

Public healthcare in Pakistan: a people management solution?

Muhammad Faisal  RMIT University Australia, muhammad.faisal@student.rmit.edu.au

Pauline Stanton RMIT University Australia

Michael Muchiri RMIT University Australia

Pakistan is a developing country under severe pressure to provide efficient and effective healthcare to its population owing to inadequate financial and human resources and limited management capabilities. This study explores the role and practice of human resource management (HRM) in three Pakistani public teaching tertiary hospitals. We interviewed leaders and managers in these hospitals to gain a better understanding of the context, challenges and opportunities for HRM. Our thematic analysis revealed that a lack of specialised human resource (HR) departments staffed by HR professionals in these hospitals negatively impacted HRM functions and practices and created confusion and complexity. This was exacerbated by centralised decision-making at the provincial level and limited managerial autonomy over key HR issues. However, despite the enormous challenges facing the Pakistani public healthcare sector the informants believed that HR could play a significant role in influencing employees' attitudes and behaviours to provide quality healthcare to more patients.

Keywords: attitudes and behaviours, high-performance work systems, Pakistan, public healthcare system

Key points

- 1 There were no specialised HR departments in the three hospitals.
- 2 Some HRM functions and practices were carried out by hospital administrative departments.
- 3 Most were centralised at the provincial level leading to limited autonomy over decision-making.
- 4 HRM practices could influence employees' attitudes and behaviours to provide better quality healthcare to Pakistani patients.

Correspondence: Muhammad Faisal, School of Management, RMIT University, 445 Swanston Street, Melbourne, Vic. 3001, Australia; e-mail: muhammad.faisal@student.rmit.edu.au

Accepted for publication 17 October 2022.

Introduction

Globally, governments face rising healthcare costs due to ageing populations, increasing consumer demand and expectations, and the rapid growth of technology (Bartram et al. 2014; Harris and Sharma 2018; Papanicolas, Woskie and Jha 2018). More efficient and effective management of scarce resources is often seen as a solution to these increasing pressures, with the introduction of high-performance work systems (HPWS) being heralded as leading to improved health outcomes and patient satisfaction through changing attitudes and behaviours of healthcare professionals (Al-Taweel 2021; Bartram et al. 2014; Fan et al. 2014; Ogbonnaya and Valizade 2018). In developing nations, resource challenges are exacerbated by extreme poverty, in some cases, war and terrorism, rural isolation, the widespread existence of preventable diseases, and natural disasters such as earthquakes and floods (Meghani, Sehar and Punjani 2014; Shaikh 2015). In such circumstances, the relevance of western management approaches such as HPWS in public hospitals comes into question.

This paper focuses on Pakistan where it is estimated that 40% of the population lives in multidimensional poverty and <20% of the population has access to public healthcare (United Nations Development Program Pakistan 2016). In 2020, Pakistan spent 1.2% of its GDP on healthcare and lags behind its neighbouring nations on key health indicators such as infant mortality and eradication of polio (Pakistan Economic Survey 2021).

Limited government spending has been identified as one of the root causes of the inefficient public health sector (Khurshid 2010; Meghani, Sehar and Punjani 2014; Sayani and Feroz 2017). However, while the provision of more resources is necessary, their efficient and effective allocation, utilisation and management are essential (Meghani, Sehar and Punjani 2014; Sayani and Feroz 2017). The Government of Pakistan has focused on improving healthcare service access and delivery (Pakistan Economic Survey 2021). There is an emphasis on improving management capabilities, especially human resource management, to address existing poor managerial practices, including lack of strategic planning, inefficiently allocated and coordinated resources and limited use of contemporary HRM practices (Callen et al. 2013; Kurji, Premani and Mithani 2016; Sayani and Feroz 2017). Better planning and management focusing on human resource development (Qidwai 2016; Rabbani et al. 2015), could ultimately lead to health professionals accessing specialised management training (Meghani, Sehar and Punjani 2014). Although HPWS has been studied in other contexts (see, for example, Nadeem, Riaz and Danish 2019), our study set out to understand how a HPWS manifests in the Pakistani healthcare context. Further, we were interested in identifying discernible elements of HPWS as it would allow us to make comparisons in terms of when and how a HPWS impacts employee attitudes and behaviours within the healthcare setting of a developing country. This is in line with recent calls for more research that will help unpack how HR practices influence employee outcomes in Pakistani hospitals (Suhail 2021).

In this paper, we explore HRM practices in three large teaching tertiary hospitals in Lahore, the capital of Punjab. We investigate the extent to which hospital managers use

contemporary HRM practices and unpack some of the challenges and barriers to their adoption. We also use a HPWS lens to explore how HRM practices might influence employee attitudes and behaviours in this context. First, we review the major literature on HPWS and their relevance to healthcare. Second, we outline the challenges in Pakistani public hospitals and explore the relevance of HPWS. Third, we outline our methodology, before presenting our key research findings. Finally, we discuss our findings, identify our theoretical contribution and practical implications and present future research directions. Our overall research questions are how and why can HPWS improve the quality of patient care in Pakistani public hospitals?

High-performance work systems and healthcare

There is increasing evidence that contemporary HRM practices such as HPWS can improve both employee and organisational performance in healthcare (Bartram et al. 2014; Fan et al. 2014; Garman et al. 2011). Research indicates that employees' experiences and perceptions of HRM practices influence their attitudes and behaviours and improve organisational success (Choi 2019). In highlighting the role of HRM practices, a HPWS has been defined as 'a group of separate, but interconnected human resource practices that together recruit, select, develop, motivate and retain employees' (Zacharatos, Barling and Iverson 2005, 79). Within studies in the healthcare sector, a HPWS has been viewed as comprising selective hiring, extensive training, existence of teams and decentralised decision-making, reduced status distinctions, information sharing, contingent compensation, transformational leadership, employment security, and high-quality work (Bartram et al. 2014; Bonias et al. 2010; Zacharatos, Barling and Iverson 2005). These studies demonstrate that the implementation of a HPWS in healthcare settings allows healthcare workers to make positive contributions toward achieving organisational performance (Boselie 2010; Huang, Ma and Meng 2018) – for example, through improving affective commitment and organisational citizenship behaviours (Boselie 2010).

HPWS has largely been studied and examined in western countries, with some emerging research in the Asia Pacific region (Fu et al. 2016; Min, Zhu and Bambacas 2019), but there is limited research on HPWS in Pakistan. There are two reasons for this: first, HRM itself is often not seen as beneficial in organisations (Bhatti and Qureshi 2007; Mahdi et al. 2014), and second, HPWS is not well understood in Pakistan (Mahdi et al. 2014; Mansour, Gara and Gaha 2014; Riaz 2016). However, recent studies have examined HPWS and organisational performance in the Pakistani telecommunications and textile sectors (Koser, Rasool and Samma 2018; Nadeem, Riaz and Danish 2019). In the telecommunication sector, Nadeem, Riaz and Danish (2019) observed a relationship between a HPWS and service performance and found organisational citizenship behaviour was positively linked through the mediating role of employee resilience. Koser, Rasool and Samma (2018) in the textile sector argued that a HPWS can be beneficial by unlocking emerging opportunities through implementing international best practices.

Based on the evidence from these sectors, it is feasible that HPWS could positively impact other sectors in Pakistan. The strength of a HPWS approach is its links to attitudes

and behaviours. Consequently, there is an opportunity to investigate if and how a HPWS manifests in the healthcare sector in Pakistan and explore its potential. However, this can only be understood by placing a HPWS in hospitals within a wider institutional framework that includes public health structures and policy frameworks.

Public healthcare in Pakistan

The healthcare system in Pakistan is comprised of both public and private health facilities. Public healthcare facilities include a widespread network of basic health units, dispensaries, rural health centres, district and sub-district hospitals, tertiary hospitals, and teaching tertiary hospitals (Pakistan Bureau of Statistics 2022). In general, tertiary hospitals have not been able to meet public demand for healthcare needs due to the scarcity of resources and a rapidly growing population (Malik and Bhutta 2018). City hospitals face the additional burden of accepting patients from distant regional areas. Consequently, they are overburdened and face a severe shortage of financial and human resources. In 2010, the management of public hospitals and other government health facilities was devolved to the provinces (Government of Pakistan 2022) allowing greater autonomy (Mazhar and Shaikh 2016). This has provided an opportunity for provinces to introduce reforms and prioritise health policies to improve healthcare (Mazhar and Shaikh 2016; Sarfraz and Hamid 2016). However, these reforms have faced significant challenges as provincial health departments are beset with numerous problems such as structural fragmentation, scarcity of resources, inadequate managerial capacity and a lack of functional specificity (Nishtar et al. 2013; World Health Organization 2016).

Clearly, against this background, introducing a HPWS into Pakistani hospitals faces a number of challenges. First, there are a range of basic HRM challenges in tertiary hospitals including poor recruitment processes, lack of training opportunities, limited career and promotion opportunities, unattractive salary packages and poor supervision (Abdullah et al. 2014; Government of the Punjab 2012; Jooma, Khan and Khan 2012; Kurji, Premani and Mithani 2016; Sayani and Feroz 2017). These challenges are further exacerbated by a chronic shortage and limited capabilities of health professionals (World Health Organization 2010, 2021).

Second, at the hospital level, recruitment is a problem because of the centralised provincial administrative control over appointments and postings (World Health Organization 2017) leading to delayed recruitment on vacant positions, and creating further problems for already overstretched hospitals (Callen et al. 2013). Third, salary levels are a source of tension between health professionals and management and many clinicians also work in the private sector (Jooma, Khan and Khan 2012). As a result, employees often give priority to their private work and this can compromise their work for the public sector (Government of the Punjab 2012), often resulting in absenteeism (Callen et al. 2013).

Fourth, another significant HRM challenge is the ineffective and outdated performance appraisal mechanism. Although performance appraisal is carried out annually (Suhail 2021), it is often subjective in nature (Lalani, Soomro and Jhtial 2013). Promotion criteria are based on seniority, not performance, and the promotion process is criticised as

being slow (World Health Organisation 2017). Furthermore, there are no mechanisms to reward outstanding employees in the form of special increments. Hence, performance assessment in public healthcare does not encourage or provide any potential benefits from extra effort (Lalani, Soomro and Jhtial 2013).

Finally, research on attitudes and behaviours in Pakistani public sector organisations has identified a range of concerns. For example, studies have found that 82% of public sector employees frequently arrive late to work, 90% have long lunch breaks, and 66% leave the office early (Bashir et al. 2012; Khan, Quratulain and Crawshaw 2013). Evidence suggests that workplace non-compliance results in poor employee and consequently organisational performance (Nasir and Bashir 2012). A study on public sector employees in Pakistan also identified an underlying frustration based on issues of lack of merit regarding the allocation and distribution of rewards, weak accountability systems, and political influence leading to inefficiency, disengagement by employees and even corruption (Shaheen, Bashir and Khan 2017). The authors argue that Pakistan's collectivist society makes it vulnerable to favouritism and nepotism of friends, family and other networks as well as the influence of seniors, politicians, or bureaucrats, which undermines merit (Shaheen, Bashir and Khan 2017).

We argue that in this context, HPWS is relevant in that it links HRM practices to attitudes and behaviours. We know that scholars have found that a HPWS has been shown to influence employees' positive attitudes and behaviours (Jiang and Messersmith 2018; Jiang, Wang and Zhao 2012; Messersmith et al. 2011). The argument is that encouraging desired attitudes and behaviours in organisations in itself leads to improved organisational performance. In healthcare, this is often captured in a range of ways – from patient satisfaction to patient mortality and quality care (Bartram et al. 2014; Bonias et al. 2010; Powell et al. 2014).

Considering the challenges facing even basic HRM practices in Pakistani hospitals we explore the potential of a HPWS to improve the quality of patient care in Pakistani public hospitals by asking why, if and how such practices might help shape attitudes and behaviours in the labour-intensive, highly educated but resource-starved Pakistani healthcare sector.

Methodology

We carried out a qualitative study of three public teaching tertiary hospitals in Lahore, drawing on interviews with key leaders in the hospitals and the collection of background documentation. This was the first stage of a bigger project that canvassed the views of employees through a survey. Qualitative methods are valuable in the exploratory phase when an in-depth, rich and detailed inquiry is required (Creswell and Creswell 2018; Honig 2019). For example, we knew little about the HRM structure, processes and practices in these hospitals or the key HRM challenges at the workplace level. Semi-structured interviews were conducted through a purposive sample of 31 key informants to better understand the HRM context, their understandings of HRM, their perceptions of major

challenges and their insights on how those challenges could be addressed. These informants included medical and nursing superintendents, middle-level clinical managers, and leaders from employee unions and professional associations. Interviewees were invited due to the nature of the role and their understanding and experience of HRM practices in the hospital. Our purposive sample also included an element of snowballing where we asked interviewees to recommend others with in-depth knowledge (Atkinson and Flint 2001; Naderifar, Goli and Ghaljaie 2017). The interviews were carried out between June and September 2018 by a researcher fluent in Urdu and English. We also reviewed reports, websites, and carried out personal observations. We did not speak about HPWS in our interviews; instead, our interview questions explored basic HRM functions as well as teamwork, information sharing, attitudes and behaviours underpinned by the HPWS theoretical framework developed by Zacharatos, Barling and Iverson (2005) and applied in healthcare by Bartram et al. (2014). The data were analysed using thematic analysis (Boyatzis 1998) based on these key concepts and coded in NVivo. This thematic analysis identified key issues that cast light on the value of the HPWS theoretical framework. Below, we describe the context for the three case studies where data were gathered.

The case studies

Case 1: Peace Hospital opened in 1994 with 1000 beds and in 2005 became a tertiary teaching hospital. By June 2018, the hospital had 1500 beds and 40 departments of different specialities. As a teaching tertiary care hospital, it has a medical college attached. Hospital statistics for 2018 show that on average Peace Hospital treated 95 000 outpatients per month with a daily bed occupancy rate of 94% (Hospital Documentation).

Case 2: Hope Hospital is the oldest and largest hospital in the country, established in 1871. By 2018 it had expanded to 2499 beds with the addition of a new state-of-the-art 'Model Tower'. The hospital has over 70 departments. On average, in 2018, the hospital received 120 031 patients per month with a bed occupancy rate of 131%. Hope Hospital provides services not only to the citizens of Lahore and Punjab but also from all over Pakistan. This hospital is a tertiary teaching hospital affiliated with a prestigious medical university (Hospital Documentation).

Case 3: Care Hospital was founded in 1958 focusing on providing services to government employees. Over the decades, it has consistently extended its capacity and associations with different medical colleges. At present, it is a fully functional and independent tertiary teaching hospital treating both government employees as well as the general public. It comprises 1196 beds with more than 25 departments (Hospital documentation).

In total, 10 people were interviewed at Peace Hospital, 12 people at Hope Hospital and 9 people at Care Hospital (see Table 1). Having discussed the research methodology, we proceed with presenting the key themes emerging from the data in the next section.

Table 1 Profile of key informants

Designation code	Role in the hospital	Profession			Gender		
		Peace Hospital	Hope Hospital	Care Hospital	Peace Hospital	Hope Hospital	Care Hospital
MS	Overall head of the hospital	Doctor	Doctor	Not available	Male	Male	–
AMS	Assist MS in administrative work	Doctor	Doctor	Doctor	Male	Male	Male
DMS	Assist MS and AMS in their work	Doctor	Doctor	Doctor	Male	Male	Male
CNS	Nursing head of the hospital	Nurse	Nurse	Nurse	Female	Female	Female
NS	Second to head of nursing	Vacant	Nurse	Vacant	–	Female	–
DNS	Assist the Nursing Superintendent	Nurse	Nurse	Nurse	Female	Female	Female
HOQ	Head of Quality Department	Does not exist	PhD	Does not exist	–	Male	–
Clinical HOD	Head of the department/unit	Doctor	Doctor	Doctor	Male	Male	Female
HN	Nurse Manager/Head Nurse	Nurse	Nurse	Nurse	Female	Female	Female
YDA	Young (Junior) Doctors Association	Doctor	Doctor	Doctor	Male	Male	Male
YNA	Young (Junior) Nursing Association	Nurse	Nurse	Nurse	Female	Female	Female
Paramedics	President of the Paramedics union	Other	Other	Other	Male	Male	Male

MS = Medical Superintendent; CNS = Chief Nursing Superintendent; HOD = Head of the clinical Department/Ward; AMS = Additional Medical Superintendent; NS = Nursing Superintendent; HN = Head Nurse; DMS = Deputy Medical Superintendent; DNS = Deputy Nursing Superintendent; HOQ = Head of Quality Department.

Research findings

Lack of a specialised HRM department

There was no specialised HRM department in the hospitals. The Medical Superintendents had responsibility for the day-to-day management and operational decisions supported by Additional Medical Superintendents and Deputy Medical Superintendents. Nurses reported directly, through head nurses, to the Chief Nursing Superintendent supported by a Nursing Superintendent and a Deputy Nursing Superintendent. The nursing departments in each hospital were responsible for functions such as duty rosters, leave, training, nurse transfers and supervision. Many HRM functions and practices were centralised and carried out at the provincial level; for example, overall workforce planning and resourcing was a provincial responsibility. Interviewees highlighted that some HR functions such as recruitment, training, performance appraisal, promotion, transfer and posting were carried out by the hospitals' administrative departments but within centralised frameworks. These departments did not contain HR professionals; instead, they were staffed by general administrative personnel or clinicians. Interviewees claimed that this was common in healthcare in the province and not just specific to their hospital. They felt that this situation contributed to poor HR performance. As the MS of Peace Hospital stated:

It's [HRM] very poor; in the whole province of Punjab, not only in health but in almost all departments. No proper HRM department is available, no guidelines.

He argued that there was also a lack of understanding of the role of HRM and often suspicion of why anyone with a clinical background would work in HRM. He outlined some underlying perceptions about hospital administration in general and HRM in particular:

There are two major things. First, no one wants to join human resource management because this is a thankless job. They prefer to do clinical work, where they earn big and get prayers from patients or in other words return and reward. Second, those who want to join human resource management want to do corruption. This is a general perception. If a doctor is leaving a clinical job and joining human resource management/ administration, there must be some secret motives.

However, most of the interviewees recognised the need for a specialised and autonomous HR department and well-trained HR professionals to carry out the role. They felt that HR professionals could introduce better policies and take effective measures to ensure improved utilisation of available human resources. The DMS of Peace Hospital believed that the establishment of an HR department in the hospital was essential. He stated:

Human resource management is an integral part of any department, not only the hospital. Any department or any institute could not be run without the HR department.

The AMS at Care Hospital believed that HR professionals have a 'broader vision' than clinicians and that clinicians should focus on their professional roles. The head of the recently established Quality Improvement (QI) Department in Hope Hospital agreed:

Physicians and surgeons are best in their own profession, but I think they are not fit for administration and management because they are not qualified for this role, they have not learnt about the management of all the human resources and all the non-human resources in an optimum way.

He was optimistic that, eventually, the role of HR would become prominent in public hospitals in Pakistan claiming:

Human resource is the main capital asset of any organisation. The performance of human resources directly has a significant impact on the performance of the organisation. If the performance of the employees is excellent, the performance of an organisation will also be excellent, and the organisation will be in an excellent phase.

Lack of hospital autonomy over HRM functions

The lack of autonomy from the provincial government over decision-making was highlighted by a number of key informants. They stated that due to the centralised policies, the provincial government hospitals do not have decision-making authority for a range of basic HRM functions. They argued that this situation led to significant delays in decision-making, which created uncertainties and frustrations for an already over-burdened workforce and its leaders.

Hospital leaders recognised the challenges of shortages of medical professionals and nurses; however, these leaders also identified poor workforce planning in the ministry, which often led to a surplus of doctors and nurses in some specialities and a shortage in others. Senior nurses believed that the centralised recruitment and selection process for nurses was merit-based and transparent but slow. The interviewees had a different view when it came to the appointment of junior doctors, which was carried out at the local level. They saw unfairness in many of the decisions made and identified examples of nepotism where people used their networks and connections with influential people within the government and beyond, such as politicians and members of the media, to achieve their goals. The AMS in Hope Hospital claimed that during the recruitment process the hospital leadership is often put under pressure by politicians to recruit their people. He claimed:

The hiring and firing process can be done here too [at the hospital level] but with certain limits. . . . the government makes the policy we can just follow it. But as a challenge, we also face political pressure during recruitment. So due to these issues, we are unable to practice good HRM practices and compromise on many things.

The informants felt that these external influences undermined accountability mechanisms and believed that unsuitable people were often appointed, even for key leadership roles. Interviewees stated that these people were sometimes incompetent. Also, many

appointments were made based on medical knowledge and experience rather than the ability to carry out the given role, particularly for managerial positions.

In some cases, decisions led to corruption; for example, the paramedics union official at Care Hospital argued:

The real problem lies with the administration – it was too lazy at the time of the previous government. The administrators were promoted out of turn. They appointed people of their own choice and not on merit. Now, when you put a senior person behind and make a junior the boss, how would the administration work? That junior will now do as the government pleases ... even if he is given an illegal task.

Overall, the interviewees believed that collectively, all these challenges make the HR function at the hospital level very weak.

Complexity, confusion and lack of clarity in practices

The interviewees believed that the lack of clarity in roles and responsibilities – due to the lack of job descriptions, heavy workloads, issues in information sharing and communication and status differentials between doctors and nurses – caused resentment and undermined teamwork. Most of the interviewees in managerial roles identified problems with teamwork. They spoke about the variation in teamwork between doctors and nurses in the different units, arguing that in many units there were tensions between doctors and nurses and sometimes even open conflict. The MS of Hope Hospital argued that this was largely due to the nature of the team members:

It is such a big hospital; there will remain challenges. Staff nurses have their own fights and quarrels among themselves as well as with doctors and paramedics. Doctors have issues with paramedics too.

The AMS in Hope Hospital also identified problems between doctors and nurses. He stated:

Yes, there are problems because they have different educational levels and different social statuses. To some extent, there is a superiority and inferiority complex affecting attitudes and behaviours because the doctor considers him/herself to be the team leader and as a matter of fact, is the team leader.

Several interviewees identified a generation gap, arguing that younger doctors and nurses often did not abide by established work etiquette and sometimes disrespected their seniors. This was particularly the case for doctors when senior nurses tried to educate them on clinical matters. The DNS of Hope Hospital identified non-cooperation between doctors and nurses more generally and the CNS of Hope Hospital considered that a lack of communication and information sharing was one of the reasons for low-performing teams. She claimed that it is the responsibility of individuals to overcome their communication gaps.

At the department level, the head nurse in Hope Hospital experienced a good teamwork environment but identified little cooperation among different departments. She claimed:

We, among our nurses, are cooperative with each other, but outside of our circle, we do not have enough support. We have built our own team of nurses, doctors and paramedics in ICU, so we are working as a team.

Some informants believed that as a leader it was their responsibility to address issues of teamwork and professional behaviour. For example, one informant stated that good teamwork comes down to the quality of the leader. He believed that subordinates willingly followed the rules and guidelines if led by the clinical head of the department with the right personality. Another informant gave an example of how she worked on building her rapport with her cohort and the department by removing status differences to better communicate and resolve issues. She believed that leaders should focus on developing a culture of respect. At Care Hospital the clinical department head stated:

There is a big room for improvement in terms of teamwork. More workshops should be conducted to highlight the importance of teamwork.

However, the MS in Hope Hospital argued that poor teamwork was also an issue at the senior level, as senior managers often did not take responsibility. He argued:

No one here is ready to take responsibility for anything here. Even my AMS . . . is working on the night shift, and he calls me at 2 am to tell me that the anaesthesia machine in the emergency department has stopped working. What should I do? So, would not I get mad at him? But the issue is that he called me because he does not want to share the responsibility as he thinks that telling me and keeping me informed means he has done his job.

This lack of responsibility led to a wider concern in relation to the decentralisation of decision-making. Some informants argued that decentralisation of decision-making was essential to bring improvements to the healthcare system. They argued that decentralisation will not only avoid unnecessary delays for approval of various matters from the Ministry of Health but will also put greater responsibility for decisions. The AMS in Hope Hospital argued that:

Decentralisation of power is important because it is such a big hospital, you cannot take all the decisions of the hospital yourself. So, you should empower your team to make their own decisions. They should take you in confidence when it matters, but they should make their decisions themselves and should report back on the progress.

The demand for decentralisation was stronger from the medical interviewees rather than the nurses. The doctors, from both senior and middle management positions in all three hospitals, held strong views regarding the importance of decentralisation of power and decision-making on a range of issues. These included recruitment and selection processes, performance appraisals, promotion processes and salary packages, and

involvement in policy-making. Overall, interviewees described a lack of clarity over roles and responsibilities as well as confusion and complexity in the system undermining good HRM practices.

Impact on attitudes and behaviours

The attitudes and behaviours of health professionals were identified as extremely important by all informants. Some spoke positively about employee commitment, suggesting that even leaders with the right kind of skills, knowledge and expertise would not be successful in their roles if they were not committed to the organisation. Others suggested that non-committed employees could undermine the commitment of loyal employees who eventually become frustrated working in a difficult environment, which affected their performance over time. For example, a senior nurse at Peace Hospital stated:

There are only two types of employees: committed – willing to work – and non-committed – not willing to work . . . the one who is doing his/her job is disheartened by doing work of non-committed colleagues and eventually gets frustrated.

Some interviewees thought that there was a wider issue related to a deterioration in ethics and moral values, which had led to a decline in behaviours. They believed that adequate measures and protocols needed to be developed and implemented to control these sorts of behaviours. They expressed concern that doctors and nurses often behaved badly and were angry and rude to patients, whereas they also recognised that positive attitudes and behaviours of front-line doctors and nurses could have a positive impact on patient care. However, the clinical departmental head of Peace Hospital noted that his hospital struggled to motivate staff for improved performance as there were few rewards and few sanctions at the manager's disposal. The head of the QI department at Hope Hospital also agreed that limited power over hiring, firing and performance had led to poor attitudes and behaviours at all levels. He said:

Malpractices, dishonesty, cheating behaviour is dominating aspect amongst employees of this organisation. This is prevalent across all levels in the hospital starting from top management to middle, first-line management and front-line employees.

According to other interviewees, attitudes like lack of commitment, rudeness, dishonesty, and a lack of respect appeared to be common in the hospitals, even among the leaders. The MS of Peace Hospital claimed that these attitudes and behaviours negatively affect hospital performance and a senior nursing manager in Peace Hospital stated:

Mostly, they [unsuccessful leaders] have a lack of commitment. They don't like to work . . . they are not committed and not honest with their jobs.

Overall, the interviewees highlighted that both positive and problematic attitudes and behaviours were prevalent in the hospital by both managers and employees. Despite the contextual challenges that they faced, they felt that leaders could play a role in providing a better workplace experience to build employee commitment and develop positive

behaviours, which led to better patient care. For example, in Care Hospital the clinical departmental head claimed:

I always try my best to put extra effort to resolve my department's issues because my department has specialised needs. This department has high-risk patients and hence, need to be treated with the utmost care.

Impact on quality of care

Many interviewees expressed concern about the quality of care, in particular how poor attitudes and behaviours of health professionals in the hospital could impact their patients. A DNS at Peace Hospital claimed:

It is [attitude], I believe, very important in our medical professionals where our words have a deep influence. For instance, if I behave badly with a staff member, she will take her anger out on someone else. I strongly suggest that we need to work on our behaviours. Sometimes, people do complain that nurses' and doctors' attitudes are not friendly.

Many of the informants argued that it is the responsibility of honest and competent leaders to promote positive attitudes and behaviours in the hospital due to their impact on other employees as well as patients. Some informants spoke about promoting a culture of respect and love. For example, DNS at Peace Hospital claimed that she had seen improvement in the performance and behaviours of her staff simply by treating them with respect. A clinical departmental head of Peace Hospital stated:

Respect needs to be earned through your hard work, truthfulness and righteousness.

The MS of Peace Hospital also spoke about creating an environment where people can feel happy. One interviewee saw her calling as a sacrifice:

Our behaviours and talk should be polite and soft. We must also have the courage to sacrifice our personal benefits and do our duty for our patients. That is the reason we do work for 24–36 hours in case of an emergency.

Almost all the nurse leaders in Peace Hospital spoke about patient care. They claimed that there was evidence that sometimes patient care is compromised due to limited resources in terms of medicines and equipment, as well as overburdened staff and unnecessary job responsibilities. Despite that, there was an emphasis on patient care as a core focus area. For example, a nurse from senior management stated:

We do endorse that [to junior employees] patient is your number one priority; other stuff comes later. Drinking tea or having a meal is not important when it comes to patients' calls. If something happened to patients during that time, we won't be able to forgive ourselves . . . we also tell our nurses that we are here for these patients and that is our source of livelihood; we have to do justice with it.

In the same vein, the NS acknowledged that they need to further improve patient care. Collectively, all the leaders put forward some suggestions to improve better patient

quality. This included patient load management, improved referral systems, greater availability of medicines and equipment and more effective utilisation of basic healthcare.

In Hope Hospital many of the interviewees highlighted a number of its unique aspects and its important role. For example, the MS of Hope Hospital claimed that the staff take pride in their clinical and technical expertise based on the fact of a high number of referrals across the country and being the last hope for many patients. He explained that through the introduction of the Model Tower, Hope Hospital has focused on client satisfaction, hospital culture and behavioural change from employees toward patients. Hospital documentation claimed that Hope Hospital was 'where patients and their attendants are granted the status of guests' and the QI Department focused on training to ensure that patients were treated respectfully. The MS of Hope Hospital believed that the best nurses and doctors wished to join the staff at his hospital due to its increasingly positive reputation.

However, some staff in Hope Hospital identified challenges about patient care, particularly those who had either worked overseas or in a private healthcare setting. For example, a head nurse at Hope Hospital, who had previously worked in a private health facility in Lahore, shared her disappointment over the lack of medical supplies. The NS, also from Hope Hospital, shared her concerns about the high patient numbers in the hospital.

Despite these shortcomings, many of the interviewees, particularly from senior leadership, praised the performance of their hospital in being able to treat patients beyond their manpower and capacity. The DMS in Care Hospital stated:

Our primary focus in this institution and this environment is that we should facilitate the patient to their maximum extent.

However, all interviewees acknowledged the significant pressures the hospitals faced to deliver this performance. The DMS of Care Hospital spoke positively about the role that HRM could play in improving patient care.

Through good HRM, we can improve the quality of patient care. We can get more efficient working in this hospital.

Discussion

We explored HRM challenges in three large teaching tertiary hospitals in Lahore, as we tried to understand the extent to which hospital managers used contemporary HRM practices such as HPWS, while also unpacking some of the challenges and barriers to the adoption of such practices. Our study found five key issues: a lack of a specialist HRM department in the hospitals, a lack of hospital autonomy over decision making, a lack of clarity, confusion and complexity of practices, the important role played by employees' attitudes and behaviours, and the importance of the quality of patient care.

We discuss five key findings in relation to the literature. First, as in past studies, we found evidence of the challenges facing HRM in the Pakistani public healthcare sector. These included a lack of resources, staff shortages, and the lack of autonomy at the local

level (Jafree et al. 2021; Pakistan Economic Survey 2021; Sayani and Feroz 2017; Suhail 2021). Uniquely, our findings demonstrate that despite moves to decentralisation of autonomy in the Province of Punjab, many HRM functions are still very heavily centralised. Second, we found both a lack of HRM capability at the hospital level as well as suspicion toward those who carry out elements of the HRM function. Not only was there no formalised HRM department but there were no HR professionals employed. However, our interviewees were positive about the potential for a professionalised, decentralised HRM function to bring improvements in the performance of their hospital. So, while we found limited contemporary HRM practices in operation we found that the adoption of such practices was seen to be relevant and potentially valuable.

Third, in relation to HPWS, the extant literature proposes that they are successful due to the nature of the 'bundles of practices' working together, driving toward the same goals and rewarding the 'right' attitudes and behaviours (Al-Taweel 2021; Messersmith et al. 2011; Takeuchi and Takeuchi 2013). Unfortunately, in our study, the lack of a professionalised, decentralised HRM structure led to a lack of clarity of roles and responsibilities, the conflict between teams and professionals, a lack of autonomy over decision-making and unlinked rewards and punishments. We found no evidence of HPWS, but we did identify the potential value of many of the elements, for example, improvements in information sharing and communication, participation in decision-making, clear performance and reward processes and the importance of teamwork.

Fourth, the attitudes and behaviours described by our interviewees in this study reflect the empirical evidence of challenges faced by the public sector in Pakistan and the importance of understanding the wider context. There was evidence of poor performance being rewarded, and unethical behaviours such as nepotism, favouritism and even corruption that the literature says are common in the Pakistani public sector (Nasir and Bashir 2012; Shaheen, Bashir and Khan 2017). Weak accountability systems and unfair distribution of rewards also led to conflict, rudeness and abusive behaviours. However, the informants were able to identify potential solutions such as the recruitment of leaders with management knowledge and experience into senior positions. They also argued for clear roles and responsibilities, written information and communication, and clear systems of accountability as well as decentralised decision-making and ownership and responsibility of these decisions.

Finally, the importance of quality of patient care was raised by almost all informants. The importance of focusing on patient outcomes was central to the health professionals in this study, both doctors and nurses. The strategy of Hope Hospital in building the Model Tower was to showcase the quality of care and attract government support and funding. This focus on the quality of care and the belief that improving the management of human resources in the hospital would lead to improvements in the quality of care is in line with previous studies. Bonias et al. (2010), Callen et al. (2013) and Khurshid (2010) all argue that investing in effective HRM practices can improve hospital performance in terms of efficiency and effectiveness and can lead to a better quality of care for more people.

Theoretical contribution

This study provides an important contribution to the field of HPWS within public healthcare in a non-western and developing country context, Pakistan. Theoretically, our qualitative study extends the field by providing an in-depth understanding of the current and potential role of HRM in a developing country context, where the importance of resources and management skills can be understood close to the reality based on the insights from people managing and dealing with those situations. We thus contribute to the debate relating to how a HPWS manifests in the Pakistani healthcare sector and the institutional context, thus helping to clarify feasible ways in which a HPWS impacts employees' attitudes and behaviours in the healthcare settings. Consequently, our study provides a solid foundation for future health-sector studies exploring the dynamics, challenges and opportunities for the health system in Pakistan and other developing countries.

Practical implications

The study also offers practical insights to the managers, leaders, and policy-makers at the hospital level and provincial levels based on the insights of the key informants. The provincial government needs to further decentralise the system and give more authority and decision-making power to the leaders and managers at the hospital level. The government also needs to recruit more people to minimise the shortage of staff, hire specialised HR professionals and train clinical managers to lead their departments and hospitals. HR professionals could mitigate a number of challenges such as lack of job clarity, roles and descriptions. However, HR professionals would need to have recognition of their important role and the necessary authority supported by the senior leadership of the hospitals. Furthermore, the government would have more confidence to give greater autonomy to the hospitals, and thus through collective efforts both the government, hospital leaders and managers would be more able to create a positive workplace environment for health professionals. After experiencing a positive workplace environment, management could further influence employees' attitudes and behaviours, resulting in improved quality care and service to the greater number of patients.

In conclusion, we found the lack of specialised HR hospital departments staffed by HR professionals negatively impacted HRM functions and practices and created confusion and complexity. This was exacerbated by limited managerial autonomy in decision-making over key HR issues. However, despite the major challenges facing the Pakistani public health sector, hospital managers and leaders believed that HR could play a significant role in influencing employees' attitudes and behaviours to provide quality healthcare to more patients.

Limitations and directions for future research

For this study, the data were collected from only three public teaching tertiary care hospitals and focused only on the views of leaders and managers in those hospitals. Future

studies could employ quantitative methods to capture the views of employees within the same or similar Pakistani public hospitals. Studies could also capture the views of public officials on the policy implications emerging from this study.

Funding statement

There was no funding provided for this research.

Conflict of interest

There was no conflict of interest.

Ethics approval statement

The research was approved by the RMIT Human Research Ethics Committee (HREC) no. 21458.

Data availability statement

The relevant data could be provided on request.

Acknowledgement

Open access publishing facilitated by RMIT University, as part of the Wiley - RMIT University agreement via the Council of Australian University Librarians.

Muhammad Faisal is a PhD candidate in the School of Management, RMIT University, Australia. His research interests are human resource management, ethical leadership, attitudes and behaviours, and health care leadership and management. He has taught a course on leadership and decision-making at RMIT University, Australia, and was a research assistant at Monash University, Australia.

Pauline Stanton (PhD) is an honorary professor of management at RMIT University in Melbourne, Australia and co-editor of *Personnel Review*. Her research interests include human resource management in healthcare, employee voice and performance management. She has published widely in journals such as *International Journal of Human Resource Management*, *Human Resource Management Journal*, *Asia Pacific Journal of Human Resources*, *British Journal of International Relations* and *Journal of International Relations*.

Michael Muchiri (PhD) is a senior lecturer in the School of Management, RMIT University, Australia. Michael's research interests are in leadership and positive organisational behaviour (including thriving). Michael's research has been published in journals such as the *Journal of Organisational Behaviour*, *Journal of Business Ethics* and *Journal of Organisational and Occupational Psychology*.

References

- Abdullah M, F Mukhtar, S Wazir, I Gilani, Z Gorar and B Shaikh (2014) The health workforce crisis in Pakistan: a critical review and the way forward. *World Health & Population* 15(3), 4–12.
- Al-Taweel IR (2021) Impact of high-performance work practices in human resource management of health dispensaries in Qassim Region, Kingdom of Saudi Arabia, towards organizational resilience and productivity. *Business Process Management Journal* 27(7), 2088–2109.
- Atkinson R and J Flint (2001) Accessing hidden and hard-to-reach populations: snowball research strategies. *Social Research Update* 33(1), 1–4.
- Bartram T, L Karimi, SG Leggat and P Stanton (2014) Social identification: linking high-performance work systems, psychological empowerment and patient care. *The International Journal of Human Resource Management* 25(17), 2401–2419.
- Bashir S, M Nasir, S Qayyum and A Bashir (2012) Dimensionality of counterproductive work behaviors in public sector organizations of Pakistan. *Public Organization Review* 12(4), 357–366.
- Bhatti KK and TM Qureshi (2007) Impact of employee participation on job satisfaction, employee commitment and employee productivity. *International Review of Business Research Papers* 3(2), 54–68.
- Bonias D, T Bartram, SG Leggat and P Stanton (2010) Does psychological empowerment mediate the relationship between high performance work systems and patient care quality in hospitals? *Asia Pacific Journal of Human Resources* 48(3), 319–337.
- Boselie P (2010) High performance work practices in the health care sector: a Dutch case study. *International Journal of Manpower* 31(1), 42–58.
- Boyatzis RE (1998) *Transforming qualitative information: thematic analysis and code development*. Sage Publications, Thousand Oaks, CA.
- Callen M, S Gulzar, A Hasanain, AR Khan, Y Khan and MZ Mehmood (2013) Improving public health delivery in Punjab, Pakistan: Issues and opportunities. *The Lahore Journal of Economics* 18(Special edition), 249–269.
- Choi JH (2019) What one thinks determines one's actions: the importance of employees' perception in implementing HR systems. *Asia Pacific Journal of Human Resources* 57(1), 85–102.
- Creswell JW and JD Creswell (2018) *Research design: qualitative, quantitative & mixed methods approaches*, Fifth edition. International student edition. Sage, Los Angeles, CA.
- Fan D, L Cui, MM Zhang, CJ Zhu, CE Härtel and C Nyland (2014) Influence of high performance work systems on employee subjective well-being and job burnout: empirical evidence from the Chinese healthcare sector. *The International Journal of Human Resource Management* 25(7), 931–950.
- Fu N, Q Ma, PC Flood, J Bosak, Y Liu and Y Zhang (2016) When East meets West: comparing the utilization of high-performance work systems in Chinese and Irish professional service firms. *Asia Pacific Journal of Human Resources* 54(1), 8–31.
- Garman AN, AS McAlearney, MI Harrison, PH Song and M McHugh (2011) High-performance work systems in health care management, part 1: development of an evidence-informed model. *Health Care Management Review* 36(3), 201–213.
- Government of Pakistan (2022) *2017 Provincial Census Report, Punjab* by Punjab Bureau of Statistics. https://www.pbs.gov.pk/sites/default/files//population_census/ncrpr/PCR%20Punjab.pdf.

- Government of the Punjab (2012) *Draft Strategy 2012–2020 Health sector of Punjab*. Punjab Health Sector Reform Program, Government of the Punjab. http://www.phsrp.punjab.gov.pk/healthdept/phsp/Draft_Punjab_Health_Sector_Strategy_final_draft.pdf.
- Harris A and A Sharma (2018) Estimating the future health and aged care expenditure in Australia with changes in morbidity. *PLoS One* 13(8), 1–10. <https://doi.org/10.1371/journal.pone.0201697>
- Honig D (2019) Case study design and analysis as a complementary empirical strategy to econometric analysis in the study of public agencies: deploying mutually supportive mixed methods. *Journal of Public Administration Research and Theory* 29(2), 299–317.
- Huang Y, Z Ma and Y Meng (2018) High-performance work systems and employee engagement: empirical evidence from China. *Asia Pacific Journal of Human Resources* 56(3), 341–359.
- Jafree SR, A u Momina, N Malik, SA Naqi and F Fischer (2021) Challenges in providing surgical procedures during the COVID-19 pandemic: qualitative study among operating department practitioners in Pakistan. *Science Progress* 104(2), 1–29.
- Jiang J, S Wang and S Zhao (2012) Does HRM facilitate employee creativity and organizational innovation? A study of Chinese firms. *The International Journal of Human Resource Management* 23(19), 4025–4047.
- Jiang K and J Messersmith (2018) On the shoulders of giants: a meta-review of strategic human resource management. *The International Journal of Human Resource Management* 29(1), 6–33.
- Jooma R, A Khan and A Khan (2012) Protecting Pakistan's health during the global economic crisis. *Eastern Mediterranean Health Journal* 18(3), 287–293.
- Khan AK, S Quratulain and JR Crawshaw (2013) The mediating role of discrete emotions in the relationship between injustice and counterproductive work behaviors: a study in Pakistan. *Journal of Business and Psychology* 28(1), 49–61.
- Khurshid A (2010) Health care management training needs in Pakistan. *Journal of Health Management* 12(3), 211–229. <https://doi.org/10.1177/097206341001200301>
- Koser M, SF Rasool and M Samma (2018) High performance work system is the accelerator of the best fit and integrated HR-practices to achieve the goal of productivity: a case of textile sector in Pakistan. *Global Management Journal for Academic & Corporate Studies* 8(1), 10–21.
- Kurji Z, ZS Premani and Y Mithani (2016) Analysis of the health care system of Pakistan: lessons learnt and way forward. *Journal of Ayub Medical College Abbottabad* 28(3), 601–604.
- Lalani F, S Soomro and AA Jhtial (2013) Hospital management: a comparative analysis of effective utilization of HRM in selected public and private hospitals of Karachi and Hyderabad, Sindh. *International Research Journal of Arts & Humanities (IRJAH)* 41(41), 187–205.
- Mahdi SM, J Liao, S Muhammad and HM Nader (2014) The impact of high performance work system (HPWS) on employee productivity as related to organizational identity and job engagement. *European Journal of Business and Management* 6(39), 1–24.
- Malik SM and ZA Bhutta (2018) Reform of primary health care in Pakistan. *The Lancet* 392 (10156), 1375–1377. [https://doi.org/10.1016/S0140-6736\(18\)32275-X](https://doi.org/10.1016/S0140-6736(18)32275-X)
- Mansour N, E Gara and C Gaha (2014) Getting inside the black box: HR practices and firm performance within the Tunisian financial services industry. *Personnel Review* 43(4), 490–514.
- Mazhar MA and BT Shaikh (2016) Constitutional reforms in Pakistan: turning around the picture of health sector in Punjab Province. *Journal of Ayub Medical College Abbottabad* 28(2), 386–391.
- Meghani ST, S Sehar and NS Punjani (2014) Comparison and analysis of healthcare delivery system: Pakistan versus China. *International Journal of Endorsing Health Science Research* 2(1), 46–49.

- Messersmith JG, PC Patel, DP Lepak and JS Gould-Williams (2011) Unlocking the black box: exploring the link between high-performance work systems and performance. *Journal of Applied Psychology* 96(6), 1105–1118.
- Min M, Y Zhu and M Bambacas (2019) The mediating effect of trust on the relationship between high-performance work systems and employee outcomes among Chinese indigenous firms. *Asia Pacific Journal of Human Resources* 58(3), 1–28.
- Nadeem K, A Riaz and RQ Danish (2019) Influence of high-performance work system on employee service performance and OCB: the mediating role of resilience. *Journal of Global Entrepreneurship Research* 9(1), 1–13.
- Naderifar M, H Goli and F Ghaljaie (2017) Snowball sampling: a purposeful method of sampling in qualitative research. *Strides in Development of Medical Education* 14(3), 1–4.
- Nasir M and A Bashir (2012) Examining workplace deviance in public sector organizations of Pakistan. *International Journal of Social Economics* 39(4), 240–253.
- Nishtar S, T Boerma, S Amjad, AY Alam, F Khalid, I ul Haq and YA Mirza (2013) Pakistan's health system: performance and prospects after the 18th constitutional amendment. *The Lancet* 381 (9884), 2193–2206.
- Ogbonnaya C and D Valizade (2018) High performance work practices, employee outcomes and organizational performance: a 2-1-2 multilevel mediation analysis. *The International Journal of Human Resource Management* 29(2), 239–259. <https://doi.org/10.1080/09585192.2016.1146320>
- Pakistan Bureau of Statistics (2022) *Table-1 Area, Population by sex ration, Population density, Urban proportion, Household size and annual growth rate*. Pakistan Bureau of Statistics. Retrieved January 09 from https://www.pbs.gov.pk/sites/default/files/population_census/census_2017_tables/pakistan/Table01n.pdf.
- Pakistan Economic Survey (2021) *Pakistan Economic Survey 2020–21*. Finance Division of Government of Pakistan. https://www.finance.gov.pk/survey/chapters_21/PES_2020_21.pdf.
- Papanicolas I, LR Woskie and AK Jha (2018) Health care spending in the United States and other high-income countries. *JAMA* 319(10), 1024–1039. <https://doi.org/10.1001/jama.2018.1150>
- Powell M, J Dawson, A Topakas, J Durose and C Fewtrell (2014) Staff satisfaction and organisational performance: evidence from a longitudinal secondary analysis of the NHS staff survey and outcome data. *Health Services and Delivery Research* 2(50), 1–336. <https://doi.org/10.3310/hsdr02500>
- Qidwai W (2016) Addressing healthcare challenges in Pakistan: issues, possible remedies and way forward. *Journal of Dow University of Health Sciences* 10(2), 41–42.
- Rabbani F, FN Hashmani, AAA Mukhi, X Gul, N Pradhan, P Hatcher, M Farag and F Abbas (2015) Hospital management training for the Eastern Mediterranean region: time for a change? *Journal of Health Organization and Management* 29(7), 965–972.
- Riaz S (2016) High-performance work systems and organizational performance: an empirical study on manufacturing and service organizations in Pakistan. *Public Organization Review* 16(4), 421–442.
- Sarfraz M and S Hamid (2016) Exploring managers' perspectives on MNCH program in Pakistan: a qualitative study. *PLoS One* 11(1), 1–15. <https://doi.org/10.1371/journal.pone.0146665>
- Sayani AH and S Feroz (2017) Comparison of health care delivery systems: Pakistan versus Germany. *i-Manager's Journal on Nursing* 7(1), 23–28.

- Shaheen S, S Bashir and AK Khan (2017) Examining organizational cronyism as an antecedent of workplace deviance in public sector organizations. *Public Personnel Management* 46(3), 308–323.
- Shaikh BT (2015) Private sector in health care delivery: a reality and a challenge in Pakistan. *Journal of Ayub Medical College Abbottabad* 27(2), 496–498.
- Suhail A (2021) *HR autonomy in public hospitals in Pakistan: increased employee outcomes and performance or a myth adopted?* KU Leuven, Leuven, Belgium.
- Takeuchi N and T Takeuchi (2013) Committed to the organization or the job? Effects of perceived HRM practices on employees' behavioral outcomes in the Japanese healthcare industry. *The International Journal of Human Resource Management* 24(11), 2089–2106.
- United Nations Development Program Pakistan (2016) *Multidimensional Poverty in Pakistan*. Ministry of Planning of Government of Pakistan. <https://www.ophi.org.uk/wp-content/uploads/Multidimensional-Poverty-in-Pakistan.pdf>.
- World Health Organization (2010) *The world health report: health systems financing: the path to universal coverage*. https://apps.who.int/iris/bitstream/handle/10665/44371/97892415640-21_eng.pdf?sequence=1.
- World Health Organization (2016) *World health statistics 2016: monitoring health for the SDGs, sustainable development goals*. <https://www.who.int/docs/default-source/gho-documents/world-health-statistic-reports/world-health-statistics-2016.pdf>
- World Health Organisation (2017) *Primary Health Care Systems (PRIMASYS) – Case Study from Pakistan*. https://www.who.int/alliance-hpsr/projects/alliancehpsr_pakistanabridgedprim-asys.pdf
- World Health Organization (2021) *Monitoring health and health system performance in the Eastern Mediterranean Region (2020) – Core indicators and indicators on the health-related Sustainable Development Goals*. WHO. <https://applications.emro.who.int/docs/WHOEMHST246E-eng.pdf?ua=1>
- Zacharatos A, J Barling and RD Iverson (2005) High-performance work systems and occupational safety. *Journal of Applied Psychology* 90(1), 77–93.