

Migration push and pull factors of Namibian diagnostic radiographers in the diaspora

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Abstract

Introduction

Brain drain undermines health systems in low-income countries. The migration of radiographers from Namibia remains poorly documented, and no published study has examined this phenomenon from the perspective of those who have already emigrated. This study explored the push and pull factors that influenced the migration decisions of Namibian radiographers working abroad.

Methods

A qualitative phenomenological design was adopted. Namibian-qualified radiographers practising abroad were recruited through snowball sampling, with a target of 10 to 20 participants, and recruitment continued until data saturation was reached. Data were collected through semi-structured telephonic interviews conducted via WhatsApp calls. Interviews were transcribed verbatim and analysed thematically using Braun and Clarke's six-phase approach, supported by ATLAS.ti. Ethical clearance was obtained from the Decentralised Ethics Committee of the School of Allied Health Sciences, University of Namibia.

Results

Six semi-structured interviews with Namibian-trained radiographers working abroad (aged 26–38) revealed four push and three pull factors driving their migration. Domestically, professionals are pushed away by limited career advancement, low pay relative to high workloads, outdated or broken equipment, and unsupportive management. Conversely, overseas employment pulls them in by offering structured career progression, higher salaries that enable savings and further study, and well-managed, fully equipped working environments.

Conclusion

The migration of Namibian radiographers is driven by interconnected push and pull factors across career growth, working conditions, and compensation. While poor prospects, broken equipment, heavy workloads, and weak management push professionals to leave, foreign countries pull them by offering structured advancement, efficient workplaces, and comprehensive financial security. Crucially, destination countries stand out because they treat these supportive conditions as standard employee rights rather than advantages that workers must individually fight for.

Implications for practice

Potential institutional approaches may include creating local postgraduate programs, reforming promotion structures, ensuring equipment maintenance, improving staffing, and training departmental leadership effectively.

Introduction

Brain drain continues to weaken health systems in countries with limited health resources.¹ The term refers to the emigration of skilled professionals from their country of origin.² Radiographers are part of this movement,² and their rates of migration have risen in recent years.³ The drivers are grouped into push and pull factors.³ Push factors are the adverse conditions in the country of origin that prompt departure, and pull factors are the favourable conditions in destination countries that attract them. The push factors reported most often are low salaries, poor working conditions, restrictive government policy, limited postgraduate training and inadequate access to advanced technology for practice and research.⁴ The pull factors reported most often are higher salaries, better health infrastructure, supportive work environments, and stronger opportunities for professional growth.³ How these factors operate in a particular setting determines whether retention strategies work.⁵

Radiographers in low-income countries move to high-income countries for a mix of professional, economic, personal, and systemic reasons.^{2,6} In Hungary, younger radiographers were most likely to seek work abroad, drawn mainly by higher pay, and 70.9% reported an intention to leave, although some had stayed because their present living conditions were acceptable.⁷ Among internationally educated diagnostic radiographers working in the United Kingdom, the strongest attractions were career opportunity, salary, and quality of life.⁸ Most of this evidence treats health workers as a single group, and radiographers remain thinly represented in the migration literature.

Across Africa, continued outmigration deepens already severe shortages and contributes to poorer health outcomes.³ Among Ghanaian radiographers, 92% reported an intention to migrate to a high-income country.² Low professional satisfaction, unmet personal ambition, and government mismanagement were identified as leading push factors.² Ohene-Botwe et al. also reported that some radiographers left because their skills were not valued at home, a finding repeated in the 17-country survey.^{2,3} What remains missing is evidence on the factors that move radiographers, as distinct from doctors and nurses, out of African health systems.³

The conditions that draw radiographers abroad cannot be reduced to a single motive.² Migration is not always intended to be permanent, since 69.5% of Ghanaian radiographers said they intended to return home at some point.²

Evidence from southern Africa points in the same direction. In KwaZulu-Natal, physical and psychosocial working conditions were linked to radiographer migration, together with the absence of career and professional development.⁹ In Gauteng, the relationship with the supervisor was most strongly

associated with intent to leave, and the extrinsic factors were government policy, poor infrastructure, and an ineffective human resources function.¹⁰ Much of this regional evidence predates current workforce dynamics. In Namibia, Karera et al. found that about 80% of radiographers in state hospitals were satisfied, yet close to half reported turnover intention.¹¹ Satisfaction and intention to leave moving in opposite directions suggests push factors that a job satisfaction instrument does not capture. That study surveyed radiographers still in post, so it could not describe what became of those who left.

The consequences of these departures fall on the staff who remain. A smaller workforce carries the same caseload, and workload pressure rises.^{2,3} Burnout follows, and 76.6% of Ghanaian radiographers agreed that migration had increased the strain on colleagues left behind.² Senior radiographers are usually the ones who leave, leaving less experienced staff who must be trained up to the level of those who have gone.² Short staffing then becomes self-sustaining, because the conditions it creates drive further migration.³ Service delivery slows, imaging facilities become congested, patients wait longer and report lower satisfaction, and diagnostic quality suffers, with consequences for morbidity and mortality.^{2,3} In Namibia, these pressures act on a health system already contending with staff shortages, ageing infrastructure, limited equipment, weak maintenance, and unmet targets in primary health care delivery.^{12,13}

Namibia has no national retention policy written specifically for radiographers. The WHO Global Code of Practice on the International Recruitment of Health Personnel recognises health workers' right to migrate, while urging member states to build a sustainable domestic workforce and asking high-income countries not to recruit from countries with health workforce shortages.¹⁴ Radiography-specific work recommends improved working conditions, career pathways, and financial incentives as the practical content of retention.¹⁵ Such recommendations depend on knowing which factors actually drive departure locally.

Approximately 27 radiographers left the imaging departments at Katutura Intermediate Hospital and Windhoek Central Hospital over the ten years to 2026 (according to personal communication with a principal radiographer, 24 February 2026). No published Namibian study has described why they went. Local research examines job satisfaction and turnover intention among current staff, while international work on migration determinants includes no Namibian participants. Radiographers who have already left are the only group able to speak to both sides, the conditions they left and those that received them. This study explored the push and pull factors that influenced the migration decisions of Namibian radiographers working abroad.

Methods

Study design

A qualitative phenomenological design was adopted. This design was appropriate to the study aim of understanding the lived experiences of Namibian radiographers who had migrated. The study pursued

two objectives: to describe the push factors within Namibia that influenced migration, and to explore the pull factors in destination countries that attracted radiographers abroad.

Setting

The study population was geographically dispersed, with participants taking part remotely from their countries of residence while the researcher was based in Namibia. Data were therefore collected through virtual interviews.

Population and eligibility

The population was Namibian-qualified radiographers practising radiography abroad. Eligible participants were radiographers of any rank and any level of experience, who could communicate in English, who had worked in a Namibian state health facility for any duration, and who had resigned to practise radiography outside Namibia. Radiographers working in Namibia at the time of data collection were excluded. Radiographers who had not worked in Namibia before migrating were also excluded, because they could not reflect on push factors within the Namibian system.

Sampling and sample size

Non-probability snowball sampling was employed. Initial participants were asked to refer others who met the inclusion criteria. The target sample was 10 to 20 participants; the final size was xxx, and recruitment continued until data saturation was reached.

Data collection

A semi-structured interview guide was developed. The guide centred on two questions: the first explored the factors within Namibia that had prompted the participant to leave, and the second examined the factors that had attracted them to their current country of practice. Probing and clarifying questions followed each response. Interviews were conducted by telephone and voice-recorded with consent. Although telephonic interviews preclude the observation of non-verbal cues, they are cost-effective, less intrusive, and may reduce interviewer bias.^{16,17}

Potential participants were contacted through WhatsApp and invited to take part. Those who agreed submitted a written consent form before the interview. Willingness was confirmed verbally at the start of each interview. Interviews were scheduled at a time convenient for each participant and conducted through WhatsApp calls.

Pilot

A pilot interview was conducted before the main study. It followed the same procedure and involved one Namibian radiographer in the diaspora who met the inclusion criteria. The pilot tested the interview guide, the timing, and the feasibility of WhatsApp call interviews, including audio quality and connectivity. The guide required no revisions, and the pilot interview was therefore included in the final analysis.

Data analysis

Interviews were transcribed verbatim. Data were analysed thematically. The six phases described by Braun and Clarke were followed: familiarisation with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report.¹⁸ ATLAS.ti software supported coding and organisation.

Trustworthiness

Trustworthiness was addressed through the criteria of credibility, transferability, dependability, and confirmability.^{19,20} Credibility was established through prolonged engagement, probing, and verbatim transcription. Transferability was facilitated by thick description of the context, methods, and participants. Dependability was ensured through an audit trail of research decisions and analysis records. Confirmability rested on the same audit trail, together with verbatim quotations that grounded the findings in participants' own words.

Ethical considerations

This study was approved by the Decentralised Ethics Committee of the School of Allied Health Sciences, University of Namibia (SAHS0017), and conducted in accordance with the institutional ethical guidelines and the Belmont Report. Participation was voluntary. Written informed consent to participate in the study was obtained from all participants, all of whom were older than 16.. Participants were informed that they could withdraw at any time without prejudice. Participants were selected only on the inclusion criteria, and all were treated alike throughout the process. Questions were designed to avoid emotional or psychological distress. Privacy was protected by assigning unique codes and by deleting recordings after transcription. Data were shared only between the researcher and supervisor, used only for research purposes, and stored on a password-protected device.

Results

Six semi-structured interviews were conducted with Namibian-trained radiographers currently practising abroad: five in the United Kingdom, one in South Africa. Participants ranged in age from 26 to 38 and held at least an honours degree in diagnostic radiography. Four push themes and three pull themes were developed.

Push factors within Namibia

Participants' accounts of what pushed them out of Namibia clustered around four features of the public radiography workforce. Career progression met a structural ceiling. Service infrastructure could not reliably maintain itself. Remuneration was disproportionate to workload. Management felt both

emotionally and professionally limiting. Management frequently surfaced as the emotional trigger for exit decisions already driven by deeper structural problems.

Theme 1: Structural career foreclosure in the public sector

Participants described the Namibian public radiography career as one that stops abruptly rather than one that advances slowly. Foreclosure operated at two levels: a fixed pay grade beyond which salary does not advance, and an absence of subspecialty or postgraduate pathways within the country.

Sub-theme 1.1: The Grade 7 salary and rank ceiling. A fixed grade caps upward mobility, typically after around ten years of service, and does not shift with further experience or qualification. P3 named both the mechanism and the timing: *"there is a bracket, an income bracket that you reach. Once you've worked for them for 10 years... your salary doesn't increase or change... till the day that you retire."* P1 identified a further bottleneck: seniors above them had also stagnated, so there was *"no growth potential."*

Sub-theme 1.2: Lack of domestic subspecialty and postgraduate pathways. Namibia has no local subspecialty routes and no local postgraduate programmes. Anyone who wants to advance clinically has to leave the country to do so. P4 identified both the training gap and the funding gap that closes off the workaround: *"there's no educational programs in Namibia. Secondly, there's no funding to do it elsewhere."* P3 named the specific absence: *"in CT, there are subspecialties as well. Like here, you can be doing CT, but you are a cardiac CT specialist, you are a colonoscopy CT specialist. And we don't have that back home."* The career is closed on two fronts: upward through rank and pay, and outward through subspecialty training.

Theme 2: Infrastructural fragility and institutional inertia

The service cannot reliably maintain itself. Equipment breaks and is not repaired promptly. Staffing shortages produce workload cycles that lead to illness. Training obligations fall on staff who have no formal preparation to teach. Daily clinical practice depends on individual quick fixes, not systemic capacity.

Sub-theme 2.1: Prolonged equipment downtime and procurement delay. Breakdowns persist for weeks or months. P3 named the cultural rather than technical cause: *"there was no sense of urgency when it came to equipment breakdowns. We would go like three months or a whole month, with equipment being broken."* P4 identified the underlying scarcity: *"there was only one CT scanner in each hospital, only one fluoroscopy unit that was working, only one mammography unit. And so that put a lot of pressure on staff."*

Sub-theme 2.2: Understaffing, workload cycles, and staff illness. Chronic shortages increase workload, which drives illness and turnover, which deepens the shortage. P3 explained the sequence: *"the workload was a great deal and there was a shortage of radiographers. It puts unnecessary stress on the people that were in the department at the moment, and because of that, people were always always sick."* P4 attributed

the same cycle to widespread turnover: *"the state was struggling to keep hold of its staff because it was so stressful."*

Sub-theme 2.3: Informal training and unsupported clinical learning. Training responsibilities fall to staff who are neither prepared nor resourced to teach, producing an improvised learning environment. P3 described it as *"you have to learn how to do stuff on the job... you are learning from someone that is not qualified to teach you basically."* P4 added that *"there were a lot of students at the time and not enough staff to oversee their training."*

Theme 3: Remuneration incommensurate with workload intensity

This theme is not about salaries being low in absolute terms. It is about pay being disproportionate to workload, hours, and cost of living. Overtime does not close the gap.

Sub-theme 3.1: Disproportion between pay and tertiary workload. Participants at the two major hospitals describe pay as inadequate for the volume and intensity of work. P1 highlighted that relying on overtime is ineffective: *"you should be able to earn a decent salary. You can't be in middle class, basically, instead of having to do more overtime to cover all your costs. Which is not even feasible."* P4 reframed the claim in terms of what remains after expenses: *"you have less money in your bank account after expenses, at the end of the month, rather than what you have in the UK or elsewhere."*

Sub-theme 3.2: Fair pay in lower-workload settings (dissenting case). P5 described the district hospital as a place where pay was fair for the work performed. This does not contradict the theme. It reinforces it. Workload intensity, not salary level alone, is what drives satisfaction. *"For the work that I was doing there, I feel like the salary was fair. It was a small department, I was only doing general radiography... And for every after-hours case, you would be compensated for it, and the compensation was also fair."* A lighter workload paired with a fair salary confirms that dissatisfaction elsewhere concerns the ratio, not the level.

Theme 4: Managerial style as affective and professional constraint

Participants described managerial conduct as unsupportive around personal circumstances and closed to junior clinical input. In one account, it was the primary factor in accepting an overseas offer. Managerial style operated as a distinct push factor alongside the structural themes, not as a symptom of them.

Sub-theme 4.1: Managerial style as source of affective distress. Unsupportive conduct produced poor morale and, in some cases, considerable personal distress. In P3's case, visible distress during the interview marked how intense the memory was: *"the job morale was very, very very poor. Staff didn't get enough support from management, especially when it came to personal stuff, personal issues, such as*

leave." Pilot01 named management as the sole reason she accepted an overseas offer she had not been actively pursuing: *"work was fine, colleagues were fine. There was just one point where it felt unhappy. The management. Mainly just the management."*

Sub-theme 4.2: Managerial style as gatekeeper of clinical innovation. A distinct pattern involves limited receptiveness to junior clinical input, described as generational and hierarchical. P4 gave the sharpest account: *"as a young radiographer, if you were suggesting a new approach that might have been better, you were quickly shut down."* P2 named the systemic consequence: *"the management was a bit of a failure in most cases and it led to a lot of radiographers moving abroad."*

Pull factors within destination countries

Participants' accounts of what pulled them into their destination workplaces clustered around three features: clear opportunities for career progression, financial capacity that extended beyond salary alone, and functional work environments that made daily practice easier. Participants drew the contrast directly. In Namibia, career progression stopped at a fixed ceiling; abroad, it was part of the system. Namibian pay fell short of the workload; destination pay was valued for what it made possible. Namibian management was personal and unpredictable; destination management was built into how the workplace ran.

Theme 5: Structured and accessible career progression

Destination employment systems offer formal pathways for advancement: named subspecialties (CT, cardiac, Cathlab, reporting), funded in-service training, competency-based sign-off, and rapid promotion. Progression is built into the employment system rather than a personal pursuit requiring self-funded migration.

Sub-theme 5.1: Formal subspecialty and reporting pathways. P3 contrasted the range of routes with home: *"the UK offers you the opportunity to either become a cardiac radiographer, not [only] a CT radiographer... If you do CT for a number of years, you're allowed to try and move into MRI."* P4 named the expanded scope: *"radiographers have a wider scope. We can refer, we can report. That's not something that happens in Namibia."*

Sub-theme 5.2: Funded training and rapid promotion. Advancement is institutionally supported through employer-funded training and short promotion timelines. P1 offered the sharpest description: *"this is my third year in the UK and I was able to obtain a senior position within two years. UK prioritises experience... Growth is very quick."* P3 named the induction infrastructure: *"when you come in as a new employee, you have like a logbook. You need to finish a certain number of examinations before you are signed off."*

Theme 6: Financial capacity, remittance, and downstream affordances

Destination remuneration operates through what it enables, not through its headline value. Higher pay, a stronger currency, and employer-funded benefits together produce disposable income for saving, remittance, further study, and discretionary spending.

Sub-theme 6.1: Disposable income, saving, and transfer capacity. Destination pay produces surplus after expenses, enabling both personal consumption and transfers to family in Namibia. P1 stated it plainly: "money, money, money. The first thing is money. There's money here, I can afford what I want and still have enough to send home." P4 identified the exchange rate logic: "you're earning a foreign currency that is much stronger than our currency. So I wanted to have more disposable income."

Sub-theme 6.2: Financial capacity as enabler of further study. Destination pay enables self-funded postgraduate study, addressing the gap identified in Sub-theme 1.2. Pilot01 named the connection: "you would also get enough money, especially if you want to study... there are many opportunities in Europe, many programs that you can enrol into." The pull reopens a route into professional development that the Namibian system had closed off.

Sub-theme 6.3: Employer-funded benefits as retention infrastructure. Employer-funded pension, medical insurance, and life insurance form a compensation package rather than a wage. P1 enumerated them in contrast with home: "medical health insurance is here like the PSEMAS. We have pension, whether private or state. They are paying for your medical insurance, and after a while you get life insurance paid for as well. Whereas in Namibia, you pay for your own life insurance."

Theme 7: Functional operating environments and protected working conditions

Destination workplaces operate as functional systems. Rest is protected. Scope boundaries are respected. Digital infrastructure integrates the clinical workflow. Managerial support is a systemic property, not an individual character.

Sub-theme 7.1: Protected rest and worker agency over scheduling. Participants describe formal rights to refuse shifts and limits on consecutive nights. P1 contrasted the two systems in a single sentence: "there's a thing called work and life balance and in the UK they take that very seriously. You can tell the manager, oh, I'm not able to cover that. Whereas back home, whether you are blue or black, you still have to cover your shift." P3 described a scheduling pattern that structurally protects rest: "you work two short days, like your 9 to 5, and then two long days, and then you have three days off during the week. We don't do nights where I'm working."

Sub-theme 7.2: Functional systems and clinical infrastructure. Advanced equipment, integrated radiology information systems, and respected scope boundaries make clinical work easier and safer. P3 described the RIS: "we have a functional RIS system. You can actually see your patient... the CT protocol is justified basically by the radiologist on the same system. Once the scan is done, the report is made available on the

same system." P2 framed equipment as an enabler: *"equipment wise, I think we are pretty much advanced here, and it just makes our work much easier."*

Sub-theme 7.3: Managerial support as systemic rather than individual. Participants describe destination managers as supportive across both professional and personal matters, framing this support as an operating norm rather than the disposition of one individual. P3 stated it emphatically: *"my managers are very very and I mean VERY supportive, in the workplace and if you're struggling with something outside of work, they will try to assist however they can."* The contrast with Theme 4 matters. The same participants who described Namibian management as a personal problem described destination management as a systemic property.

Discussion

This study explored the push and pull factors influencing the migration of Namibian radiographers now practising abroad. Four push themes and three pull themes were developed from the accounts of six participants. Migration decisions were described as arising from an interaction of professional, organisational and economic conditions rather than from salary alone. Participants also described push and pull as connected rather than separate, since the attractions of destination employment were defined against the conditions they had left. This differs somewhat from Fletcher-Nkile et al.,²¹ who interviewed 23 South African anaesthetists and concluded that pull factors frequently outweighed push factors in the decision to emigrate.

The structural limits on career progression reported by participants, particularly the fixed grade reached after approximately ten years of service and the absence of local subspecialty and postgraduate routes, echo findings from similar studies elsewhere. Restricted career advancement has been identified as a principal driver of health worker migration internationally, among several African countries.^{1,2,9} The present findings extend this literature by identifying the mechanism through which career limitation operates in the Namibian public service, since on the timeline described a radiographer entering state service in their early twenties would reach the last notch of their grade before mid-career and remain there for an extended period. This suggests that career structure is a modifiable determinant of retention rather than a fixed feature of a small health system, and that developing postgraduate and clinical specialisation pathways locally may contribute to improved retention.

These findings should be considered alongside evidence on migration intentions formed before entry into practice. A survey of 614 radiography students across 14 African countries found that 93% expressed a desire to work abroad, with the desire to fulfil self-aspirations the most commonly endorsed push factor.²² If intention is close to universal among students, the conditions described here may represent the point at which an existing intention was converted into action rather than its origin, which suggests that retention measures directed only at serving staff may act late in the decision process.

The challenges encountered in the clinical environment, particularly prolonged equipment downtime and procurement delay, echo findings from similar studies in other developing countries. Participants described hospitals operating with one functioning CT scanner, one fluoroscopy unit and one mammography unit, so that each breakdown suspended a service, and comparable shortages of imaging equipment and workforce in low-income and middle-income countries have been documented in a global assessment of imaging capacity.²³ Notably, participants attributed prolonged downtime to an absence of urgency in repair and procurement rather than to an absence of funding, which suggests that maintenance and procurement processes, rather than capital budgets alone, may warrant attention. Compounding these constraints, understaffing and increased workload emerged as a recurrent concern, supporting previous reports from Ghana and across the continent.^{2,3} Participants described a self-sustaining cycle in which staff shortages increased workloads, contributing to sickness absence and further departures, which deepened the original shortage. These shortages were also reported to result in student supervision by staff without formal preparation to teach, potentially affecting the quality of clinical learning.

Dissatisfaction with remuneration related primarily to the relationship between workload and pay rather than to salary level alone. A participant at district level judged pay to be fair for a lighter workload with compensated after-hours duty, while participants at the two Windhoek tertiary hospitals judged the same national salary structure inadequate. This pattern is consistent with the effort-reward imbalance model, which has been applied to health worker retention in previous research.²⁴ In a prospective study of 6469 nurses across seven European countries, high effort-reward imbalance at baseline predicted intention to leave the profession (relative risk 1.33, 95% CI 1.22 to 1.45), with reward frustration comprising poor salary, poor promotion prospects and lack of esteem carrying the greatest explanatory power.²⁵ The model may also help to explain the observation by Karera et al.¹¹ that approximately 80% of radiographers in Namibian state hospitals reported job satisfaction while close to half reported turnover intention, since satisfaction instruments measure the level of reward rather than its proportionality to effort. Salary increases alone therefore appear unlikely to reduce migration while workloads and working conditions remain unaddressed.

The negative experiences of management reported by participants point to another important aspect of the working environment, with two participants identifying managerial conduct as the immediate reason for accepting an overseas post. Participants described limited managerial support, inflexible leave arrangements and resistance to suggestions from junior radiographers. This supports the findings of Sibiya et al.¹⁰ who reported that the supervisor relationship was most strongly associated with intent to leave among radiographers in Gauteng public tertiary hospitals, and comparable findings on leadership and intention to leave among South African radiographers reported by Cibane and Hoque.¹⁵ A systematic review of the nursing workforce further reported that relational leadership styles are associated with higher job satisfaction and retention, while task-focused and passive styles are not.²⁶ Participants characterised management in Namibia as the disposition of particular individuals and

management abroad as a property of how the workplace operated. These findings point to the need for formal preparation, standards and accountability for those appointed to manage imaging departments.

The pull factors identified in destination countries corresponded closely to the shortcomings reported in Namibia. Participants described structured career pathways, employer-sponsored training, competency-based promotion and expanded scopes of practice. This is consistent with the formally defined advanced practice, reporting and modality specialisation pathways documented in the United Kingdom, and with reports that career advancement and training opportunities attract radiographers to high-income destinations.^{2,3} Participants regarded career advancement in destination systems as an established feature of employment rather than an individual responsibility requiring self-funded migration, a distinction that has not been articulated in the radiography migration literature to date.

Financial attraction extended beyond higher salaries. Participants valued the capacity to generate disposable income, support family members through remittances, finance further education and benefit from employer-funded pensions and medical insurance. Reviews of health worker migration commonly identify higher remuneration among the principal pull factors, and the present findings suggest that the financial attraction operates through the whole employment package rather than through basic pay.^{1,5} This is consistent with the survey of African radiography students, in which the opportunity to gain better clinical experience rather than salary was the most strongly endorsed pull factor, with 56% of respondents strongly agreeing.²⁷

Participants also described functional working environments as a distinct attraction, referring to modern imaging equipment, integrated digital information systems, protected rest and supportive management, all of which were regarded as standard rather than exceptional in destination systems. Surveys and qualitative work with internationally educated radiographers in the United Kingdom report comparable perceptions of working conditions alongside difficulties in professional integration and recognition, which suggests that destination employment is experienced as an improvement in working conditions rather than as an unqualified benefit.^{6,9}

The policy context merits particular attention. Namibia does not appear on the WHO health workforce support and safeguards list 2023, and consequently does not appear on the red or amber country lists governing international recruitment into the United Kingdom, so active recruitment of Namibian health personnel is permitted.^{14,28} Inclusion on the WHO list depends on a density of medical doctors, nursing personnel and midwifery personnel below 49 per 10 000 population together with a universal health coverage service coverage index below 55, and Namibia is one of only four countries in the WHO African Region to exceed that density threshold.^{28,29} As radiographers are not among the three cadres used in this calculation, a small professional group may be depleted while the national indicators determining protection remain favourable. Given that five of the six participants had migrated to the United Kingdom, and that the WHO Global Code of Practice relies on voluntary implementation and country-level monitoring, retention measures for Namibian radiographers will need to be developed domestically rather than relying on international safeguards.¹⁴

This study has several limitations. Six participants were interviewed, five of whom had migrated to a single destination country, so the pull factors described may reflect the United Kingdom National Health Service more closely than destination systems in general. Snowball sampling may have produced a sample with shared professional networks. Accounts were retrospective, and participants settled abroad may construct a coherent narrative of their departure. Radiographers who migrated and subsequently returned, or who left the profession, were not represented. Interviews were conducted by a single researcher, and no member checking was undertaken, which may have limited the interpretive range of the analysis. The single district hospital account informing the remuneration theme also suggests that a sample stratified by facility level would refine these findings.

Further research is recommended in two areas. A national survey of serving radiographers would establish whether the grade ceiling and the absence of local postgraduate routes predict migration intention among those still in post. Research examining whether smaller professional groups such as radiography are adequately represented in the indicators governing ethical international recruitment would also be timely, given the anticipated revision of the WHO list in 2026.

Conclusion

The migration of Namibian radiographers is influenced by interacting push and pull factors that operate on the same dimensions of career structure, working conditions and reward. Career foreclosure, limited postgraduate and subspecialty opportunity, equipment downtime, excessive workload and unsupportive management encourage departure, while destination countries attract radiographers through structured career development, functional working environments and financial security extending beyond basic salary. What distinguished destination employment in these accounts was not the presence of these conditions alone but their status as entitlements of employment rather than individual pursuits.

Retention strategies will therefore need to extend beyond salary adjustment. Establishing postgraduate and subspecialty programmes in Namibia, revising the grade structure so that experience and qualification continue to attract advancement, contracting for equipment maintenance and replacement, improving staffing levels, and preparing those appointed to manage imaging departments together represent a more plausible response than remuneration reform alone. Because Namibia falls outside the international safeguards governing active recruitment, the responsibility for these measures rests with national institutions.

Declarations

Ethics approval and consent to participants: This study was approved by the Decentralised Ethics Committee of the School of Allied Health Sciences, University of Namibia (SAHS0017), and conducted in accordance with the institutional ethical guidelines and the Belmont Report. Participation was voluntary. Written informed consent to participate in the study was obtained from all participants, all of whom were older than 16.

Availability of data: Data required for this study may be made available by the author(s) upon reasonable request.

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Rebuttal Table

Title: Migration push and pull factors of Namibian diagnostic radiographers in the diaspora

Comment	Action taken
1. Revise title To aid our readers, and to maximize the accessibility of your manuscript, the title should have a clear, precise scientific meaning. Where possible, the title should be read as one concise sentence, without the use of punctuation (full stops, colons, hyphens, question marks etc.). Please could you re-write the title ensuring that it is informative and appropriate? Also update the modified title in the manuscript, submission system and cover letter.	The title was changed to: "Migration push and pull factors of Namibian diagnostic radiographers" in the manuscript, submission system and cover letter.
2. Accordance statement ii. The statement should also note in accordance-that the research was carried out following the guidelines of the ethics committee listed in the ethics statement. For example, the protocol was approved by [named committee/IRB] in accordance with the [named relevant guidelines and regulations].	The statement was changed to: "This study was approved by the Decentralised Ethics Committee of the School of Allied Health Sciences, University of Namibia (SAHS0017), and conducted in accordance with the institutional ethical guidelines and the Belmont Report." in and at the end of the main document.
3. Consent to participate: We request author to include, "informed consent" to participate in the study must be obtained from participants (or their parent or legal guardian in the case of children under 16). Please could you provide a statement to this effect in the manuscript.	The statement was changed to: "Written informed consent to participate in the study was obtained from all participants, all of whom were older than 16." in and at the end of the main document.
4. Consent to publish statement: If no identifiable personal data or images are present, please state 'Not Applicable' for the consent to publish section.	The "Consent to publish statement: Not Applicable" was added to the main document.
5. Data Availability statement: We noticed that you have provided a Data Availability Statement in the manuscript as "Data required for this study may be made available by the author(s) upon reasonable request. ". Kindly ensure that the same statement is included in the submission system. It should not be "No" in the data availability declaration.	The statement "Data required for this study may be made available by the author(s) upon reasonable request." was added to the submission system.