A CRITICAL APPRAISAL STUDY ON HOW MEDICAL SCHOOLS DIFFER FROM TEACHING HOSPITALS

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ABSTRACT

Teaching hospitals are considered more crucial in the healthcare system, as these hospitals deal with medical education, research, and patient care. Besides, medical schools are usually affiliated with these hospitals to handle their students during the course and training period. Hence, this study discussed the order of teaching hospitals and revealed the difference between the medical school and teaching hospital. The features of university hospitals, academic medical centers, academic health centers, and affiliated teaching hospitals were described. It is observed that the medical school differ from the teaching hospital concerning the structure and culture. A medical school needs a hospital to educate its students, perform medical research, and offer its clinical workforce to practice medicine. However, a teaching hospital focuses on high-quality patient care and patient satisfaction. Conversely, the association among medical schools and their teaching hospitals embraces a complex and variable mixture of monopoly and monopsony power. Such an association has not yet ethically studied. There is a need for the significant effort from the nation's medical schools and teaching hospitals towards the development of academic medicine since it involves in creating future physicians and innovations, and delivering effective patient care.

Keywords: Critical Appraisal, Medical Education, Medical Schools, Teaching Hospitals

INTRODUCTION

A teaching hospital is a hospital that provides medical education and training to the current and future healthcare professionals. Such hospitals are also involved in medical research. Medical schools are generally affiliated with these hospitals and work closely with medical students throughout their course duration and during the internship period. In general, teaching hospitals offer medical education/physician residency programs, which enable medical graduates to be trained under the supervision of physicians, faculty, and department chairs to support the patient's care (Gallagher Healthcare, 2018). Therefore, such hospitals are called teaching hospitals as they are involved in teaching and training medical students. In other words, a hospital affiliated with a university/medical school to offer a medical education, can be referred to as a teaching hospital. Teaching hospitals are sites of healthcare workforce training, which directs the human capital in healthcare systems.

Further, teaching hospitals are one of the key elements of healthcare systems. These hospitals are crucial sites that provide medical education and research. Further, they offer a substantial and diverse proficiency in patient care (Kupersmith, 2005). The overall quality of teaching hospitals is highly rated by the physician assessors and transparent process criteria, when compared to the non-teaching hospitals (Ayanian et al., 1998). Although, teaching hospitals deliver highly specialized services along with treating rare clinical conditions and

severely ill patients, they are dependent on the revenue obtained from routine amenities, which include caring for patients with cardiac diseases, lung infections, and cerebrovascular injuries due to accidents (Association of American Medical Colleges, 1998). Such hospitals state their superior form of patient care to justify their relatively high fees for offering medical services compared to other hospitals. However, in general, compared to non-teaching hospitals, teaching hospitals might deliver poor care quality, primarily due to the considerable participation of students and/or interns and diminished role of experienced physicians. This leads to uneven and minimal care (Ayanian & Weissman, 2002). Although it is indistinct if these hospitals can offer high-quality care as compared to non-teaching hospitals (Gallagher Healthcare, 2018; Kupersmith, 2005), such high-quality care applies to both complicated and routine cases (Kupersmith, 2005). Both the payers and patients wish to understand, if teaching hospitals provide added value through better or similar levels of care and service qualities, which are acquired at a low cost in non-teaching hospitals (Ayanian & Weissman, 2002). Zaboli, Soltani Zarandi & Ayoubian (2015) recently reported that patients perceive the service quality of non-teaching hospitals to be superior to that of teaching hospitals. The bias that has resulted in patients assuming poor service quality of teaching hospitals has typically risen owing to the teaching environment prevailing in the teaching hospitals.

Furthermore, the augmented mortality rate observed in hospitalized patients worldwide, results from hazardous and potentially life-threatening health care provisions. This clarifies the need to have a risk management system in a hospital for reduction in medical errors (Smits et al., 2010; WHO, 2005). The risk management policy and program developed include a leader and coordinator core along with their role description. Further, communication with hospital committees, explanation of the processes, and arrangement of the infrastructure for patient safety culture and education are also included in the policy and program. The healthcare service providers in a teaching hospital need to be educated with information concerning the definition, concepts, and value of the system and patient safety culture (Adibi et al., 2012). Various educational and training programs on risk management systems, have been employed to facilitate this. Al Jarallah & Ahmed (2016) reported that education and training programs on Needle-Stick Injuries (NSIs), delivered as a risk management approach to nurses in Saudi, had a significant effect on reducing the occurrence of NSI and improving their knowledge and awareness of reporting along with appropriate management after exposure to risk. Hence, the effective and innovative development and execution of the risk management system are necessary to safeguard healthcare workers, patients, and visitors in teaching hospitals from hazardous risks.

Further, research has revealed that cost of care is low in non-teaching hospitals as compared to teaching hospitals (Iezzoni et al., 1990; Mechanic, Coleman & Dobson, 1998; Taylor, Whellan & Sloan, 1999; Whittle et al., 1998; Zimmerman et al., 1993). Traditionally, teaching hospitals have compensated certain costs associated with their research executions by laying excess for patient care. However, the private payers have compensated even higher costs. Moreover, federal health insurance programs, such as Medicare, have financed the additional teaching costs through incremental payments to the teaching hospitals (Ayanian & Weissman, 2002). A literature review by Ayanian & Weissman (2002) concluded that the overall quality of care, offered at teaching hospitals, is significantly better than that in non-teaching hospitals. However, this result varies with respect to different illnesses. However, the reasons behind proper care and efforts by these teaching hospitals are not yet known. A high medical fee for improved care supports the teaching hospital in upholding its mission related to education, research, innovation, and patient care. The order of moving down in the descending order of the teaching hospitals is as follows: university hospitals, flagship teaching hospitals, academic medical centers, council of teaching hospitals (COTH), affiliated teaching hospitals, community hospitals, and residency program hospitals (Sloan & Valvona, 1986). This study intended to describe about the different forms of the teaching hospitals and do a critical appraisal on how the medical school differ from the teaching hospital.

VARIOUS FORMS OF TEACHING HOSPITALS

University Hospitals

University hospitals are owned and managed by a university or medical school. In particular, a university hospital is an extensive research and teaching unit that is affiliated with a medical school (Hodgson, 2019). Such hospitals are sophisticated establishments, and their mission focuses on education, research, and patient care (Smith & Whitchurch, 2002). University hospitals pool all the characteristics of Mintzberg's professional bureaucracy, which is rooted in the healthcare organizations along with the university context (Mintzberg, 1983). Due to their mission to train physicians alongside other professionals of the medical field and conduct research, university hospitals are likely to recruit and retain experienced physicians for medical education and research purpose (Hodgson, 2019). These hospitals work as referral centers within a hospital network for dealing with complex cases (Palm et al., 2013). Considered to be at the frontline of the healthcare sector, such hospitals have experts from rare medical specialties. However, the major drawback of university hospitals is the fact that most of the healthcare services are delivered by students and clinicians undergoing training (Hodgson, 2019).

Academic Health Center

Academic Health Centers (AHCs) are public or private organizations, which are university based or self-supporting. As a foundation for higher learning, a typical AHC performs three roles, which are training healthcare professionals, providing clinical care, and conducting scientific research in the field of academic, clinical care, and biomedicine. To execute these roles, AHCs encourage financial and human capital across the institution. The complete AHC is affected even when a single AHC part is overreached. Institutional complexities lead to significantly high AHC expenses. This can occur owing to the development and use of modern medical technologies to educate students in all disciplines, including subspecialties. This, in turn, requires high-salaried specialists, round-the-clock treatment of a complete array of human diseases, and numerous research activities (Rothman, Miller, King & Gibson, 2015). AHCs can relatively impact a university. Successful AHCs could be anticipated to stimulate the overall achievement of the university. Moreover, the AHC revenues through clinical processes are usually demanding to the fiscal health of the university and its overall bond rating. The AHC budget majorly accounts for the university resources. On the other hand, the AHC revenue might cross-subsidize the mission of the university's non-medical education. Therefore, university leaders protect and enhance the reputation and revenue of the AHC as an institutional priority, which could lead to real or perceived biases between the medical and non-medical faculty, staff, and students. Additional perceptions of inequality are fostered, as medical faculty compensation can be significantly larger than that of non-medical faculty. The perception of preferential treatment is also exacerbated by the frequent slowdown of AHC operations from the rest of the university. This facilitates reduction in the potential fiscal risk to the university, enabling flexible AHCs that are competitive in the health services market (Colenda & Azziz, 2015).

AHCs are capable of treating all kinds of patients, whereas, specialty hospitals focus on commercial areas such as cardiology and orthopaedics. Further, the care delivered in AHCs can be less efficient as they invest most of the time in teaching rather than treating (Rothman et al., 2015). Moreover, in comparison to teaching hospitals, AHCs provide care for a single patient with excessive healthcare needs. Medicare provides additional funds to teaching hospitals to compensate for the extra costs owing to treating critical cases and incompetence inherent in teaching trainees (Kohn, 2004). In US context, a resident's training cost is observed as $100,000 annually, and Medicare compensates approximately 40% of this

expense (Rothman et al., 2015). AHCs create considerable economic activity at the local and national levels along with treating patients and addressing healthcare inequalities (Umbach, 2009).

Currently, commercial and governing climate defines various challenges and opportunities for national healthcare and academic health systems. Subsequently, AHCs undergo transformation to trim their budget line. In addition, AHCs are involved in a deep reconsideration of business model and application of sustainable positive actions. This may lead to the warranting of how AHCs thrive and proceed further, rather than surviving (Rothman et al., 2015). AHCs include the creation of a firm, which is a combined network of physicians through achievements and affiliations in the university's adjacent groups. For example, Vanderbilt University recently founded a medical group called the "Vanderbilt Health Affiliated Network", covering 32 teaching and community hospitals, several autonomous physician groups, and two insurers (Kirk, 2013). This form of a large, expanded network of clinical areas confirms that a health system is capable of holding adequate number of patients, in spite of a decrease in inpatient need. AHCs work as a feeder system for teacher subspecialists, who work on referrals (Rothman et al., 2015).

Academic Medical Center

According to the new Joint Commission International (JCI) standards, every teaching or research hospital cannot be considered as an Academic Medical Center (AMC). According to JCI, the AMC is a hospital that has organizationally or administratively combined with a medical school. It serves as the primary site where medical students, interns, and postgraduate medical trainees are educated under the various available medical specialties at the medical school. The AMCs are also involved with performing academic and financial oriented research while including hospital patients as human subjects (JCI, 2012). The AMCs aim at achieving three missions, which are education, research, and patient care. Their primary responsibilities include educating the healthcare workforce and conducting systematic research in the medical and healthcare fields (my previous work). Further, their secondary responsibilities include the delivery of qualified clinical services by their academicians, who play a triple role in the form of educators, physicians, and scientists (my previous work; my previous work). The current healthcare tendencies include an alliance of non-governmental insurers, the enhancement of cost transparency, and sharing of the rising cost of care by companies and patients (Fleishon, 2017). These healthcare tendencies place a significant burden on AMCs to become highly competitive in terms of understanding their tripartite mission, which includes education, patient care, and research.

Further, AMCs are different from AHCs, which have been developed based on the foundation of an individual's faculty, creativeness, and entrepreneurism. With a common vision and quality with respect to faculty, department, or center, frontline leaders have directed the development of AHCs in terms of deliberate reserve creation to aid programs for enhanced growth and distinction. Such leadership models are successful when the income is high and choices are based on the development (Balser & Stead, 2015). Moreover, AHC is an accredited higher education organization, which involves a medical school providing one or more healthcare professional programs, such as dentistry, public health, nursing, pharmacy, allied health sciences, veterinary medicine, and graduate studies. In addition, it is owned by or affiliated with a health system or teaching hospital. Thus, AHCs are distinctive fusion of academics and monetary policies following the economics of treatment and roles of teaching and research concurrently. The term "center" is used to define these institutions in a more historical manner compared to modern realism (Wartman, 2015).

Additionally, AHCs can be well termed as "networks" or "systems," which indicate the coverage of increasing geographical array of institutes and amenities that deliver various services. Two ideal administrative structural models of AHCs are as follows: (i) An integrated model, which comprises of academic, clinical, and research roles, monitored by a

single person and single board of directors and (ii) A split/splintered model includes academic and health system operations. Such operations are administered by two or more people who report to diverse governing boards. In the split/splintered model, a medical school usually has a definite contractual association with a teaching hospital (Wartman, 2015). The importance of simulation centers and role of big data, virtual medicine, artificial intelligence, and internet of things should be considered in the development of AHCs.

Affiliated Teaching Hospital

Affiliated teaching hospitals are neither owned by nor under the administration of a medical school. However, they are affiliated with a medical school for teaching and training. Owing to a rise in class strength, several medical schools have been enforced to use affiliated teaching hospitals for educating undergraduate medical students. Most of the teaching hospitals in UK come under the National Health Service (NHS) authority. Virtual agreement modules are created between educational institutions and such healthcare service providers. In terms of surgery, the education quality provided at an affiliated community hospital has been determined to be equal and, in some cases, better than that of the university hospital (Schwartz, Veloski & Gonnella, 1976). Medical students should acquire the required clinical skills for delivering integrated community healthcare services through the clinical training programs in the community setting. As per the core model curriculum framed by Japan in 2007 for community-based medical education, medical students should utilize the community-based clinical training provided. The students have to acquire the outcomes from community-based training related to the primary care, emergency community clinical care, home care, team clinical care involved in different professions, collaboration among community hospitals and clinics, and prevention and health promotion events (Okayama, 2014). Furthermore, medical students attain necessary skills, such as participating a role in community hospitals, forming trust-based associations, inter-professionalism at work, and patient-centered medical management, through clinical training experience in a community setting. From competency point of view, a well-structured clinical training program in a community setting can enable medical students to become talented physicians to work in the community (Kikukawa et al., 2014).

Furthermore, the various factors that result in an outstanding performance of the community hospital affiliated with a medical school are as follows: (i) The teaching staff of the community hospital serve as volunteers, (ii) Provision of a personal environment to the student by the community hospital for significant individual care, (iii) Exposure of students to typical case-mixes by the community hospital. In contrast, larger tertiary care hospitals expose students to “exceptional" cases, and (iv) Being familiar with the “in and out” ambulatory as a by-product of care in community hospitals. In contrast, the university hospital gives importance to teaching physicians (Imperato, Rand, Grable & Reines, 2000). The dependence of community hospitals on General Practitioners (GPs) for administrative and clinical roles, specifically in nations that lack GPs, emphasizes the necessity of modification in medical education and training. This change can draw additional medical students toward a general medicine career (Pitchforth et al., 2017). The type of curriculum followed by a medical school is a primary deterministic factor, which directs a particular community hospital as a teaching hospital.

DIFFERENCE BETWEEN MEDICAL SCHOOLS AND TEACHING HOSPITALS

A medical school and teaching hospital are different from each other in terms of its structure and culture. A medical school requires a hospital to educate its students, conduct clinical research, and provide its medical faculty with a means of practicing medicine. The medical schools are known for focusing primarily on a school's traditional role in medical education, teaching, and research. In contrast, a teaching hospital offers high-quality

healthcare services to its patients as patient satisfaction is its ultimate goal. The structural association between medical schools and teaching hospitals differs among countries. In some cases, the medical school may own the hospital or vice versa, while in some cases, neither may own the other. A medical school is a university faculty where medicine is studied. It is a tertiary education institution that imparts medical practice knowledge and awards a professional degree to the qualified physicians. In general, medical schools focus on educating students in the field of medicine.

A medical school is considered as an academic institution that is dedicated toward graduating competent students, who are committed to practicing medicine with high professional ethics, providing excellent quality healthcare services, and conducting innovative basic and clinical research. Medical schools work with a tripartite mission that includes medical education, research, and patient care. Hence, to achieve this mission, they need to have clinical facilities and hospitals. Medical schools enable teaching and learning medical sciences, including both clinical and non-clinical medical education, involving teaching within the hospital and that with or without the direct involvement of the patient. Therefore, teaching hospitals vary significantly in their involvement with medical schools. When compared to medical schools, teaching hospitals provide quality healthcare services to the patients and involve in imparting medical/clinical education and training to the current and future medical/healthcare professionals. Therefore, the hospitals that engage in formal medical teaching and training are known as teaching hospitals.

Sloan & Valvona (1986) established a descending order of teaching hospitals that included flagship teaching hospitals, other Council Of Teaching Hospitals (COTHs), medical school-affiliated hospitals, and approved residency program hospitals.

Flagship hospitals

The Association of American Medical Colleges recognizes "flagship teaching hospitals" either as establishments run by medical schools or as distinct public and not-for-profit hospitals. However, the medical school department chairs and hospital chiefs of service are ideally the same person.

COTH

Although such hospitals have the primary commitment in teaching, in comparison to flagship hospitals, they do not inherently deal much with medical education.

Medical School-Affiliated Hospitals

These refer to other hospitals that are affiliated with a medical school but are not COTH members.

Approved Residency Program Hospitals

Each teaching hospital has minimum one approved residency program, but no other formal teaching affiliations.

Typically, university hospitals are academic medical centers, which are associated with and often owned by a medical school. For example, an academic medical center is owned by a Saudi public university (my previous work; IAU, n.d.). There are several large community-based teaching hospitals that are not owned by a medical school. Nevertheless, they work closely with the affiliation of a medical school and staffed often by physicians through faculty appointments at the medical school. These physicians are not necessarily

employed by the medical school. They are called flagship teaching hospitals as they are involved in teaching and training medical students and/or new physician residents.

The significant predictors of the teaching status of the hospital are the number of hospital beds and the hospital's ownership. Hospitals with less than 200 beds and investor-owned hospitals, irrespective of the bed availability, are categorized as non-teaching hospitals. On the other hand, teaching hospitals are commonly those that are termed as private non-profit and public hospitals with above 500 beds. Added facilities are excessively used in teaching hospitals, along with the excessive hospital costs with more attention towards teaching. Flagship and other COTH member hospitals are 10% more expensive in comparison to non-teaching hospitals with respect to dietary cost per adjusted admission, plant operations cost per adjusted patient day and adjusted admission, pharmacy cost for an adjusted patient day, and housekeeping cost per adjusted patient day (Sloan & Valvona, 1986).

It has been determined that commitment in terms of teaching is entirely associated with performance. However, the affiliation of a medical school is not significantly related to performance. This can be understood owing to recommendations that even some teaching hospitals displaying their performance by upholding high teaching commitment get affiliated with a medical school (Grosskopf, Margaritis & Valdmanis, 2004). In the past, studies have reported significant performance from the teaching hospitals in terms of various indicators such as caring processes, mortality, and impartial treatment quality. Major teaching hospitals usually deliver a significantly high conical performance. These hospitals uphold expensive and modern technologies to offer specific patient services that cannot be delivered by other hospitals. They deliver physician expertise that imitates the variety level and number of critical cases treated by these physicians. Apart from critical cases, these hospitals also treat certain common conditions usually treated by acute care hospitals (Shahian et al., 2012).

High unadjusted costs at teaching hospitals are endorsed by financial investigations, particularly for the COTH members. Although differences among teaching and non-teaching hospitals are attributed to the extra costs of care, so it can be concluded that a hospital's performance is positively associated with the teaching intensity for all quality and safety domains. Hence, this aspect can be considered in any health improvement debate as it displays the value of teaching hospitals. This is essential as this fact might not be obvious to all stakeholders, seeking relatively high performance in different areas with the same adjusted costs. Teaching hospitals deliver innovative clinical skills, educate the future healthcare workers, and offer care for complex and seriously ill cases. These hospitals serve the poor, underserved category of people, and deprived urban people. They are considered as the leaders in clinical research and innovation. Numerous stakeholders are ignorant of an additional value-relatively higher quality and safety in various areas with the same adjusted costs (Shahian et al., 2012).

It is essential to briefly understand the features of AHCs, and the means through which such components mutually function. Prior understanding of the complex financial aspects of academic medicine is important. A classic AHC, which is a tertiary learning institute, has three features. These are an academician that teaches healthcare workforce, a clinical care component as a health system or an affiliated teaching hospital, and a biomedical research center (Rothman et al., 2015; Wartman, 2015). Despite varying missions of AHCs, these centers should imitate the tripartite structure. This structure could include educating and training healthcare professionals apart from scientists, innovating to improve health globally, and offering standard care to treat and prevent diseases (Rothman et al., 2015).

Attainment of the primary academic medicine goal could be difficult as recalling it would be hard owing to the fact that medical schools and teaching hospitals are soaked in the past of academic medicine. Previously, a persistent need did not exist to reconsider the means that were financed, unlike the current economic demand, which motivates the nations to break from the customary ways and trial new means of providing healthcare, conducting research, and teaching students and trainees. However, in a country with limited resources,

there are obstacles in the association between a teaching hospital and medical school. Such associations are full of chances and encounters, in spite of having complementary objectives that could improve each other. Often, there is a tension between the two institutions, primarily owing to differences in terms of the administrative and management structures, lack of clear roles for each, difference in responsibilities and expectations, difference in financial sources and needs, and inadequate human resources. Although medical schools and teaching hospitals might face similar encounters globally, there could be context-specific comments that might vary in terms of resource-rich versus resource-limited environments.

The association between medical schools and teaching hospitals involves a multifaceted and mutable combination of monopoly and monopsony power. As such form of an association has not ethically been studied yet, no ethical guideline exists to direct the respective leaders in terms of responsible supervision of this complex power association. Considering that the ethics of monopoly and monopsony power is vital for the responsible supervision of this complex association, the leadership of AHCs can be supported to perform an essential task, which is to avoid the manipulation of monopoly and monopsony power in the association (Chervenak & McCullough, 2005). Based on rational self-interests drained from commercial ethics and co-fiduciary duty obtained from medical ethics, the centrality of transparency is considered to be the main element in this form of an association.

Therefore, a shared model instead of a competitive model might perform more efficiently for these organizations in both resource-limited and resource-rich environments (Muhnuke, Businge & Mukule, 2014). However, transformational leadership is obligatory for both, *i.e.,* for an efficient strategic planning to act in the best interests of medical education, medical professionals, patients, and provision of quality healthcare services.

CONCLUSION

Different types of teaching hospitals work together to educate and train the future healthcare workforce. To address the future challenges of academic medicine, a combined strength is needed by these teaching hospitals. Despite the efforts of medical school policymakers' in terms of regulating medical education at various teaching hospitals, the learning experiences of the medical students have been found to be significantly different. Therefore, the effort of a country's medical schools and teaching hospitals is vital for the respective nation's healthcare sector and development, which is collectively termed as academic medicine. The study of academic medicine aims at creating future physicians, conducting innovative research, and caring for ill patients and critical conditions.

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