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RESEARCH ARTICLE

LEADERSHIP AND MANAGEMENT FOR THE NEW ERA OF PUBLIC HEALTHCARE IN SINGAPORE: A QUALITATIVE STUDY OF SENIOR HEALTHCARE LEADERS

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ABSTRACT

BACKGROUND

Singapore's public healthcare system is undergoing significant transformation through the 'Healthier SG' initiative. Effective leadership is crucial to successfully manage this strategic shift and ensure the continued success of the public healthcare model.

METHODS

A qualitative study was conducted with senior leaders in Singapore's public healthcare sector to identify the key qualities required in future leaders and the necessary environment for nurturing them. In-depth individual interviews (n=46) and online open-ended questionnaires (n=11) were administered, and responses were analysed using thematic analysis.

RESULTS

Four key leadership qualities were identified: (i) systems-based thinking to balance competing priorities across the healthcare system, (ii) a long-term perspective with cross-industry experience to understand health within a broader sociological context, (iii) personal integrity, honesty, and authenticity aligned with public service values, and (iv) strong communication and collaboration skills to foster a shared vision.

The study also highlighted four essential environmental factors to cultivate future leaders: (i) a healthcare system that embraces learning, innovation, and failure as part of growth, (ii) opportunities for cross-functional rotation and networking, (iii) a mature talent management system with robust succession planning and senior leaders as role models, and (iv) a focus on people management and talent potential over seniority in leadership selection.

CONCLUSION

As Singapore transforms its healthcare system with a focus on population health, developing capable leaders is essential for achieving long-term strategic goals. This study provides insights for policymakers, senior healthcare leaders, and HR planners to identify and foster talent, creating an environment where future healthcare leaders can thrive.

KEYWORDS

Management, administration, healthcare leadership, executive development, Singapore, Healthier SG

INTRODUCTION

Singapore's public healthcare system is undergoing major change. The publication of the 2022 'Healthier SG' white paper outlines a strategic shift in the delivery of healthcare in the city state towards population and preventive healthcare. [1] With ageing population, rising chronic disease burden, and high costs of healthcare – the next generation of healthcare leaders must step up and manage the unrelentless developments in medical technology, healthcare delivery platforms, changing patient expectations, and pressures in healthcare financing. [2]

This 2022 white paper seeks to change the public healthcare system via a focus on healthier lifestyle, supporting health and wellbeing needs of the Singapore residents. This is achieved by engaging stakeholders such as residents who are paired with a regular family doctor, mobilising primary care physicians to provide holistic and preventive care, and engaging community partners such as the Health Promotion Board to deliver social prescription to individuals with chronic disease.

Furthermore, the three major healthcare clusters in Singapore – National Healthcare Group (NHG), National University Health System (NUHS), and Singhealth (SHS) – will take on the role of regional health managers to look after the health (not just healthcare) of the populations within their respective regions. [3] System enablers such as IT electronic medical records, health apps such as Healthy 365, and funding model, will also be tailored to match the healthcare system transformation. [4]

FUTURE-FOCUSED QUALITATIVE STUDY

This study seeks to explore the qualities needed amongst future public healthcare sector leaders and managers in Singapore, and the environment required to nurture such leadership qualities within the next generation. Such individuals are envisioned to manage the change in Singapore's public healthcare landscape.

LEADERSHIP AND MANAGEMENT

Leadership and management, while interconnected, differ in both focus and function. Leadership is often defined as the ability to influence and inspire individuals toward a shared vision, emphasising change and innovation. Conversely, management is concerned with planning, organising, and controlling resources to achieve specific organisational objectives, prioritising efficiency and stability. These distinctions highlight the subtle yet significant differences in their roles within organisations. [5]

However, for the purpose of this research, we have opted to focus on the overarching concept of leading people, as the skills and qualities required for leadership in healthcare often blur the lines between management and leadership. Effective healthcare leadership requires not only the ability to manage resources and people but also the vision to guide teams through complex challenges, adapting to evolving healthcare demands. [6]

In this study, we consider management and leadership as complementary and intertwined aspects of effective leadership practice.

METHODS

METHODOLOGY APPLIED FOR QUALITATIVE STUDY

A systematic inductive approach based on 'grounded theory' was adopted to guide this qualitative research, providing a comprehensive framework for understanding the phenomena under study. Grounded theory is a methodological approach that aims to develop a theory that is directly derived from the data itself, rather than imposing preconceived hypotheses or assumptions. This method emphasises the emergent nature of theory development, where patterns, concepts, and themes arise organically from the data through a process of constant comparison and iterative analysis. [7]

The research data collection sought to answer two key research questions:

1. What qualities do we need in Singapore's healthcare leaders of tomorrow, against the backdrop of a changing public healthcare landscape?
2. What environment do we need to nurture in Singapore, to ensure that we build a robust system where public healthcare leadership can thrive?

In line with the research questions, the data collection process was centred around in-depth interviews and written responses from participants. These data collection choices were chosen to ensure that rich, detailed, and diverse perspectives on the leadership qualities and environmental factors in Singapore's public healthcare system could be gathered. The interviews were conducted with individuals in positions of leadership or expertise within Singapore's healthcare system. Subsequently, written responses were used to supplement the interview data, providing further depth and context.

Upon completion of the data collection, the transcripts from the interviews, along with the written responses, were subjected to thematic analysis. Thematic analysis is a method for identifying and analysing patterns (or themes) within qualitative data. This analysis was conducted through an iterative process of coding, where initial themes were identified, refined, and redefined as the analysis progressed. [8]

DESIGNING THE QUESTIONS FOR THE IN-DEPTH INTERVIEW AND ONLINE QUESTIONNAIRE

The interview guide consisted of 8 open-ended questions grouped into two key categories: leadership qualities for navigating a changing public healthcare landscape, and the environment for leadership development in Singapore.

The questions were designed to explore the individual's perceptions and experiences regarding leadership in the evolving healthcare landscape. Additional information collected include gender, affiliated institution, and current leadership position.

To ensure the reliability and relevance of the questionnaire; this was validated by seeking feedback from public health academics and practitioners in Singapore to review the clarity, relevance, and comprehensiveness of the questions. Minor revisions were made based on the feedback to align the questions to the appropriate research study context.

PARTICIPANT SELECTION

A shortlist of senior healthcare leaders from Singapore's public healthcare clusters and Ministry of Health were identified via the online Singapore Government Directory Interactive (SGDI). [9] Individuals who hold the designation of 'Deputy Director' and above were sent an invitation email to schedule a time for the in-depth interview.

These leaders were identified to have an established record of managing teams, departments, or institutions within the public sector – which range from tertiary hospitals, polyclinics, healthcare clusters, regulatory bodies.

Based on the SGDI, a total shortlist of 2,652 individual were noted to have met the criteria across the public healthcare system. Such individuals were sent an invitation email, together with the participant information sheet and consent form on the details of the study. They were invited to schedule a time for an in-depth interview with the researcher to hear their views on the above research questions.

IN-DEPTH INTERVIEWS AND OPEN-ENDED QUESTIONNAIRE FOR DATA COLLECTION

This study sought to obtain views and opinions of existing healthcare leaders, and adopts an open-ended approach to obtain a diversity of responses; either via in-depth interviews or open-ended questionnaires conducted online.
To achieve this – in-depth in-person interviews were conducted with study participants to obtain their responses. A second stage online open-ended questionnaire survey (not in-person) was sent to participants to check for concordance in their responses.

This series of (i) in-depth interviews and (ii) open-ended questionnaires were conducted with public sector healthcare leaders in Singapore between August 2022 to February 2023.

DATA COLLECTION PROCESS

During the collection of data from the in-depth interview, no other individuals were present except for the sole interviewer and interviewee. The interview was conducted at a time and place of convenience with majority being at the participants' workplace.

The interview guide was sent to the participants prior to the start of the interview for their review and preparation. No repeat interviews were carried out. Live audio-recording was ongoing with consent during the in-depth interview. This was to allow for verbatim transcription and coding thereafter.

After data saturation was achieved from the in-depth interviews, other participants took part in an online-based weblink questionnaire with open-ended responses. The questions were similar to the in-depth interviews. This is to check for concurrence or divergence of views.

RECRUITMENT PROCESS AND NUMBER OF PARTICIPANTS

A total of 120 participants replied to the invitation email to request further information and indicate that they were provisionally keen on participating in this study. Seven individuals subsequently dropped out stating that they were not keen to participate in the study. Of the remaining 113 individuals who were keen to participate in the study, scheduling was done to achieve as many individuals as possible to be interviewed.

46 individual in-depth interviews were conducted with the researcher (also the sole interviewer). Data saturation was achieved at this stage, as no new themes emerged during the final stages of in-depth interviews. [10] Thematic analysis revealed consistent patterns across participants, indicating sufficient data collection to address the research questions comprehensively.

Subsequently, the remaining 67 individuals who earlier indicated interest in participating but had not yet scheduled an in-depth interview were instead offered an option for an online-based questionnaire survey based on the same research questions. Participants here had to electronically submit written responses. This second stage was utilised to check for concordance or discordance in responses compared to the in-person interview responses.

11 of the 67 individuals subsequently agreed to participate in the online questionnaire in February 2023. The other 56 individuals did not respond. All 46 interviewees and 11 questionnaire respondents had informed consent obtained. They noted that their responses will be recorded, and deidentified quotes may be published.

Whilst majority of eligible individuals did not indicate a reason for non-participation, some reasons cited include lack of time, or lack of interest.

CODING AND ANALYSIS PROCESS

A total of 46 in-depth interview transcripts and 11 questionnaire responses were analysed and coded thematically. Coding was done manually with no use of any particular coding software as the nuances of Singapore's healthcare system and verbal/written speech patterns/expression allow the coder to appreciate the context more succinctly. The analysis consisted of examining, organising, and coding segments of the interviews.

RESULTS

RESEARCH PARTICIPANTS' PROFILE

A total of 46 in-depth interview transcripts and 11 questionnaire responses were analysed and coded – for a total of 57 unique responses.

Of these, 24 respondents held C-suite appointments. The rest were holding an appointment of 'Deputy Director' and above. There were 36 clinicians versus 21 non-clinician backgrounds. Participants ranged across all 3 major Singapore public healthcare clusters, 7 restructured hospitals, 5 national specialty centres, 3 healthcare-related statutory boards, and the Ministry of Health.

There were few variations in the response themes from different groups – whether it be from their affiliated institutions and organisations or their professional backgrounds.

CONCORDANCE BETWEEN IN-DEPTH INTERVIEWS AND ONLINE QUESTIONNAIRE

Based on the thematic analysis coding, there was strong concordance observed in the thematic responses between participants who engaged in the in-depth interview process and those who completed the online open-ended questionnaire. This consistency suggests that both data collection platforms yielded comparable insights, with no significant differences in the responses.

The findings are organised and presented in Table 1 and Table 2, which highlight the major themes and corresponding sub-themes that emerged in relation to the two key research questions.

Table 1 focuses on the leadership qualities required for future healthcare leaders, while Table 2 examines the environmental factors necessary to nurture effective healthcare leadership.

These tables are further enriched by selected participant quotes and discussion, which aim to provide deeper insights into the thought processes behind the responses and offer a more nuanced understanding of the themes identified.

THEMES IDENTIFIED

TABLE 1: QUALITIES NEEDED IN SINGAPORE'S HEALTHCARE LEADERS OF TOMORROW AGAINST THE BACKDROP OF A CHANGING PUBLIC HEALTHCARE LANDSCAPE

Themes	Sub-themes
A1: Possess individual character and behaviour which is in line with the public service ethos and be a role model for fellow staff.	Integrity, honesty, authenticity.
	Recognising own faults and taking responsibility.
	Being a role model for staff.
	Tenacity and grit managing disappointments.
	Receptiveness and openness to new ideas, with tools for change management.
	Lifelong learning and self-improvement.
	Compassion and viewing healthcare as a higher calling.

A2: Possessing the ability to work with others, via a combination of persuasion skills and people skills to drive projects.	Working with senior and junior staff; and managing laterally.
	Influencing people not just on authority alone.
	Understanding the ground staff.
	Appreciate that success is a team-based effort.
	Having good communication skills.
A3: Possessing strong systems-based thinking by understanding the tensions between organisational priorities versus individual priorities, thus prioritising accordingly.	Appreciating the public health aspects in decision making.
	Prioritisation of medical problems.
	Healthcare issues extend beyond medical problems alone.
	Understanding the financial and IT enablers, and its limitations in healthcare.
	Translating textbook knowledge to real world practice.
A4: Possessing significant foresight and longer term thinking beyond the healthcare system of today, which require cross industry knowledge and experience, but having implementable/realistic goals.	Being visionary and horizon scanning.
	Being a step ahead and preparing team for the next change ahead.
	Managing stakeholders that goes beyond just the healthcare sector.
	Setting operationally feasible targets to achieve results.

A1: Possess individual character and behaviour which is in line with the public service ethos and be a role model for fellow staff

> *"I guess in healthcare, we are dealing with people who find health being personal to them. So that sensitivity and empathy becomes a factor. So unlike a hotel industry, if not enough rooms, then go another hotel. But in healthcare, we cannot turn patients away. So we need to be aware of that." P6*
> ***Quote Box 1***

Participants generally agreed that there was a need for healthcare leaders to possess exemplary character traits which are relevant for the patient population locally. They understand that unlike many other industries, there is a need for compassion and sincerity, and in turn being a role model to their junior staff. The unique nature of the healthcare industry had respondents appreciating that clients who utilise healthcare services are oftentimes not in the optimal state physically or emotionally.

Furthermore, qualities of compassion extend beyond just patients. Leaders must have the courage to speak truth to power and see the larger longer-term projects through. The tension between operational feasibility in many healthcare projects, such as during the COVID-19 pandemic in Singapore required leaders to engage policymakers to explain why certain instructions may not be workable.

"So I think healthcare is a little bit more risk averse than most other industries. I think that that would be one major factor. Anything to do with human health and all that is inherently conservative though." P10

Quote Box 2

Participants understand that healthcare in general, can be risk averse which means that the ability to drive change within the organisation must be in line with the public service objectives within the healthcare industry. The nature of healthcare which demands evidence-based action also reflect how the industry is comparatively less nimble to effect change quickly, and may be slower to market forces. Opinions were divided as to whether this safeguards patient safety or whether this is a reason as to why innovations are being taken up at a slower rate amongst healthcare institutions.

"Authentic as in you know the things you have to do, be sincere about it and not do things because the government says so." P39

Quote Box 3

The participants concurred that one should have compassion for others and for self, and that viewing healthcare as a higher or personal calling will allow them to lead the challenges of the next decade ahead. Many appreciated that the heterogenous nature of many healthcare institutions means that there may not ever be a single oversight in terms of the actions taken by various healthcare teams. This means that larger organisations require leaders who have the individual conviction and personal drive to improve the state of the system, even without the pressure from higher authorities.

A2: Possessing the ability to work with others, via a combination of persuasion skills and people skills to drive projects

"The ability to work with people, persuasion is also very important. You cannot do anything in healthcare by yourself, you need to work through people." P1

Quote Box 4

Respondents further emphasised that leaders should be able to manage staff vertically, horizontally, and laterally. They understand that the ability to delegate effectively and manage the creative tensions amongst staff is important. The need for a wide variety of expertise in order to effect a change or project means that this is not a workstream that any single individual can do alone.

This usually translates to having a close connection with staff on the ground and communicating effectively the sensitivities required to influence individuals not just based on authority alone, but to build trust within the team. Respondents appreciate that methods of communicating such a vision are beyond platitudes and words alone, but deep understanding and appreciation of the needs of the staff under them. They were averse to stylistics and were keener to show determination and consistency via actions as well.

"Healthcare has very strong professional leaders, different professional groups so it is not about signing a directive and everyone will fall in. It is about once again building that collective sense to drive change." P12

Quote Box 5

There is a need for healthcare leaders to build successful relationships to drive efforts, and that a team-based effort amongst the staff will be able to deliver exceptional results better than having a sole driver. The sense of divide amongst the different professional groups was also a possible source of impediment towards teamwork. Examples cited included doctors-only lunches or doctors-only lounges which sought to sharpen the divide within the institution.

A3: Possessing strong systems-based thinking by understanding the tensions between organisational priorities versus individual priorities, thus prioritising accordingly

Participants agreed that healthcare change today cannot be siloed to medical care alone. There needs to be a public health consideration whether it be social costs, financial costs, political costs. This means that there is an element of prioritisation and decision making which needs to occur. The ability to grapple with such dilemma of prioritising whose needs should come first may have to be nuanced further. Individual departments being profitable may lead to worse outcomes for patients or work against hospital-wide strategy.

The theme was well encapsulated within healthcare as trying to balance optimising for the system versus optimising for the individual institution, and this would require leaders to have to prioritise. The social determinants of health were well appreciated by many of the respondents who noted that many of the change which they wish to see in healthcare require change in the public policy sphere beyond the healthcare institutions.

A4: Possessing significant foresight and longer term thinking beyond the healthcare system of today, which require cross industry knowledge and experience, but having implementable/realistic goals

> *"Because you know your stuff, you are very focused on your work. But you also need to be that sensor of the environment. You need to be out there and to feel and see the change, and what you can do about it and translate it to your organisation." P20*
>
> ***Quote Box 6***

Participants agreed that healthcare leaders must have an element of being visionary and seeing beyond the next step , with the ability to horizon scan. They should also be able to anticipate the changes and be a step ahead to prepare their organisation. This sense making requires leaders to be knowledgeable about what is happening not just within healthcare, but other industries as well.

This includes the changes that may be happening in global geopolitics, or political sentiment on the ground on how healthcare should be financed. As healthcare can sometimes be a political issue nationally, the sensitivities to deciding which change is feasible to local Singapore residents must be nuanced further.

> *"So I think that is where you need courageous leadership. To be able to understand what is the big change the world needs to happen in order to enable the change we want to see. So people may look at it as incrementalism and whilst very conservative and safe, also frustrates others. The system is under severe stress and people want to see larger change rather than smaller change." P12*
>
> ***Quote Box 7***

The setting of operationally feasible, realistic, and performance-oriented goals are necessary in the next generation of leaders. Sometimes, such change stem from severe stress within the system, and the change management will require more drastic actions to be taken.

Some respondents agreed that frustration towards pain points within the healthcare system (long waiting times, for instance) requires boldness and clarity to achieve change. They understand the frustration on the end user, and are prepared to demand of their staff ambitious goals to achieve this.

TABLE 2: ENVIRONMENT NEEDED TO BE NURTURED TO ENSURE A ROBUST SYSTEM IN WHICH PUBLIC HEALTHCARE LEADERSHIP CAN THRIVE

Themes	Sub-themes
B1: The public healthcare system should have a more forgiving environment for individuals who make mistakes or attempt to try new ideas, by fostering a learning environment.	Tolerance of failure, moving away from blame culture.
	Encouragement to try new things.
	Less oriented to results only, but being open to ideas and suggestions.
	Building compassion in a system which look out for staff possessing public service ethos.
B2: Providing leaders and leaders-to-be opportunities to rotate across the different clusters, institutions, job scope to allow for broad based understanding, learning, and networking. This can also mean bringing in individuals from beyond healthcare, and giving them the time to train.	Cross employment allows for fostering of trust within the healthcare system.
	Forum to discuss national healthcare issues, such as in healthcare financing.
	Tour of duty in functional roles within healthcare for aspiring leaders.
	Openness to leaders with skills beyond the healthcare sector alone.
	Rewarding leaders who solve the problems of the future, and not just problems of today.
B3: A teaching culture where existing public healthcare leaders are willing to teach and nurture staff, by being open to junior staff taking over their positions at the appropriate timeline.	Mature talent management system.
	Building a robust and systematic leadership succession planning platform.
	Senior staff as role models for junior aspiring leaders.
	Providing sufficient time for staff to train and develop.
B4: Identifying leaders using a combination of not just years of service or clinical experience but thinking of leadership as a series of qualities that one should possess, which will help in talent retention and depth of experience.	Less emphasis on time-in-service when identifying potential leaders.
	Reduce distinction between different healthcare professional groups.
	Less emphasis on leaders wearing many hats, but having the workload be shared amongst various staff.
	Widen the pool of successors and aim for greater talent retention via building structural support for learning/development.
	Creating buffer and resilience in manpower within the organisation.

B1: The public healthcare system should have a more forgiving environment for individuals who make mistakes or attempt to try new ideas, by fostering a learning environment

"One of the helpful things that has happened along the way is that the ability to take an adverse outcome, and honestly, look at the system and see. And without trying to find fault with particular individuals or even teams, look at how we can fix things to make them better. So perhaps to move away from a blame culture." P7

Quote Box 8

Participants agreed that there needs to be more tolerance of failure and encouragement of those who try new things, by moving away from a blame culture to that of a learning environment.

The job assessment framework of staff and leaders who embark on new ideas will require less penalising for failures. Respondents agreed that a forgiving environment is set at the micro level by their individual superiors as opposed to an institution wide culture alone.

Furthermore, respondents noted that there should be a celebration of diversity and adaptability amongst staff by building a psychologically safe environment to support each other. This means allowing for a communication of ideas, suggestions and feedback. Senior leaders appreciated supervisors during their career who were able to support them and trusted their judgment in making decisions.

B2: Providing leaders and leaders-to-be opportunities to rotate across the different clusters, institutions, job scope to allow for broad based understanding, learning, and networking; this can also mean bringing in individuals from beyond healthcare, and giving them the time to train

"Healthcare leaders tend to be oblivious to how other successful companies are run. They assume that their current issues and challenges are unique to healthcare whereas these challenges have been inventively addressed by other fields." P50

Quote Box 9

Having healthcare leaders rotate around different teams also break down walls within the professional groups. Examples cited include doctor-only lunches which reduce the opportunity for cross fertilisation of ideas. The appreciation that healthcare leaders alone do not have all the answers will transition the healthcare leadership towards a 'bench strength' concept which emphasises collective talent by co-opting staff across different backgrounds.

B3: A teaching culture where existing public healthcare leaders are willing to teach and nurture staff, by being open to junior staff taking over their positions at the appropriate timeline

"We must be willing to put our young leaders through the paces in terms of leadership opportunities out there. … We must first be willing to expose our leaders early." P14

Quote Box 10

There is a need for a mature talent management system where senior staff co-opt junior staff to committees and meetings for early learning. The reporting officer should take succession planning seriously and not just leave this up to the leadership system within the organisation alone. This has meant that younger leaders must be given the reins to display their leadership capabilities earlier.

"Clinical leadership on the clinical side is often seen as a dirty job. A job no one wants to do, and with lots of burdensome and thankless work." P2

Quote Box 11

Hence, whilst in the past the training may have been ad hoc for healthcare leadership, the processes today must be in place for succession planning. Yet, respondents agreed that leadership training takes time and resources which need to be planned in advance, notwithstanding the unpredictable succession timelines and high turnover of staff. Some

respondents have lamented that whilst they have identified successors, when it was time for a handover, such staff have already left their organisation.

Healthcare senior leaders who may have been in a position for too long should aim to move onwards to other increased responsibilities to allow their successors to takeover. Some respondents have shared that they were asked about successor identification as early as the first few months on the job.

There were various statements by senior clinicians who argued that they felt ill equipped when appointed to senior leadership positions and oftentimes had to rely on their subordinates to help with financing terminology or business development. Many clinicians also noted that doctors may not be keen to give up their clinical surgical hours or patient-contact hours to assume leadership positions.

B4: Identifying leaders using a combination of not just years of service or clinical experience, but thinking of leadership as a series of qualities that one should possess, which will help in talent retention and depth of experience

> *"Promotion in healthcare is actually the slowest compared to counterparts. Maybe because the nature of healthcare is that we are afraid that if we test out too many cross employed staff, we disrupt operational life of critical services. We are risk averse in that way." P2*
> ***Quote Box 12***

Respondents also noted that with the rapidly changing tides of healthcare globally and locally, identifying junior staff and leaders with the right attitudes and values means that we should be less conscious of age alone. Time in service should not be the only yardstick to determine if decision making responsibilities be conferred on the individual.

Some have even suggested possibly less distinction in career paths and remuneration between doctors, nurses, allied health, administrators to blunt the systematic differences across the industry. The concept of clinical experience equating to leadership abilities was debunked by many of the respondents, and they understand that whilst such change in mindset will take time, an earlier appreciation of this will improve the organisation efficiencies.

DISCUSSION

There is general consensus in how healthcare is expected to change over the next decade. Respondents agreed that healthcare will be shaped by changing patient expectations, the rise of digital and IT healthcare tools, realities of healthcare financing, ageing population with increasing chronic disease burden.

As a study which was conducted immediately following the announcement of 'Healthier SG' in Singapore, this is a first glimpse of what healthcare leaders feel will be relevant in this shift towards preventive care and community-based models of care.

COMPARISON WITH EXISTING LITERATURE ON LEADERSHIP WITHIN HEALTHCARE ORGANISATIONS

The findings from this study highlight key themes that are consistent with the existing literature on healthcare leadership. One prominent theme is the need for systems-based thinking. Healthcare leaders of tomorrow must possess a deep understanding of the complex, interconnected nature of healthcare systems. Previous studies emphasise that leaders should be able to possess effective communication skills, technological expertise, teamwork and networking, collaborative and trusted relationships across various healthcare sectors. [11] [12] Systems thinking is not only a leadership trait but a necessary approach to address the dynamic healthcare environment, especially as public health challenges continue to evolve.

Another crucial theme identified is the requirement for cross-industry experience. The study found that healthcare leaders should have a long-term perspective that extends beyond healthcare alone. This theme resonates with the broader call for integrating healthcare leadership with experience from other sectors, such as public policy or business. Such cross-

sectoral experience helps healthcare leaders understand the broader social determinants of health and develop a holistic approach to health system transformation. [13]

The individual character traits emphasised in this study—such as integrity, honesty, and authenticity—align with the values that are central to public service leadership. Ethical leadership plays a pivotal role in fostering trust and accountability within healthcare settings. [14] Leaders who embody these qualities not only drive organisational success but also maintain the moral foundation of public healthcare institutions.

Furthermore, this research underscores the importance of collaboration and communication skills in building a shared vision within healthcare organisations. Healthcare leaders must inspire and engage their teams, facilitating collaboration across departments and disciplines. [15] Effective communication enhances the exchange of ideas and promotes innovation in healthcare delivery.

In terms of the environment that fosters leadership, the study highlights the need for a public healthcare system that is receptive to learning, accepts failure, and is continuously evolving. This aligns with the findings of Warhurst and Black who argue that leadership requires organisations to embrace change and cultivate a culture of continuous improvement. [16] Additionally, establishing robust talent management and succession planning systems is crucial for developing future healthcare leaders. Identifying leadership potential based on talent and people management qualities rather than years in service ensures a meritocratic approach to leadership succession. [17]

ROLE OF POLICYMAKERS IN SHAPING HEALTHCARE LEADERSHIP

The findings suggest a bigger role for policymakers in shaping healthcare leadership. The evolving healthcare landscape in Singapore requires more than just capable leadership within the sector—it also calls for strategic input from policymakers to drive systemic change. Healthcare policymakers are crucial in shaping the public health environment by ensuring the effective allocation of resources, addressing emerging healthcare needs, and promoting personal responsibility among the population.

As the study's results highlighted, healthcare leaders of tomorrow must possess strong systems-based thinking to navigate competing priorities within the healthcare system. However, for these leaders to thrive, policymakers must establish the right frameworks, funding, and policies that enable leadership to flourish. [18] The shift towards promoting personal responsibility in healthcare, as noted in the results, is a critical area where policymakers will need to guide the broader societal transition, creating a sustainable healthcare ecosystem that balances public resources and individual health ownership.

Future research could explore the intersection between healthcare leadership and policy-making, focusing on the role of government in fostering an environment where leaders are empowered to make impactful changes.

ROLE OF LEADERS IN BRIDGING POLICY AND PRACTICE

Healthcare leaders, on the other hand, must play an active role in translating policy changes into practice. As highlighted in the study, effective healthcare leaders are not only skilled in systems thinking and communication but also adept at fostering collaboration across various sectors. Given the increasing complexity of the healthcare environment, these leaders will need to bridge the gap between policy and practice, ensuring that policy shifts around resource reallocation and personal responsibility are effectively implemented at the grassroots level. [19] For example, fostering a learning culture and providing opportunities for leadership development, as outlined in the results, will allow healthcare leaders to adapt and thrive in an ever-changing system.

Moreover, health leaders should advocate for policies that promote long-term sustainability, ensuring that healthcare remains accessible and equitable, while balancing both individual and societal needs. Exploring the interaction between leadership capabilities and policy frameworks is essential for building a resilient healthcare system that can adapt to future challenges. [20]

STRENGTH OF THIS STUDY WITHIN EXISTING LEADERSHIP FRAMEWORKS

Such qualitative study findings provide detailed information to explain a complex issue within the Singapore public healthcare system. As the healthcare system is heterogenous with varying experience by the respondents, a broad number of individuals were invited and recruited into the study until data saturation was obtained.

As highlighted in the thematic results – around the world, healthcare systems today are calling for radical, transformational change and new systems of care which is characterised by sophisticated technology and a greater personal responsibility for health.

In Singapore, through a series of interviews and focus group discussions in 2017 across 150 leaders, the MOH Holdings ONE Healthcare Leadership Framework was formulated, which noted the increasingly complex healthcare landscape, and the need to make three important leadership shifts of (i) shifting from expert as leader to expert leader, (ii) going beyond developing leaders to developing collective leadership, and (iii) moving from leading institutions to leading eco-systems. [21] [22] Palpably – many of the qualities and traits required of organisational leaders and healthcare leaders overlap significantly. Yet, such principles continue to apply for the changes that will occur in healthcare over the years and decades ahead.

In the United Kingdom, the National Health Service (NHS) similarly published a leadership framework which recommends that healthcare leaders demonstrate personal quality of working with others, managing services, ability to set direction and vision, and to deliver upon the strategy. [23]

Interestingly, many of such themes raised are also present in non-healthcare related industries. Patel et al suggested that effective leaders transcend their title of 'manager' or 'boss' and have found the right combination of charisma, enthusiasm, and self-assurance to act strategically, be an effective communicator, accountable, and setting clear goals and visions whilst managing complexity and fostering innovation. [24] Warren Bennis and Peter Drucker found that the foundation elements of effective leadership include guiding vision, passion, integrity, curiosity and daringness. There is a need for a manager to understand the relationships and contribution that he or she is expected to make. [25] [26]

APPLICATION OF RESULTS TO OTHER HEALTHCARE SYSTEMS UNDERGOING INDUSTRY-WIDE TRANSFORMATION

As this study is conducted in Singapore with existing public healthcare leaders, the findings are largely context-specific. Yet, we argue that many of the themes raised on healthcare leadership models can evolve and be directed towards other healthcare systems when faced with challenges such as ageing populations and rising chronic disease burden.

McKinsey and Company contended that within the Asia region, there is rapid healthcare change which is driven by shifting demographics, rising consumer expectations, and technological innovations. [27] The report stated that the forces driving such transformation are ageing population and supply constraints. PWC Strategy further predicted that by 2030, healthcare will be centred on patients empowered to prevent diseases rather than them seeking treatment, and physicians and administrators alike will need to redefine their roles and ways of spending healthcare finances. [28] The New England Journal of Medicine (NEJM) Catalyst posited that over the next 10 years, the healthcare system will focus on continuity of care, integrated delivery networks, care within the community, surgeries being performed at community surgical centres, remote delivery of care, and an established focus on prediction and prevention. [29]

With such sweeping changes in healthcare systems globally, the Singapore-based findings here can be a framework in which healthcare leadership development theories can continue to iterate in the future. [30]

LIMITATIONS OF THE STUDY

Although there were more than 2,000 participants who were eligible for this qualitative study based on the inclusion parameters, only 120 participants agreed to find out more about the study. There is concern about selection bias in that only participants who were keen (i.e. volunteer bias) to speak about healthcare leadership will respond to the invitation. The other participants who did not participate may have differing opinions from that of the respondents. However, the

wide variety of participants across different healthcare institutions showed that participants across multiple healthcare clusters and at different levels of leadership seniority were keen to provide their insights to the research questions.

There were also concerns about social desirability bias, and the responses being transcribed verbatim may have contributed to this. However, participants were assured on the confidentiality of their responses and their statements are not individually attributable. All data collection processes were individual-based and no group discussions were conducted. All interviews were conducted in a private space which afforded maximal confidentiality. Many of the responses offered frank criticisms of the existing state of the healthcare leadership development in Singapore, which is evidence that many respondents were comfortable sharing their opinions freely.

FUTURE DEVELOPMENT OF LEADERSHIP THEORIES FOR PUBLIC HEALTHCARE

Understanding the relative significance of these themes could provide deeper insights into the qualities required for healthcare leaders to effectively navigate strategic change. However, this was not available from the study participants' response, and we did not identify which of the themes discussed were considered by study participants to be more important or relevant.

Exploring which themes should be prioritised will offer useful insights. We envision the results here will be valuable for future research. Such studies can foster future understanding which will generate new theories on how healthcare leaders can hone their qualities and traits, and how the industry can change to meet various healthcare demands.

CONCLUSION

The strength of any organisation is dependent on the leadership and environment which they act in. This is similarly important within healthcare, especially as Singapore transitions towards a 'Heathier SG' landscape which emphasises larger number of stakeholders and shifting priorities towards preventive community care.

Tomorrow's healthcare leaders will need to possess broad-ranging traits of communication, stakeholder management, and courage to drive change within their organisation and across the entire health eco-system to achieve results. Similarly, there needs to be continued significant investments made in building the leadership development and training platform to nurture the next generation of leaders who have compassion and skills to network across the healthcare continuum. This qualitative study places a spotlight on developing healthcare leaders who have the knowledge and experience to continue Singapore's public healthcare system success.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Saw Swee Hock School of Public Health, National University of Singapore Departmental Ethics Review Committee approval (DERC SSHSPH-184) was obtained to conduct this study. Participants' written and signed consent were obtained to participate in this study.

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