

THE HUMAN RESOURCE INFORMATION SYSTEMS INFLUENCE IN THE HEALTHCARE SECTOR OF WESTERN CAPE, SOUTH AFRICA

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ABSTRACT

The responsiveness of Human Resource Information Systems (HRIS) as alternative enablers that assist several sectors in achieving competitiveness is significant. The necessity for Human Resource Department (HRD) performance in the healthcare sector often leads to several investigations conducted. Surprisingly, the advantage of HRIS influence in healthcare continues to attract HR practitioners and researchers in that category. However, they are yet to determine how HRIS could influence health workforce sustainability in the sector. For this reason, the study intends to highlight the reasons that deprive HRIS influence in the healthcare of the Western Cape, South Africa (SA). Data collected from four public healthcare facilities in the WC were subjected to mixed-model research methods involving qualitative and quantitative scrutiny. Purposively selected employees were involved in the study, interviews (forty-one) were conducted, and questionnaires (forty-six) were collated. The study identified poor organisational structures, absence of alteration management structures, deficiency of upgraded HRIS and Automated Information Systems (ISs), and deficiency of knowledge, and awareness of HRIS and manual HR practices amongst others. Ethics and approvals were granted by the public healthcare management of SA and the affiliated institution. The study concluded with processes that influence HRIS through knowledge, awareness, improvement, automation of technology and infrastructures, and availability of funds. Significant limitations associated with workforce sustainability in the healthcare sector as well as recommendations for further research are indicated in this paper.

KEYWORDS

HRIS Influence, Human Resource Information System, Manual HR, Healthcare Sector, Workforce Sustainability

1. INTRODUCTION

In attaining universal coverage in healthcare for Vision 2030, the United Nations has mapped out 17 points on Sustainable Development Goals (SDG) concerning issues such as poverty, peace, safety, peace, well-being, and prosperity of people in all nations [1]. This research emphasises the good health and well-being of the SDG. Health and well-being highlight the need for affordable healthcare services to all humans irrespective of their level of income, and to make sure that people are kept alive. Several reasons could pilot revolution within sectors/organisations. Such reasons could be within organisations such as employees, management, and new ideas amongst others. Other reasons could be outside the organisation such as opposition, patients/customers, location, and government amongst others. Ideally, organising and managing the health workforce

is considered a significant tool in a growing nation. Ideally, Human Resource Information Systems (HRIS) are regarded as a form of re-introducing Human Resource Management (HRM) systems through the structural evolution of workforce information for competitiveness [2]–[4]. Thus, HRIS is described as the acquiring, manipulating, storing, retrieving, analysing, and distributing of workforce information through a system [5]. Nonetheless, managing Human Resources (HR) through Information Systems (IS) could have an impact on HR performance because the management of workforce information could be complicated [6]. Ideally, HRIS influence can, therefore, be a significant strategic application that would require systems in place for reliable healthcare service and a supportive workforce [7], [8].

The necessity of HRIS influence on healthcare performance is extraordinary leading to several research conducts [9]. Wright et al. [10] maintain that the utility of HRIS in sectors such as healthcare has been researched, yet could not highlight the effect on workforce retention. Haule et al. [11] believe, that manual workforce document of information within the healthcare sector discourages the effect of ISs such as HRIS. Thus, the manual functions could create a negative impression of HRIS influence in healthcare as well as cause loss of workforce vital information in the process [12], [13]. Life Esdimeni was a tragedy that occurred in SA where several mentally sick patients were relocated to undocumented homes, resulting in the loss of lives and some missing till today [6], [14]. This incident is an example of improper information documentation in the healthcare sector. Ideally, the negligence was blamed on public healthcare poor management, unfavourable documentation, absence of novel IS, and lack of qualified personnel amongst others [15]. HRIS could influence the eradication of needless HR blunders in the healthcare sector and a need for suitable HRIS in the sector to avoid unnecessary loss of human lives [15]–[18].

Consequently, the influence of HRIS in the healthcare sector is continuously underlined amongst HR, Information Technology (IT), and IS studies, however, the reasons that impede HRIS influence in the industry are still unidentified. [19]. Therefore, issues relating to the HR section can be handled through an on-time delivery system in place [20], [21]. Thus, the need for a supportive healthcare sector in a nation could be strengthened by resistant HRIS to achieve the Vision 2030 SDG of the United Nations [22]. A workforce improvement strategy could be required to assimilate positive outcomes in organisations. [23], [24].

2. LITERATURE REVIEW

The use of un-updated ISs and manual systems to record and keep healthcare workforce information compromises the confidentiality of records in the sector [21], [25]–[27]. Ideally, several scholars emphasised in their study on HRIS in healthcare made it known, the exclamation of job dissatisfaction among healthcare workers is due to several concerns relating to unfavourable IS in place [28]–[30]. However, Driessen et al. [31] and Lema [32], are of the notion of the need for influence of HRIS towards re-shaping workforce confidence in the healthcare sector.

Healthcare workforce information security is a significant concern in addressing HRIS influence in several sectors. A study conducted by Kankaew [33], highlights the requirement of adequate HRIS for the security and management of workers' details within various sectors is of great concern due to the sensitivity of such information. Thus, Spero et al. [34] maintain, that reinforcing the healthcare sector through HRIS, would need IS security and access as well as information quality and reliability. Therefore, there is a need to reinforce ISs and technology infrastructure, improve software solutions, and build HRIS capability for workforce sustainability [10], [35]–[37].

The deficiency of HRIS influence in the healthcare sector escalates worries about socioeconomic difficulties in nations such as SA. This creates workforce downsize, which could be attributed to several reasons such as reduction in salary structure, workload, and deficiency of system upgrades [38]–[41]. These, however, constitute reasons healthcare workers in countries such as SA pursue other opportunities elsewhere. Although, there is a notion that several healthcare workers are delighted and dedicated to doing their job, however, feel irritated by the attrition rate of the workforce in the sector [27], [42], [43]. Sirili et al. [26] as well as Udekwe et al. [44] also indicated that the deficiency of IS such as HRIS in the healthcare sector in African countries could be attributed to why skilled healthcare professionals are relocating to other countries and sectors.

It is critical to highlight the healthcare sector's important contribution towards the socio-economic growth in nations. Positioning the HRIS influence in several sectors would assist in eliminating the manual system of maintaining workforce information. Therefore, a need to initiate policies in technology to identify HRIS influence in the healthcare sector and its relevance to the workforce [45], [46]. Technically, this process is significant in the control of skilled healthcare workforce resignations and assists in identifying, tracking, and recording correctly in the sector [34]. Chankova et al. [45], Spero et al. [34] and Udekwe et al. [6] are of the notion that sustainability and retention accomplishment in the healthcare sector, would require critical identification of reasons that would impact the influence of HRIS for recording and tracking of the healthcare workforce.

Interestingly, accomplishment in the healthcare sector is subject to the availability and readiness of skilled workforce in nations. Therefore, it is significant to highlight the opportunities of HRIS influences towards skilled workforce Sustainability in the healthcare sector of continents such as Africa [47], [48]. There is a further need to highlight the necessity of the effective HRIS influence in the healthcare of Western Cape, SA.

3. METHODOLOGY

The study involved several public hospitals in the Western Cape of SA with eighty-seven purposively selected participants involved. A mixed-model research method involving quantitative and quantitative data collection and analysis was utilised. The method is fundamentally one method supporting the other method of data for meaningful analysis. The quantitative method, a Likert Scale questionnaire was initiated and analysed using SPSS [49], [50]. Interviews were conducted and analysed through Atlas-ti for qualitative method [51]–[54]. Descriptive and exploratory research designs were initiated to acquire novel insight into the pertinent information concerning HRIS influence in various sectors [55]–[57]. A pragmatic paradigm and abductive approach were followed in the study [58], [59]. A survey and multiple case study strategies were also utilised to obtain extensive information on HRIS influence in healthcare in the Western Cape of SA.

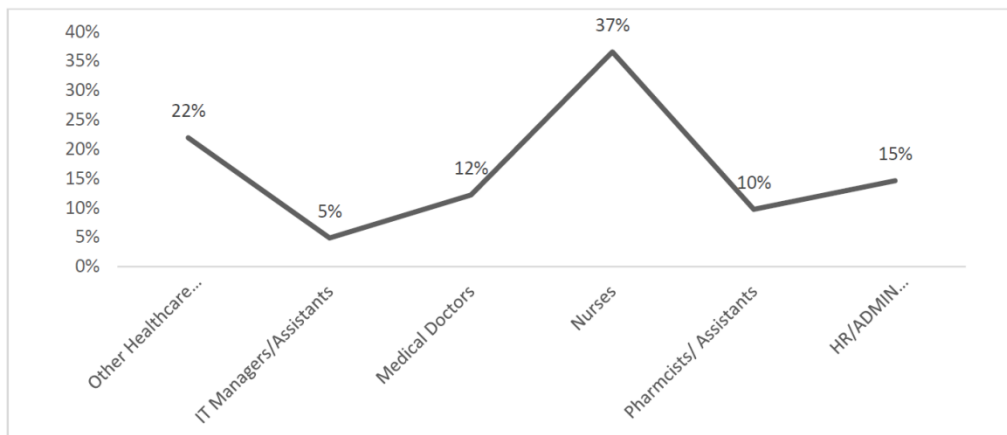


Figure 1. Qualitative category

Figure 1 indicates that of the 41 (47%) of the purposively selected participants interviewed, 37% were nurses, followed by a combination of several minor healthcare departments 22%. 15% are from the HR&ADMIN department, followed by 12% medical doctors and 10% pharmaceutical staff. The remaining 5% is from the IT department.

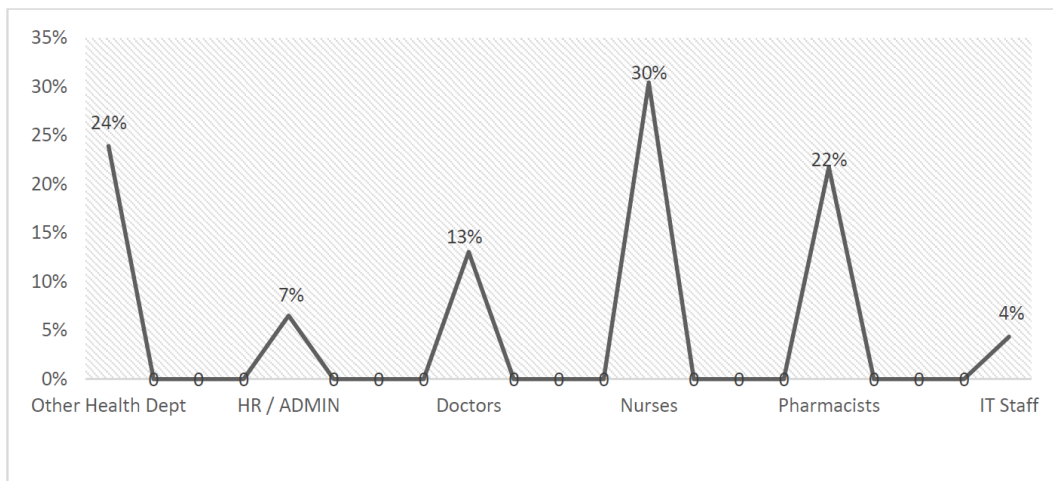


Figure 2. Quantitative category

Figure 2 indicates that 53% (46) of the purposively selected participants were administered questionnaires of which, 30% are nursing staff, 24% are people from smaller departments combined and 22% are pharmaceutical staff. 13% are medical doctors followed by 7% of HR& Admin staff and 4% from the IT department.

3.1. Approval of the Study

Approvals and ethics certificate was granted by the Department of Health in Western Cape of SA and the affiliated institution. Consent forms were signed before collecting data. Also, ethics concerning anonymity, right to privacy, deception, justice, beneficence, voluntary no harm, confidentiality and justice were observed [60], [61]. The study had limitations in the data collection because it was collected during the COVID-19 pandemic invasion which made several intended participants decline.

4. ANALYSIS

The aim is to determine HRIS influence in the healthcare sector in the Western Cape of SA. The data collected from both methods are analysed in Figures 3 and 4 below.

4.1. Analysis of Interviewed Data

A description of the analysis of the transcribed interviewed data is displayed in Figure 3.

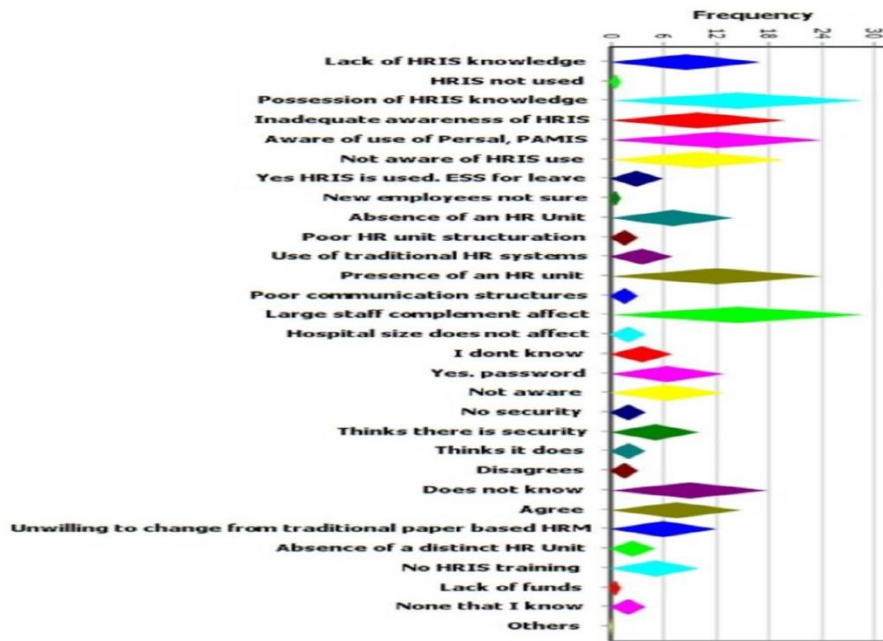


Figure 3. Interview analysis[68]

Figure 3 highlighted the use of customised HRIS in the questions, 17% of the interviewees mentioned the absence of HRIS knowledge and 20% indicated they are not aware of what HRIS is used in healthcare. Thus, “A participant highlighted the un-awareness should be blamed upon the absence of knowledge among the workers on what HRIS is used”. Consequently, 24% and 29% highlighted their knowledge as well as awareness of customised HRIS used in the public healthcare of Western Cape, however, it does not make any difference in terms of influencing the sector performance. “A participant is also of the opinion that only the big healthcare uses HRIS in the country”.

Interview questions were also asked to find out if public healthcare sectors have HR sections, however in Figure 3, a 23% indication of the HR section involving a single individual handling the HR functions manually and remitting documents to a bigger hospital HR. However, 7% indicated the use of outdated HR systems and 14% supported their indication of non-availability of the HR section. These highlights make it clear that the HR section does not exist in several public healthcare. Also, questions on the magnitude of the healthcare were asked to identify reasons for not having an HR section, 29% made it known that they have a huge number of staff members and would need an HR section with HRIS in place. However, a fraction of 4% indicated that the magnitude of healthcare might not be the case, what is important is having an updated HRIS in place. This supports a participant's comment that “HRIS would be better utilised irrespective of the healthcare magnitude.”

Questions on HRIS's security were emphasised in the study, 10% agreed on the presence of security in HRIS and 13% supported by highlighting the use of code words by those with access. However, a further 13% declined the existence of security in HR documents due to the absence of the HR section and deficiency of IS such as HRIS usage. Thus, a participant said, "Using the manual HR functions poses a threat to workforce details." This indicates that using manual HR practices is a security threat to workforce information in healthcare.

Using HRIS in making decisions regarding workforce sustainability was portrayed in the questions, 15% indicated HRIS in public healthcare is not assisting the HR towards making decisions regarding the workforce. Thus, this reaction from participants was credited to a deficiency of system upgrades which calls for attention. Unfortunately, a significant number of participants (18%) did not answer the question because they were not well informed of HRIS performance. In this regard, a participant mentioned: "that the HRIS they use is basically for record storage and not for critical decisions concerning workforce."

4.2. Analysis of Questionnaire Records

In Figure 4, it highlights the analysis of records from the quantitative method:

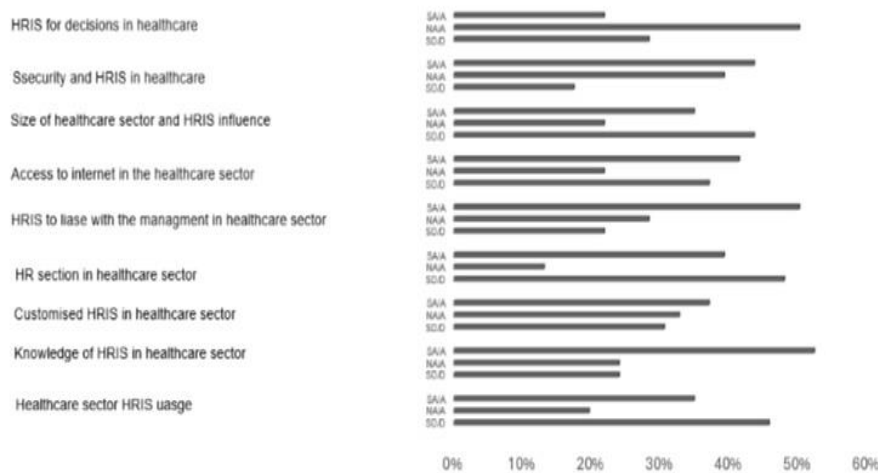


Figure 4. Questionnaire analysis[68]

Figure 4 shows that 22% believe that HRIS is supposed to assist the HR section in making decisions regarding the workforce and it is not happening. Also, other 28% highlighted their disagreement with HRIS in supporting HR section decisions. These responses indicated the absence of HRIS to support the HR section for critical decisions concerning the workforce in the public healthcare sector. However, 50% did not respond to the question. On the issue of security, 43% highlighted the existence of security of workforce information, probably because they never had HR information disseminated wrongly. However, 39% disagreed due to the absence of knowledge of HRIS and 17% supported the disagreement with workforce information security due to manual HR functions in healthcare.

Also, a significant number 35% in Figure 4, gave a positive response that healthcare magnitude could influence HRIS usage, however, a majority (43%) did not agree because they believe the system could be adopted for easy access by the entire workforce through technology infrastructures and upgrades. Unfortunately, 22% did not answer the question. However, with the

technology infrastructure availability in question, 37% disagreed that their healthcare does not allow internet access, and people had to use their data to access the internet. However, 41% did not agree with that, they insisted that they have internet access in their workplace, but do not have access to HRIS. Although, 22% did not answer the question. These responses showed misrepresentation of internet access to HRIS in various healthcare facilities in the country.

Coordinating HR activities was highlighted in the study in Figure 4, 50% as well as 22% indicated HRIS is not used for such functions. Although, 28% did not respond to the question. This is an indication that the HRIS does not assist the healthcare to coordinate and manage their workforce and will require a system for such a function. Similarly, the availability of the HR section was also mentioned in the study, 48% disagreed with the existence of the HR section in their healthcare. People had to visit other bigger healthcare for HR issues. Also, 13% supported the disagreement but made it known that someone handles the HR paperwork manually. The other 39% did not answer the question. Also, the issue of customised HRIS was mentioned, 37% gave a positive remark that the public healthcare sector uses a customised HRIS. However, 30% did not agree probably because they do not have an idea of HRIS and its function. Interestingly, 33% did not respond to the question which is an indication that most of the participants are healthcare workers and not associated with HRIS.

5. DISCUSSIONS

HR information security was identified in the study and HRIS participation in the security of workforce information. Several participants responded to the use of codewords as well as approval from superiors before extracting information from HRIS. However, several other participants did not agree to the security in place on workforce information because several public healthcare centres make use of manual HR practices and not HRIS. In other words, a defect of HRIS influence in healthcare. This study corresponds with Spero et al. [34] the study, which highlights the solidification of the healthcare workforce would require upgraded HRIS to achieve information security, confidence, data quality, and IS capacity.

There is a notion that awareness and knowledge of IS such as HRIS among employees could motivate better initiation, evolution, adoption as well and integration of systems in organisations [62]. In the study, several participants (interviewed and questionnaires), indicated their possession of knowledge and awareness of HRIS and its use in healthcare. Thus, there is an argument that the readiness of organisations to use HRIS is not highly represented among employees in several organisations [63]. However, some other participants maintained they were not aware of HRIS in healthcare. Their responses were blamed for their not having any connection or access to the system, which requires attention in the sector. This is in support of Kitson's [64] the study, which highlights the observation and assessment of the workforce through HRIS would assist in reaffirming the public healthcare sector performance in the country. Also, measures to intensify HRIS awareness through enlightenment strategy.

The influence of HRIS through healthcare magnitude was also highlighted in this study, where several participants who were interviewed, stated that they do not believe that HRIS performance could be influenced by healthcare magnitude. A further indication of an automated system that allows workforce access was missing. Ideally, an effective system would not affect the magnitude of an organisation. Also, most responses from the questionnaires aligned with the above response. Ideally, organisational magnitude, work environment, and the alignment of systems such as HRIS, would assist in transforming organisations [65]. This study supports Udekwe et al. [6], emphasising healthcare magnitude would not impact HRIS influence but rather require transforming the system through upgrades and automation to the latest technology for healthcare workers to access. This will also assist in reducing the workload in HR and other departments.

HR section availability in the healthcare sector was also identified in the study, several participants from both sides indicated the absence of the HR section in their facilities. However, some of the responses indicated the use of someone to collect HR papers in their facility. Ideally, several reasons that impede workforce efficiency are deficiency of HRIS influence, which requires prioritising HRIS for sustainable healthcare [28]. This study corresponds with Maduagwu et al. [24] emphasising that HRIS could influence workforce productivity through the acquisition of HRIS with relevant expertise that workers can access through various technological and reliable avenues.

The influence of HRIS on improving HR functions on decisions that impact the workforce was also highlighted in the study. Several respondents from both methods highlighted their unawareness, and disagreement with the influence of HRIS on workforce decisions on HR matters in the public healthcare sector. This response is attributed to manual functions of HR activities, not being familiar with the system in place, and not embracing the alteration process in the public healthcare sector of countries. This is part of the reasons for not having HRIS influence and discouraging workforce enactment in the sector. This corresponds with Udekwe et al. [66] the study in regards to HRIS influence is required to inspire strategic workforce decisions as considerable in the healthcare sector of developing nations.

5.1. Summary of the Study

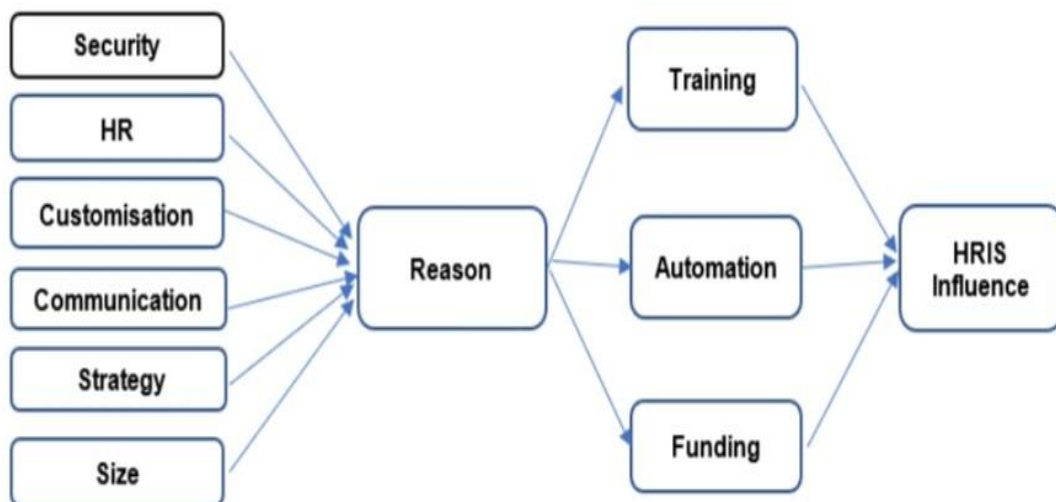


Figure 5. The framework of HRIS influence on healthcare

6. CONCLUSION AND RECOMMENDATION

6.1. Conclusion

HRIS as an important influence in the healthcare sector cannot be ignored. An HRIS could be a significant influence on workforce sustainability in the healthcare sector. The study highlighted several reasons that impede HRIS influence such as the absence of knowledge and awareness, HR section, workforce access, strategic decisions, IT infrastructure, automated systems, sufficient funds, experienced staff, and alteration management structure amongst others. These identified reasons require attention towards effective HRIS influence in healthcare for workforce sustainability. Thus, these will require systems to be technologically automated to measure the

effect in the sector. Also, there is a need for the government to invest highly in systems such as HRIS for strategic purposes as well as training for the workforce to accustom the system.

6.2. Recommendation and Future Research

The issue of awareness and Knowledge of HRIS among healthcare workers was not as expected in the study because most participants did not have access to HRIS and well as not have an idea of what the HR function entails [67], [68]. Also, the fact that public healthcare uses HRIS on administrative tasks and healthcare workers do not have access are reasons that deprive HRIS influence. The recommendation is to educate and train healthcare workers on HRIS, automate the system to enable access and eliminate manual HR functions. Iwu et al. [69], are also of the opinion effective HRIS should be embraced and dismiss the practice of manual HR functions, people need to accept transformation in organisations. A further recommendation is government, healthcare management, and the workforce to embrace novel transformation in the sector.

The existence of information security in HRIS using codewords and approvals from superiors was highlighted as the measures in place in the study [70]–[72]. However, several participants disagreed with existing information security due to manual HR functions in most of the healthcare. Manual functions do not guarantee the security of documents and information in organisations. The study recommends public healthcare sector to upgrade the current HRIS with technological advancement and allow workers access irrespective of HR section existence in the healthcare. This process will give workers confidence in the security of documents in the sector. There is a need for further studies to be conducted to include more hospitals in other provinces of South Africa to identify the relevance and implications of not having an effective HRIS for skilled workforce identification and maintenance in Africa.

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CONFLICT OF INTEREST

The authors do not have any conflict of interest concerning this manuscript.

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