvements occur.

Some participants believed that the ideal situation would be to own a pharmacy. They felt that one could more easily ensure that one is not exposed to racism or arrogance in this and that it would provide a comfortable working environment and make it easier to recognise the pharmacist's expertise.

3.6 Views on public sector and rural retention of pharmacists

The major problems in the public sector were identified in the focus group discussions as the work environment and conditions, with the treatment in the public sector seen as much worse than in the private sector. Most suggestions were about pay increases: "Increase the pay, be competitive with the private sector, at least match what one can get out there." For one participant, this could be achieved by "reducing the number of pharmacist assistants and channelling the money they earn to the pharmacists" – this should include better pay and accommodation. It was also suggested that the rural and scarce skill allowances be reviewed: "At present, the doctors who earn a higher basic salary receive the highest percentage of rural or scarce skills allowance. Moreover, they get overtime too. If government values doctors above any other profession, then let them hire doctors." For some, there is need to abolish disparity of pay between pharmacists and other health professions. Suggestions included subsidised transport or car allowances, especially in the rural areas, or official transport for use by the pharmacist for shopping and/or taking children to school.

Another issue that came out clearly in the discussions was that, in order to attract more pharmacists to the public sector, promotion procedures should be put in place for the automatic progression of staff from one rank to another, instead of the present situation, which relies on availability of posts. Pay progression too, for example from internship to community service, should be in place.

The other issue that discourages pharmacists from entering and staying in the public sector is administration and the way pharmacists relate to other health professionals. Participants felt that they do not get any respect from administrators, other health care professionals and patients: "Why work in a place where no one cares about you and your profession?" To improve the situation, it was suggested that more pharmacists should be in management positions in the public service so that they plan and advocate for the cause of pharmacists in the public sector.

The administration should be streamlined to include non-doctors and to avoid discriminating against pharmacists.

As one commented: “At least in the private sector you do not have doctors lording it over you.” The relatively better pay and treatment doctors are perceived to get was a recurrent bone of contention, leading to comments such as: “If government wants to employ only doctors, then let them.” Many felt offended by the new medicine-pricing regulations, which they saw them as a government ploy to force pharmacists out of private practice into government service.

One of the participants said that there is need for awareness campaigns to increase the visibility of pharmacy as a profession and community awareness on the role of pharmacists, especially in schools. These campaigns would eventually translate into better regard for pharmacists in the health care system.

3.6.1 Rural vs. urban areas

Many participants were sympathetic to the needs of the rural areas. They were mindful of the fact that public sector health facilities in rural areas have no pharmacists, and that there is need to market pharmacy as a profession. However, in addition to some of the conditions (listed in the section above) that would make public service more attractive, the infrastructure in the rural areas (roads, schools, recreational and shopping facilities) would have to be improved in order to attract pharmacists. An overwhelming number of respondents felt that working in rural areas was a thankless task because their efforts as pharmacists were not appreciated. Sacrifices had to be made and extra costs met for simple tasks such as supermarket shopping: “You end up paying more for everything by travelling to town for shopping,” and “with no good schools in the rural areas you have to travel hundreds of kilometres everyday to get the child to and from the school. And for what?”

Another disincentive for working in rural areas was the perception that there was more insecurity there than in urban areas. Since a pharmacist was “one of the few professionals in the rural area”, he or she would be “a target for all the thieves”. Furthermore, one respondent said: “you can’t keep a car in some of those places”. On the security concerns, the female participants seemed to be more convinced than their male colleagues that rural areas are unsafe. Unless that perception is removed, most pharmacists will not opt for a rural placement.

3.7 The Pharmacy Programme at the University

While acknowledging that the training they received was good or very good, the participants raised in the focus group discussions many areas in which the Pharmacy Programme should improve. This was largely to keep pace with the information explosion in the health sciences, and a move away from *giving* the students information to *helping them learn how to acquire* information.

> *"I am so proud to be from UNIN. The tough background at UNIN makes the UNIN graduate capable of any challenges in the field."*

One participant said that the programme should emphasise the evaluation of information to avoid pharmacy graduates being duped by unsubstantiated claims. It was observed that there is information overload in the programme, and this could be tackled by investigating the possibility of specialisation in various fields, such as a hospital pharmacy or industrial pharmacy, especially towards the end of the course. Others opposed this suggestion because they thought any specialisation during undergraduate training would only serve to limit the marketability of the

graduates. Moreover, the Pharmacy Council would most likely not allow such a move to be implemented. As a compromise, one group suggested that specialisation could be encouraged but limited only to a research project which should be undertaken by each final year student. In that way, the student would get to spend more time in a specific area of interest.

In the questionnaires many suggested improvements in the curriculum, which should include the involvement of business people and entrepreneurs to encourage and motivate the students, and the introduction of financial management in the undergraduate curriculum to prepare students for the business environment. The involvement of alumni of the programme and the introduction of postgraduate studies to combat the staff shortages were also suggested. Others encouraged more practical/experiential exposure for students, with an emphasis on community involvement. Another suggestion was to re-open the retail pharmacy previously run by the Pharmacy Programme. There were comments commending the Programme on a job well done, and encouragement to maintain the standards.

The mode of delivery of the programme was the subject of passionate discussion in all the groups. The consensus was that efforts should be made to use student-centred, student-directed learning strategies, in place of “the current lecturer-centred, rote-learning promoting” style used in most of the modules. In addition, it was strongly suggested that the teachers’ attitudes should change from “wanting students to fail to encouraging students to succeed”.

> *"Lecturing methods should change for the better. You guys should emphasise on the practical relevance of what is taught, and shift away from too much theoretical stuff, which is useless the moment you leave Turf."*

Some of the older graduates recounted unpleasant experiences at the hands of some of their lecturers who told them as a matter of course that “blacks could never be real pharmacists”, a sentiment that subsequently made the training very hard.

> *"Those of us who graduated earlier had to contend with many negative stereotypes from some of the teachers, such as 'Blacks are not meant to be pharmacists', 'Students cannot complete the degree in 4 years' and 'Pharmacy is a four-year degree, but it is the first six years that are difficult.' It was really difficult to like that place! I am happy to know things have changed."*

The younger graduates were unanimously of the view that the atmosphere in the programme at the moment was more student friendly, and that there were more cordial interactions between the students and teachers. Nevertheless, it was pointed out that some teachers insisted on students answering questions only in a certain way, otherwise they would be failed. In the words of one participant: “Students should not have to study the lecturer in order to pass.” While lauding the positive changes that have happened in the programme in recent years, the graduates were of the view that even more needed to be done.

The issue of clinical/practical exposure came up repeatedly. To the participants, this was even more important than “some of the chemical structures we had to cram or reactions we have never seen in use”. In their view, a properly structured clinical exposure programme would help bridge the gap between what is taught at pharmacy school and what happens in the field. Such exposure should include more exposure to the pharmaceutical industry, so that those who would like to go into industry know what they are in for. It was also suggested that the practical and clinical components of the course should be synchronised with the lecture topics so that they reinforce each other. Some called for the programme to investigate the possibility of ward-based teaching. In order for such changes to be introduced effectively, it was further suggested that the programme ensure that it admits manageable numbers of students. Above all, the

pharmacy previously run by the programme (O-Block UNIN Pharmacy, as it was) should be re-opened to provide hands-on training to the students.

Participants identified other issues that needed improvement/re-examination, including:

- a lack of clarity about why certain subjects/modules are prerequisites for other modules in the course;
- the course content for some of the subjects, which has been stagnant for many years and should be reviewed to cut out outdated stuff and include more relevant issues;
- a lack of innovation in many areas of the course; and
- the poor research base of the programme, which does not adequately prepare the graduates to engage in research after graduating.

Some suggested that the scope of pharmaceutics could be widened to include the compounding of products for commercial purposes. More members of staff should be involved in research and, in the process, they should get undergraduate students involved.

3.8 The role of the Pharmacy Council

In the interview responses, respondents suggested that the pharmacy laws (Pharmacy Act) be revisited to make the regulations favourable to both pharmacists and the public. Some respondents felt that dispensing licences should not be granted to any health care professionals (especially dispensing doctors), apart from pharmacists. Some felt that the council should protect the pharmacists instead of appearing to punish them only.

Participants in the focus groups gave many suggestions to ensure a better future for the profession. The future of the retail pharmacy sector was of particular concern in all discussions. “Retail pharmacy is dying out; the profit margin has been reduced, it is no longer a viable option”. This was seen as picking on pharmacy: “Why should government set the price for medicines or drugs but not for other items? Does government tell the supermarkets what prices to charge for food, which is also essential?” To address such anomalies, the participants felt that the government needs to hear from pharmacists speaking with one voice before they will take them seriously. Once again, the call was for pharmacists to unite and fight for their rights as a profession.

It was repeatedly suggested that the role of the South African Pharmacy Council needs to be revisited. “Presently Council only appears to receive annual fees from pharmacists without protecting their interests.” “Council is only involved in punishing errant pharmacists! Apart from protecting the public from pharmacists, Council should protect pharmacists from others, for example doctors, government and the public.” In addition, it was clear that the current situation, with no directorate of pharmacy in the department of health structure, needs to be changed. A minority of participants were of the view that “the Pharmacy Council is supportive of the profession”, and that “soon all pharmacies, including all hospital pharmacies, must be under a pharmacist, thanks to Council efforts”.

Overall, the younger, more recent graduates were more positive about the future of pharmacy than older colleagues who were disillusioned by the treatment they had received so far. But there was no obvious gender bias in the views on the future of pharmacy.

3.9 General comments

The research project was commended by some as a good initiative, and there were best wishes for the research team to achieve its aims. There were comments to the effect that it is such a project that had been missing from the programme. For one respondent, the questionnaire was too long and contained many pointless questions. Some hoped to receive feedback after the completion of the study.

> *"I appreciate this research; it gives me hope that there is a future for pharmacy at the University and also nationally if the findings help influence change for the better. What you need to do is let us know the main conclusions, and also how we can help our school."*

When asked about the profession and the pharmacists, some respondents felt that it was up to the pharmacists to show the government the importance of their profession; only then would pharmacy be given full recognition. Some felt that the field of pharmacy is broad enough to cater for many personalities, and there was therefore no need to be fixated on retail pharmacy and the regulations governing it. Some were unhappy about the fact that the pharmacy industry is still largely a white man's world, and called on graduates of UNIN to make a major impact in the pharmaceutical industries in South Africa. Others felt that pharmacy was full of opportunities and that the field is good and enjoyable. Pharmacy, they said, is a God-called profession, and all that is needed is passion for the profession and the rest will follow.

Pharmacists were called upon to be passionate about pharmaceutical care, while government and other professions were asked to let pharmacists to do their jobs according to their training. There were appeals to pharmacists to have faith in the future: "Challenges will always be there, but the future of the profession is good," were the words of one respondent. However, others observed that if pharmacists continue to work more for less pay some pharmacists would leave the profession, and that everything related to medicines should be left to the pharmacists only. Others opined that economic growth is essential to develop black pharmacists.

On salary levels, it was observed that public sector salaries are much lower than those in the private sector. The disparity between salaries in various provinces was also mentioned – some provinces, such as Gauteng, apparently offer higher salaries to attract pharmacists from other provinces, thereby exacerbating the shortages in the poorer provinces. It was the view of one respondent that poor pay is a disincentive for people to join the pharmacy profession.

4. Discussion of findings

Most of the UNIN pharmacy graduates were on the latest SAPC register, which suggests that they are still working in South Africa. Those *not* on the Register included pre-registration pharmacists (interns), pharmacists on community service who were not registered in time for the 2004 register and the deceased. It would appear few of the UNIN pharmacy graduates have emigrated, although some may have emigrated but preferred to keep their registration with the Council current. Among our respondents, opportunities for professional development and the need to serve the community seem to have been major pull factors, while poor pay would be a major push factor in consideration of changing jobs. This is in line with findings from elsewhere, which show that remuneration and salaries are potentially the most influential push factors (Padarath et al, 2003).

Limpopo Province is home to most UNIN pharmacy graduates. Though it is one of the poorest provinces in the country, Limpopo has a much higher percentage of its pharmacists in the public

sector than any other province, despite having the second lowest number of registered pharmacists. (Health Systems Trust, 2005). Whereas nationally 14.9% of registered pharmacists work in the public sector in South Africa, 46.8% of registered pharmacists in the Limpopo Province are in the public sector. In contrast, second-ranking Mpumalanga Province has 31% of its pharmacists in the public sector, and at the other end are the Western Cape and Gauteng Provinces with 14% and 6.2%, of their pharmacists in the public sector.

The higher proportion of Limpopo-based pharmacists in the public sector tends to support our finding that many UNIN pharmacy graduates are in the public sector, and many work within 200 km of their original homes. This survey found that 46.3% of the graduates of the UNIN programme work in rural areas and 62.8% are in the public sector. These figures are much higher than the national average of less than 15% of pharmacists working in the public sector (Health Systems Trust, 2005). In spite of the relatively high proportion of registered pharmacists in the public sector, Limpopo has the lowest number of public sector pharmacists ratio of all the provinces (at 2.8 pharmacists per 100,000 population). The public sector vacancy rate, however, is much lower than for most provinces (SAHR, 2005). Taken together, the low pharmacist–population ratio and low public sector vacancy rates tend to point to a shortage of public sector posts/ facilities. This possibility needs to be investigated against the existing established posts in the provincial health system.

Most respondents were of rural origin, which is reflective of the type of students who have gone through the UNIN Pharmacy Programme (Dambisya and Modipa, 2004). Rural origin was predictive of the likelihood to work in a rural posting and in the public sector. Whereas this inference has to be seen from the perspective of the relatively high number of respondents that were from the public sector, it remains true that those working in rural settings (and the public sector) were more likely to be of rural origin than of urban origin. The finding that those from rural areas are more likely to work in rural areas than those from urban areas conforms with other studies suggesting the same trends (Dambisya, 2003; De Vries and Reid, 2003).

Policy makers and sponsoring agencies may need to consider giving students from rural areas a selective advantage when they plan to alleviate the shortage of skills in underserved areas. It may be seen as one of the strengths of the present study that we had many participants from the public sector in one of the poorest provinces in the country. One of our objectives was to get views on what makes pharmacists stay in the public sector. So, their views on the issues that matter to them – for instance the frustrating and fulfilling aspects of the job – were quite instructive. It is evident that few of them took up their present jobs due to the pay, and though many indicated they would change their jobs for better pay, the underlying impression was that money was not the only consideration. A very troublesome issue in the public sector for most participants was the perception that they are not valued as professionals and that their potential contribution is not recognised. This problem needs to be addressed by policy makers to ensure a work environment that enables pharmacists to work effectively and meet their expectations. To make rural postings attractive requires a general improvement in the conditions, including the provision of schools, shopping facilities, assistance with the travelling requirements of the job and better security. A multi-sectoral approach is needed. Even if the Department of Health could make the salaries attractive, it would otherwise still fail to get the pharmacists (and other health professionals) into the rural areas.

Whereas the South African population is increasingly becoming urbanised (from 48% of urban population in 1975 to 56.5% in 2002, projected to be 62.7% by 2015), populations in poor provinces remain largely rural. For instance, the rural population of the Limpopo Province is 83% of the total (Statistics SA, 2004; UNDP, 2003). Rural populations tend to be poorer and

have higher unemployment rates, so they rely more heavily on public health services. It is possible that the increasing rural-to-urban migration will disadvantage the rural areas even more, as those who are most able to make a difference in the rural areas are more likely to move to the urban areas. They leave behind the elderly, uneducated and infirm, whose voices may not be heard (R Kalema, personal communication). Increasing rural–urban migration, therefore, will make the need for health services in the rural areas even greater. As mentioned earlier, this problem will have to be handled in a multi-sectoral manner.

Many of the pharmacists felt disillusioned because the reality in the pharmacy field was so different from what they expected when they left pharmacy school. The findings in the present study prove that any difference between expectations and reality will lead to dissatisfaction. Those who scored highly on the 'Have your expectations been met?' question also indicated higher job satisfaction ratings. Policy makers need to sensitise the students to the work environment during their training. For instance, the Department of Health and/or Pharmacy Council should talk to students during their training. As trainers, we have already embarked on a programme that affords students greater exposure to the various health facilities to provide them with a more realistic perspective on their future work environment.

Overall, there was much discontent among the pharmacists surveyed. They complained about poor pay, the perception of pharmacy as an unvalued profession, the restrictive legislation, which is seen as putting pharmacy under siege, and the fact that there may be better choices out there than pharmacy. Many respondents were frustrated with the health care system, other health professionals and even patients. Whereas the job satisfaction ratings were relatively high and more than half the respondents would do pharmacy again if they were to go back in time, most would not recommend or encourage their children to do pharmacy. This could be a cause for worry about the future of the profession, especially if those who are negatively predisposed towards pharmacy influence children who are not their own. However, current trends suggest that pharmacy is a popular course among school leavers in South Africa, with all Pharmacy Programmes receiving ten applications for every place available (J Lindhout, Pharmacy Programme Head, University of Limpopo, personal communication).

The good job satisfaction rating for the respondents, the majority of whom are in public sector, without relationship to the pay, suggests that there is more to the job than simply the remuneration. Many reportedly find fulfilment in their patient interactions and the challenges the jobs present. Feedback from patients and other health care professionals was also valued greatly by many. Indeed, initiatives that focus on the pay alone, such as the rural or scarce skills allowances may not, on their own, succeed in attracting or retaining health professionals in areas of greatest need (Reid, 2004). Such moves will need to be coupled with more wholesome improvements in the general conditions of service and the macro-economic environment to keep the health care professionals happy enough to stay in the public sector. Strategies including non-financial incentives, such as improvements in infrastructure and facilities, as well as on-the-job recognition, will have to be explored to retain more health staff (Shevel, 2003; Business Day, 2003).

Most respondents took up their present job for professional development and because they had a need to serve the community. Though the rank of the pharmacist did not have direct bearing on the reasons given for the present job, many respondents were interns and community service pharmacists for whom remuneration is fairly standard. Therefore, an intern may choose a posting that will afford them the best learning opportunities, while earning the same amount as they would have earned elsewhere. Though pay was given as sole reason for taking up the present job by only 3.6% of respondents, a bigger proportion stated that it would be a major

consideration for changing jobs. In other words, few of the pharmacists took up their jobs because of (good) pay, but many would leave their jobs because of the poor pay in the public sector (or prospects for better pay elsewhere). As already mentioned, (poor) remuneration and salaries are potentially the most influential push factors (Padarath et al, 2003). The public sector is unlikely to match private sector pay, which makes non-financial incentives even more imperative.

Respondents suggested that to attract and keep staff in the public sector and rural areas a combination of incentives was needed, including pay, better working conditions, infrastructure and security. In this respect, the present study has shown that UNIN-trained pharmacists are subject to the same push–pull factors as are other health professionals. Push factors that make the pharmacists leave the public sector include the unfriendly situation in the health sector, poor conditions of service (including pay), poor mobility/lack of promotion prospects and lack of basic facilities such as schools for children and insecurity in rural areas. Pull factors that attract pharmacists from the public sector to the private sector included prospects for better pay, independence, professional advancement and a generally better working environment. Some respondents said that pharmacists in the rural areas should get better treatment, improved pay and incentives such as car and travel arrangements.

The South African Pharmacy Council (1999) has previously expressed concern at the increasing number of female pharmacists for fear that it may “result in a decline in pharmacy human resources due to the fact that 7% less female pharmacists than male pharmacists work full-time.” In the present study, female pharmacists were at par with their male counterparts in all areas, such as rural vs. urban workplaces, income, house ownership, expectations, job satisfaction and career plans. Indeed, in many of the focus group discussions participants who expressed the most passion for the profession were mostly female, and they also tended to have the most positive outlook. The relatively high number of females in pharmacy may therefore have a more positive effect on the profession than the negative one feared by the Pharmacy Council.

Overall, most respondents felt that the future of pharmacy in South Africa was bright though certain issues need to be addressed, especially the pay, the status of the pharmacist in the health care system, and the need for incentives to attract more people to the rural, underserved areas. With the national ARV rollout programme aggravating the shortage of pharmacists in the public sector (Doherty et al, 2005), strategic and informed decisions will have to be taken to attract and retain pharmacists. Since it is unlikely that pharmacists are the only professionals to complain that the public health sector is less than ideal to work in, their suggestions may be useful in considering wide-ranging changes that will ensure the availability of appropriate human resources for health with the appropriate skills mix in areas of greatest need.

The major limitations of the present study were the relatively low response rate to the questionnaires (55%), and the fact that most of the respondents were from Limpopo Province. We received most responses from pharmacists working in public hospitals. Most respondents were working in the Limpopo Province because it was more feasible for us to follow up those in Limpopo for logistical reasons. That most of the respondents were from the public sector was partly due to the fact that it was easier to contact those in public hospitals, and they were in many cases able to 'police' each other to complete and return the questionnaires. But it is also true that there are relatively few retail pharmacies in the Limpopo Province owned or run by our graduates; as observed by some of the focus group participants, pharmacy remains a “white-dominated” profession especially in the retail sector. Similarly, there are no pharmaceutical industries to speak of in the Limpopo Province; the few industry-based respondents were in

Gauteng. The timing of the study in the wake of the new legislation and the ensuing court battles over medicine prices and dispensing fees affected the response rate as many pharmacists, especially those in the private sector, were angry, dejected and demoralised by the new legislation on drug pricing and were not prepared to participate in the study.

Furthermore, respondents and participants in the study tended to be those with a love for their school, and were motivated to participate on that basis. Many of them were in the public sector, so their views may differ from their colleagues in the private sector. That may be a source of bias for our findings. Another possible source of bias in the study is the nature of the participants – many of them were at early stages of their careers, so their views may not have the benefit of extensive experience. However, some of these weaknesses may also be seen as some of the strengths of the study. As already indicated above, hearing the views of public sector-employed pharmacists is useful for considering factors for improvement, as it is easy for those in the public sector to join the private sector, but the reverse rarely happens. Because respondents love their old school, their recommendations ought to be taken in good faith. Some suggestions for improvement of the programme were already implemented by the time of the study, such as increased clinical exposure for the students and use of active-learning methods within the course. Changes in the curriculum are presently under consideration by a joint Turfloop Campus–Medunsa Campus Pharmacy Programmes Harmonisation Committee of the new University of Limpopo. One of the researchers on this project (SIM) is also a member of the curriculum committee, and will therefore ensure that the suggestions from this study are considered.

5. Conclusion and recommendations

In conclusion, most of the graduates of the UNIN Pharmacy Programme (1966–2003) appear to be living and working in South Africa. Most participants in the study were of rural origin, and most of them work in the public sector, mainly government hospitals. Pharmacists of rural origin were more likely to work in rural facilities and the public sector than their colleagues of urban origin. The commonest reasons for taking up the present job were opportunity for professional development and the need to serve the community, but many would change their job for better pay. These pharmacy graduates are frustrated by government interference, legislation that they perceived to be unfair and the lack of due recognition for their profession. A number of suggestions were made for conditions that would make rural and public sector placements more attractive for the pharmacists, including better pay and improvement in infrastructure in the rural areas. Throughout the study, there were no gender-based differences in the views expressed. Ultimately, a multi-sectoral approach will be needed to solve the inequitable distribution of pharmacists between the private sector and public sector in South Africa.

Based on the findings of this paper, the following steps are recommended to enhance the public sector's ability to attract and maintain pharmacists:

- Since they are more likely to work in the public sector and in rural areas.applicants from rural areas should be given preference during selection of pharmacy students. The Department of Health (national or provincial) could set aside specific bursaries for these students to enable them to study pharmacy, and the training institutions could also set aside a number of places every year for them.
- A comprehensive package of incentives, both financial and non-financial, should be developed to attract pharmacists to areas of great need, and to retain those that are already in the public sector and/or rural areas.

- A multi-sectoral approach should be used to address the problems that make rural areas unattractive for the pharmacists. However, some issues such as schools, shopping areas and roads are beyond the capacity of the Department of Health to handle.
- An inclusive, consultative method should be used when developing policies and regulations that affect pharmacists. This will prevent them from feeling like rules are simply imposed on them without their input.
- The administrative set-up in the public sector should be revamped to make it all-inclusive, with the place and role of the pharmacist well stated. For a start, there should be no excuse for any facility not to have a job description for pharmacists (and any other professionals for that matter).
- Given the important role of pharmacists in comprehensive health care delivery, the national Department of Health should investigate the possibility of elevating pharmaceutical services to a directorate, preferably under a pharmacist, to take care of complaints to the effect that pharmacy is undermined by existing structures.
- Pharmacy students should be sensitised to the reality of the practice of pharmacy, especially in the public sector, while they are in training. This should be a responsibility shared by the training institutions, the South African Pharmacy Council and the Department of Health.

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Equity in health *implies addressing differences in health status that are unnecessary, avoidable and unfair. In southern Africa, these typically relate to disparities across racial groups, rural/urban status, socio-economic status, gender, age and geographical region. EQUINET is primarily concerned with equity motivated interventions that seek to allocate resources preferentially to those with the worst health status (vertical equity). EQUINET seeks to understand and influence the redistribution of social and economic resources for equity oriented interventions, EQUINET also seeks to understand and inform the power and ability people (and social groups) have to make choices over health inputs and their capacity to use these choices towards health.*

EQUINET implements work in a number of areas identified as central to health equity in the region:

- Public health impacts of macroeconomic and trade policies
- Poverty, deprivation and health equity and household resources for health
- Health rights as a driving force for health equity
- Health financing and integration of deprivation into health resource allocation
- Public-private mix and subsidies in health systems
- Distribution and migration of health personnel
- Equity oriented health systems responses to HIV/AIDS and treatment access
- Governance and participation in health systems
- Monitoring health equity and supporting evidence led policy

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