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Submission date: 24-Dec-2021 11:33AM (UTC+0700)
Submission ID: 1735419545
File name: 2014-8471-1-PB.pdf (702.81K)
Word count: 5130
Character count: 30048

ORIGINAL ARTICLE

Bali Medical Journal (*Bali MedJ*) 2021, Volume 10, Number 1: 174-180
P-ISSN.2089-1180, E-ISSN: 2302-2914

Bali Medical Journal
Published by Bali Medical Journal

Does a higher degree of education affect the performance of healthcare leaders? A systematic review

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Received: 2020-10-14
Accepted: 2021-04-01
Published: 2021-04-28

ABSTRACT

Introduction: Healthcare leaders must have management skills, administrative competency, and leadership roles to fulfill the market demands, patient satisfaction, health policy, and complexity of the healthcare environment. Healthcare leader is expected to improve the competency through educational and professional program attainment to maximize measurable performance outcome for the hospital. The study aimed to systematically review the existing literature and carefully examine the findings to investigate the relationship between higher education and the performance of healthcare leaders.
Methods: Three independent reviewers conducted a literature search in electronic databases for publications that met the inclusion and exclusion criteria. Each of the included studies' risk of bias was independently evaluated by the lead author, who then discussed their findings with the other two authors to reach a consensus. Five papers out of 529 found by database searching met the requirements for this study.
Results: The Majority of the study designs were cross-sectional (4 of 5). Most of the studies discussed the outcome of the higher degree of education in healthcare leaders.
Conclusion: Higher and advanced degrees of education affect the better leadership role, administrative competence, and patient experience. Top healthcare leaders mostly have higher degrees of education focused on healthcare.

Keywords: director, healthcare, hospital, leader, leadership, performance.
Cite This Article: Prasetyo, A., Budiman, J., Isa, M. 2021. Does a higher degree of education affect the performance of healthcare leaders? A systematic review. *Bali Medical Journal* 10(1): 174-180. DOI: 10.15562/bmj.v10i1.2014

INTRODUCTION

In the globalization era, healthcare leaders must have good management skills. Also, administrative competency and leadership quality is another requirement to fulfill the market demands, maximizes patient satisfaction, improve health policy, and thriving in the complexity of the healthcare environment. Healthcare leaders are expected to demonstrate measurable outcomes, effectiveness, and efficiency and practice evidence-based management.[1–6] In addition, healthcare leaders needed to posses five competency published by the Healthcare Leadership Alliance (HLA) which include communication and relationship management, professionalism, leadership, knowledge of the healthcare system, and business skills and knowledge. At the same time, academic education and professional programs emphasize the attainment of competencies related to workplace effectiveness and efficiency. In the end, healthcare leaders are expected to improve and achieve these competencies through educational and professional programs with the hope of maximizing measurable performance results for hospitals or healthcare institutions.[3,7–9]

Research has found that a leader with an advanced level of education is associated with better management as well as organizational skill and performance. It was often accompanied by few other characteristics, such as facilitating organizational adaptation, motivating others, and influencing patient experience and satisfaction by the technical, human, business, and conceptual skills.[10–16] Formal education may provide the knowledge about identifying factors that drive and hinders changes in implementing the most effective approaches to improve patient satisfaction and hospital rating.[11,17]

The leaders with a higher level of education also tend to engage in an effective decision and policy based on solid evidence. A previous study also showed that leaders with a graduate degree tend to exhibit transformational leadership qualities such as role modeling a desired goal-achieving behavior.[11,18] Likewise, the leader with a graduate degree grounded in theory, research, and utilization of empirical literature is more likely to use evidence-based practices.[11,19] The use of evidence can help leaders improve their decision-making for selecting effective strategies in response to changing external environments, such as increasing emphasis on patient experience. Healthcare leaders with a master, doctoral, and other advanced graduate have been highlighted by many observers in healthcare to promote better workplace environments associated with better quality performance and outcome. In the US, most of the hospitals were led

by leaders with advanced degrees. A study by Rappleye et al. reported that 98% of the top 50 U.S. health systems identified by Becker's Healthcare Review were led by leaders holding advanced degrees, whether a master's degree (56%) or a doctorate degree (42%).[11,20]

The relationship between the higher degree of education and the performance of healthcare leaders has been reported and explained in various studies. Still, there was no systematic review about the relationship of it. This study aims to systematically examine and analyze the current literature to find any evidence of the association of a higher degree of education and the performance of healthcare leaders.

METHODS

This systematic review was conducted according to the Cochrane handbook for systematic reviews and reported following the guideline of preferred reporting items for systematic review and meta-analysis (PRISMA).[21,22] The literature was systematically searched from various electronic databases. The databases include Cambridge Core, Clinical Key, EBSCO, Emerald Insight, JSTOR, Medline, Nature, Proquest, Pubmed, Science Direct, Scopus, and Springer Link. The search was conducted using the following keywords for the title and abstract: (background OR education OR degree OR master) AND (healthcare OR hospital) AND (board OR ceo OR chief OR director OR executive OR lead OR manage). The reference lists of the screened literature were also examined to avoid missing any published data. Publications were screened following the inclusion and exclusion criteria. Inclusion criteria were (1) publication were full-text articles discussing the relationship of a higher degree of education and the performance of healthcare leader, primary studies regardless of the design (case study, case series, cross-sectional, case-control, cohort, and clinical trial), (2) published in English, (3) published within January 2000 - September 2020. Exclusion criteria were (1) objective and outcome measures were not relevant, and (2) confounding variables were related to outcome in the relationship of a higher level of education degree and the performance of healthcare leader.

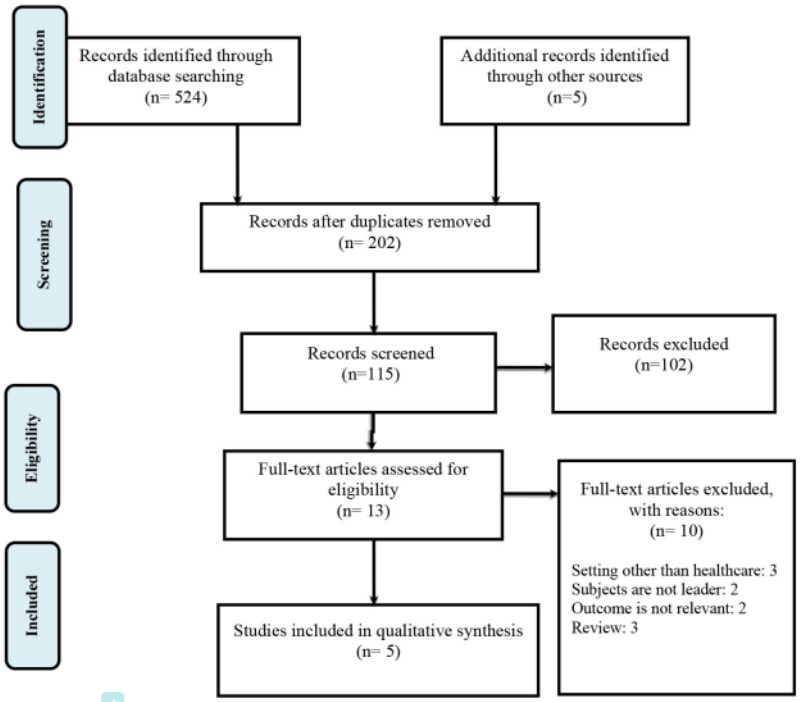

Figure 1. Preferred reporting items for systematic reviews and meta-analysis (PRISMA).[22]

Published studies were retrieved after two reviewers (AP and JB) independently had collected titles and abstracts identified in electronic searches. The literature search results from the two reviewers were examined and compared by a third independent reviewer (MI). Any differences of opinion were resolved by discussion. Full papers from potential studies were assessed by AP and JB independently. All those studies selected were screened to validate the results. The data regarding first author, country, and year, study design, sample, outcome measure, and result were collected, tabulated, and presented in a summary table (table 3).

The lead author conducted the quality and risk of bias assessment of each of the included studies using criteria developed by Hawker et al.[23,24] Ratings were assigned (very poor, poor, fair, good) across nine different categories: abstract and title, introduction and aim, method and data, sampling, data analysis, ethic and bias, result, generalizability, and implication and usefulness. The risk of bias was assessed by examining study methods, ethics committee approvals, study funding, and conflicts of interest to avoid studies that potentially affected the cumulative evidence.[23,24] For the cross-sectional study, Newcastle - Ottawa scale adapted for the cross-sectional study was used to assess the methodological quality of the studies. Interpretation of total score was: 9 to 10 points were considered in very good studies, 7 to 8 points were considered in good studies, 5 to 6 points were considered in satisfactory studies, and 0 to 4 points were considered in unsatisfactory studies.[25,26] Finally, the result was discussed with the other two authors to achieve consensus.

RESULTS

The overall summary of the identified screened and included articles for review were presented in Figure 1. Initially, 524 peer-reviewed articles were identified from systematic search through the electronic databases. Another five articles were

Table 1. Quality assessment and risk of bias by Hawker et al.[24]

No	First author, year	Abstract & title	Introduction & aim	Method &data	Sampling	Data analysis	Ethic & bias	Finding	Generaliza-bility	Implication & usefulness
1.	Galstian C, 2018[11]	Good	Good	Good	Good	Good	Fair	Good	Good	Good
2.	Ochonma OG, 2018[3]	Good	Good	Fair	Good	Good	Good	Good	Good	Good
3.	Matthews E, 2013[27]	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
4.	Baker S D, 2011[13]	Good	Fair	Fair	Good	Good	Fair	Good	Good	Fair
5.	Garman A, 2010[29]	Fair	Fair	Good	Good	Fair	Fair	Good	Good	Fair

Table 2. Newcastle-Ottawa scale adapted for cross-sectional study.[26]

No.	First author, year	Selection				Comparability	Outcome		Total
		1	2	3	4		1	2	
1.	Galstian C, 2018[11]	*	*	*	**	**	**	*	10
2.	Ochonma OG, 2018[3]	*		*	**		*	*	8
3.	Baker S D, 2011[13]	*			**		*	*	5

Notes for table 2:
Maximum points for selection number 4, comparability, and outcome number 1 were 2.
Selection: (1) representativeness of the sample, (2) sample size, (3) non-respondents, (4) risk factor measurement tool.
Outcome: (1) assessment of the outcome, (2) statistical test.

Table 3. Summary of study characteristic.

No.	First author, country, year	Study design	Sample (n)	Outcome measure	Result
1.	Galstian C, USA, 2018[11]	Cross-sectional	294	Patient experience scores	Patient experience scores were insignificantly higher in higher levels of education.
2.	Ochonma OG, Nigeria, 2018[3]	Cross-sectional	104	Administrative competency	There was a significant competency difference between leaders with a 1st degree and those with a higher education degree (p=0.048). The mean rank indicates that leaders with a higher education degree (54.30) had higher overall managerial skill competencies than those with a 1st degree (42.47).
3.	Matthews E, USA, 2013[27]	Descriptive	183	Workforce educational demographic	The most common degree was a master degree (73%), with approximately 11.3% of the respondents possessing a doctorate. Approximately 60% of the individuals who possess degrees in management had a degree specifically focused on healthcare.
4.	Baker S D, USA, 2011[13]	Cross-sectional	200	Leadership role	There was a significant correlation between the study variables and the control variable of education, indicating that respondents with a higher level of education report that they perform better in the followership performance characteristic of embracing change (r=0.151, p< 0.05), as well as in the leadership performance characteristics of encouraging others to act (r=0.181, p< 0.01) and challenging the process (r=0.189, p< 0.01).
5.	Garman A, USA, 2010[29]	Cross-sectional	173	Top administration position	Representation among the top executives was associated with having a master's degree in administration, the degree being an MHA/equivalent, and the degree being from a CAHME-accredited program (p<0.001).

Abbreviation:
CAHME: Commission on Accreditation of Healthcare Management Education
MHA: Master of Health Administration

identified through other sources (search engine). After removing duplicates, 202 articles were screened for the title and abstract suitability. Articles that did not meet the inclusion and exclusion criteria were excluded. Thirteen papers were examined for eligibility, and only five articles met all the requirements.

All eligible studies were associated with the association of a higher degree of education and the performance of healthcare leaders. Table 1 provides quality assessment and risk of bias by Hawker et al. All of the components were fair and good. Table 2 provides quality scores for cross-sectional study, and all of the studies got 5-10 points that were considered satisfactory, good, and very good study.

The study characteristic for the included studies could be seen in table 3. The majority of the study were cross-sectional (4 of 5). Most of the studies discussed the outcome of a higher degree of education in health care leaders.

DISCUSSION

Cognitive ability is an essential factor to success in high complexity jobs and strongly related to job performance. High-complexity jobs (doctor, engineer, lawyer, scientist, etc.) need the level of general intelligence, verbal ability, and numerical ability required to perform a job. These abilities also facilitate the learning of job-relevant knowledge and thereby indirectly promote better job performance as well. Abstract managerial tasks like developing market strategy also greatly benefited from better cognitive ability. On the other hand, greater emotional intelligence is essential in other organizational functions like leading changes. The additional positive outcomes from education, such as improved cognitive ability, broader job knowledge, and greater motivation, are likely to accelerate high-complexity jobs further.[3,10]

Matthews E (2013) reported the change of workforce educational demographic in a top management position in the United States (US) Hospitals from 2007 to 2012. There was an increasing number of healthcare leaders with a higher level of education and graduate degrees. That advanced education specifically focused on healthcare than business management. Healthcare leaders must have specific training and skillsets to manage effectively and succeed as a leader.[27,28]

Garman A (2010) discussed the association of master degree and top administration position Over 50% of healthcare leaders had a master degree (mostly were Master of Health Administration/MHA) and from the Commission on Accreditation of Healthcare Management Education (CAHME)-accredited program. There was a significant association between a master degree and a top administration position ($p<0.001$).[29] In the United States, most professions that require advanced education often have a profession-specific accreditation process in place to ensure the program's quality. Accreditation is usually intended to benefit the public good by encouraging transparency and offering a safeguard against fraud and abuse.[29,30] The CAHME, which is the only entity officially accredited for this reason in the United States and Canada, has had a rigorous accreditation process for master's-level healthcare management programs. The Commission on Accreditation of Healthcare Management Education (CAHME) accredits master's programs based on the nature of the curriculum rather than the degree title; their list of accredited programs includes MHA, MBA, MHSA, MS-HSM, MPH, MSPH, and MSPHM.[29,31]

Leadership in new paradigm has changed from transactional to transformational leadership style. Transformational leadership style increases the follower's motivations with the outcome in better performance and positive organization.[32–34] Transformational leadership style and good leadership role in healthcare were correlated with a higher level of education.[13] Supportive leadership is a new management philosophy that argues that encouraging and establishing relationships with workers increases the probability of being positively affected and driven to work toward goals. The theory is based on organizational behavior research that suggests that having positive (motivating) leaders who empathize personally makes people happier and more satisfied at work.[29,35,36] The knowledge on supportive leadership could also be enhanced by acquiring specialized education programs and training in psychology beyond the first degree. Improving the competency of hospital leaders through higher education must be structured through curriculum reforms that take into consideration other factors that have been witnessed as contributing factors to administrative competency. Some of the main factors that are thought to limit the positive effect of educational qualifications on job performance at work, such as the quality of the work environment, organizational structure and processes, the assignment of employees to positions that do not match their qualifications, and the lack of incentive systems, should be managed and regulated in future studies to improve job performance.[3]

Leaders with higher degrees were found more competent in human resource empowerment and communication skills, including motivating employees. As arguably, the expertise, skills, and encouragement of those (human resources) responsible for providing health care significantly impact the hospital system's success and benefits. Improvement in human resource management, which is very technical, could be strengthened by additional trainings obtainable from a higher degree in master of business management or hospital administration.[3,37,38] Kasika (2015) stated that the higher educational attainment, the more significant the impact of education and ability on job performance. Thus, a person's ability to comprehend and use modern technology (technical competency) more or less is dictated by their educational background.[39]

Patient experience is the aggregate of all experiences that affect patient expectations across the continuum of care and are influenced by an organization's culture.[40] Measures of patient experience are used by the World Health Organization (WHO) as an indicator of a health system's responsiveness.[41] Scores on patient satisfaction have become critical measures of operational success and can help hospitals stand out in the marketplace. Consequently, CEOs and other hospital leaders increasingly view patient experience and strategies for its improvement

as essential determinants for future organizational success. CEOs of hospitals play a critical role in fostering positive patient interactions because they are in charge of establishing the organization's mission and strategic priorities, as well as the ability to implement timely and successful change that can support those experiences.[11,42] Patient experience score was based on the eight "patient experience of care" items included in the hospital value-based purchasing (HBVP) total performance score (communication with nurses, communication with physicians, pain management, overall rating of the hospital). Patient experience scores were insignificantly higher in higher levels of education. One explanation for this finding is that the educational skills and knowledge emphasized in terminal degree programs are not important correlates of the patient experience. Another potential explanation pertains to the types of outcomes considered in the study. Patient experience is challenging to measure because it is "a complex, ambiguous concept that lacks a common or ubiquitous definition with multiple cross-cutting terms (e.g., satisfaction, engagement, perceptions, and preferences)".[11,43] It is possible that education (specifically terminal degree) has a more significant impact on objective measures such as clinical processes and outcomes of care and a minor impact on subjective measures such as patient experience, but this is a conjecture in need of future research.[11]

Effective doctor-patient contact plays a critical clinical role in establishing a therapeutic doctor-patient relationship, the heart of the art of medicine. This is critical in providing high-quality health care. Many patient concerns and frustration stem from a deterioration in the doctor-patient relationship.[44] Improvement in this act could be enhanced with higher training in healthcare administration.[3]

This systematic review is intended to be a scientific reading, content, and consideration for clinicians, policymakers, and stakeholders concerned with the relationship between higher levels of education and healthcare leader performance. The present systematic review involved studies that reported five studies related to the relationship between a higher degree of education and the performance of healthcare leaders. One study discusses workforce educational demographic, one study discusses master in healthcare associated with top administration position, and three studies explain the outcome of higher education degrees in health care leaders (patient experience score, administrative competency, and leadership role). Despite the best effort, this systematic review has some limitation. The limitation includes various aspect of the heterogenous variance of the demography, secondary data sources, confounding variables in each study (there were confounding variables that can't be controlled in human subjects), and the limitation of study type (only descriptive and cross-sectional study). Nevertheless, more research into the other factors that play a role in the relationship between a higher level of education and the success of healthcare leaders is needed.

CONCLUSION

Higher and advanced education degrees affect the better leadership role, administrative competency, and patient experience. Top healthcare leaders mostly have a higher level of education degree focused on healthcare.

FUNDING

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

CONFLICT OF INTEREST

The authors declare there is no conflicts of interest concerning this article.

AUTHOR CONTRIBUTION

AP, JB and MI construct the concept of the study. AP and JB conducted the electronic searches. MI reviewed the literature search results. Full papers from potential studies were assessed by AP and JB. AP conducted the quality and risk of bias assessment. All authors discussed the final result to achieve consensus, written the manuscript and agree to be responsible for all the content.

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