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COMMENTARY IN HEALTH EDUCATION POLICY

Learning to live: The role of education policy for improving the quality of primary and preventative healthcare in the United States

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Abstract

From a policy standpoint, education and healthcare are often discussed separately in the United States. A review of the current literature reveals that education can be a strong predictor of individual health outcomes, indicating that these two spheres are most interrelated than currently recognized. The ways in which education influence health outcomes are complex and varied, and no single theory can explain the entire interaction. However, with this evidence, one can argue that US policymakers in search of healthcare interventions that improve outcomes without unbearable costs should work within education policy, recognizing that teachers in the US are also some of the country's most cost effective preventative care providers. Potential policy targets include universal Pre-K access and improved high school graduation rates.

KEY-WORDS: Education, Educational Attainment, Primary Care, Preventative Care.

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Riassunto

Da un punto di vista politico, educazione e salute vengono spesso discussi in modo separato negli Stati Uniti d'America. Una revisione della letteratura attuale rivela che l'educazione può essere un forte predittore di indicatori di salute a livello individuale, con ciò indicando come questi due ambiti siano molto più interconnessi di quel che viene attualmente creduto. I modi in cui l'educazione influenza gli indicatori di salute sono complessi e vari, e nessuna singola teoria può spiegare per intero tale interazione. Tuttavia, si può sostenere con tale evidenza che i decisori politici statunitensi che sono alla ricerca di interventi sanitari per il miglioramento degli indicatori di salute senza costi insopportabili dovrebbero lavorare sulle politiche per l'educazione, riconoscendo che gli insegnanti negli Stati Uniti d'America sono anche alcuni dei più efficaci fornitori di cure di tipo preventivo nel Paese. I potenziali obiettivi di intervento includono l'accesso universale prescolare e migliori tassi di diploma di scuola media superiore.

TAKE-HOME MESSAGE: Educational attainment is a strong predictor of health outcomes, and US policy makers should recognize education as a large component and alluring target of any policy to improve primary and preventative healthcare in the US.

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INTRODUCTION

In the United States, the quest toward the repeal of the Affordable Care Act (ACA) dominated the legislative agenda in early 2018. The Patient Protection and Affordable Care Act, also called as Affordable Care Act or nicknamed Obamacare, was passed in 2010 with one of its primary aims being to provide greater access to primary care physicians (PCPs), with the hope that this would increase access to quality healthcare and reduce costs. By the years 2020 to 2025, the country is expected to need 20,000 to 50,000 PCPs, even with complete integration of nurse practitioners and physician assistants [1–4]. To address this shortage, the ACA attempted to improve reimbursements to PCPs, increase the number of primary care training positions, and provide debt repayment options for primary care trainees [5]. This shortfall will need to be addressed by any administration that hopes to rein in healthcare spending without sacrificing the quality of care.

However, any healthcare policy will have to face this shortfall in its attempt to reduce cost without sacrificing outcomes. Prioritizing education-based initiatives could improve primary health care access and, as a result health outcomes in the United States and provide many positive externalities. Below, we review the current data regarding the health impact of

educational attainment, the time spent in the education system, to argue for prioritizing education policy as part of primary care reform, because education is true preventative care.

In 1998, the U.S. Preventive Services Task Force (USPSTF) wrote, “almost all prevention in our medical system is secondary, not primary, despite better evidence for the health benefits of primary prevention” [6, 7]. True primary prevention is the goal of the World Health Organization (WHO) and the Commission on Social Determinants of Health. These organizations identified social elements that predispose individuals to worse health outcomes, with educational attainment being a strong predictor of numerous health outcomes, independently of confounders such as income, employment, socioeconomic status, race, and health behaviors [8–11]. Less time in school yields worse health outcomes. For example, the rates of infectious diseases and chronic illnesses such as hypertension, heart disease, obesity, and dementia, are associated with low educational attainment [12–16]. These chronic health conditions represent the greatest causes of morbidity and mortality in the U.S. and the most expensive conditions to treat [17, 18]. A single intervention addressing all these conditions would revitalize the healthcare system, making it more effective, efficient, and fair. Education could be that intervention. In this commentary, we argue for the unrecognized yet essential role of the educational system in the current US healthcare system because education can function and preventative health care. Once that is recognized, education must emerge as a target of policy makers to improve health outcomes for the US population.

DISCUSSION

Education's influence on Health Outcomes

Educational attainment is a marker of overall health status and wellness. In a study of US military retirees, college degrees were associated with lower mortality, contributing to the health disparities between retired officers and enlisted personnel [19]. Similarly, individuals with a higher level of education consistently self-report a higher level of health status than their less educated counterparts, and studies have demonstrated that self-reported health is a stronger predictor of mortality than physician's assessment [11]. The health benefit of education also spans across decades and into future generations. Women who spend more time in school practice healthier habits during pregnancy, and birth healthier children [11, 20, 21]. Indeed, a mother's educational level predicts her children's self-reported health into the child's 5th decade of life [20].

The quality of the education, however, does not appear to impact education's health benefits. Spending more time in school, regardless of the educational content or quality, yields these same health benefits [11, 20]. Four additional years of schooling reduces mortality by 1.8% and provides measurable risk reductions for heart disease (2.16%) and diabetes (1.3%) among other diseases. One extra year of education augments life-expectancy by 0.18 to 0.60 years. Age-adjusted mortality for individuals aged 25-64 is two times greater for high school dropouts than for individuals with some college education [11]. Educational attainment improves self-perceived health status and decreases absenteeism, directly impacting an individual's ability to work and make a societal contribution [22–25]. Thus, from a utilitarian standpoint, educational

policy offers a target to benefit the population. With appropriate interventions, policymakers can reduce the prevalence of chronic diseases and associated healthcare costs. The improved health of the population would also have a positive impact on the workforce and, subsequently, the economy. Policy that further prioritizes educational attainment would create the greatest benefit for the greatest number of people, improving population health and productivity.

Educational attainment also influences health behaviors such as smoking and incarceration rates. When it comes to smoking, those with greater educational attainment are less likely to start, and also more likely to quit if they do start [26]. Since smoking is closely linked to heart disease, cancer, stroke, and COPD, which cumulatively account for 65% of all mortality in the United States, this is a major potential benefit for healthcare expenditures. Any interaction with the prison system is predictive of poor health outcome, and other nations have reported reductions in incarceration rates following education focused policy changes [27]. Educational attainment also increases participation in healthy behaviors. The more educated are more likely to utilize primary care and participate in preventative care interventions such as vaccinations, annual physical exams, and evidence based cancer screenings [16]. Thus educational attainment can even improve the efficacy of established preventative care measures by increasing patient participation.

A comparison of education and health outcomes, at the state level, confirms the associations between educational attainment and health outcomes. The US News publishes rankings of each state's pre-K–12 education systems which are based on factors such as high school graduation rates, National Assessment of Education Progress (NAEP) reading and math scores, and pre-K

enrollment and class size. The Commonwealth Fund ranks state health outcomes based on access, prevention, treatment, avoidable hospital use and costs, healthy lives, and equity. A comparison of these two ranking systems further suggests the connection between education and health care access, quality, and equality (Figure 1) [28, 29]. The heterogeneity among countries is more significant, but similar associations exist among developed countries when looking at OECD (Organisation for Economic and Co-operation and Development) education rankings and health outcomes. In short, regardless of the perspective, education positively influences health outcomes.

Theories behind Education's influence on Health Outcomes

There are numerous theories attempting explain education-derived health benefits. Literacy, willingness to invest in health, and navigating health care are the focus of three major theories explaining education's health benefits [11, 20, 31–35]. One theory postulates that the benefit of education comes from improved literacy. Indeed, literacy level or numeric ability can be predictive of health outcomes, future hospitalizations, and overall health itself [31–35]. Another theory suggests that higher educational attainment may give an individual greater hope for the future, which may in turn lead that individual to actively pursue preventative and primary care and motivate him or her to live a healthier lifestyle [11]. A third theory asserts that education imbues a capacity to deal with illness as it arises. Education provides an environment to learn life skills, such as decision-making and critical thinking, which help in navigating the healthcare system and managing chronic disease. Management of chronic diseases requires learning and adaptation, which may explain why those with greater educational attainment tend to manage

chronic diseases more effectively than their less educated counterparts [20]. This has been demonstrated with specific chronic illnesses such as asthma and chronic kidney disease [36–38]. Despite the differences in these theories, they unite around the concept of education-derived health benefits.

Potential Policy Targets

In education, health researchers have identified an intervention which improves overall and active life expectancy and decreases the incidence and prevalence of highly morbid chronic conditions. An intervention, such as educational attainment, that crosses socioeconomic boundaries and is universally accessible offers an opportunity to address disparities in the healthcare system and to create a more fair system. If education was a drug with the same proven benefits, it would be universally prescribed and marketed, grossing billions of dollars annually. As a policy, education has a similar potential for return on investment.

There are many potential policy changes that can capitalize on these associations, improving education and healthcare simultaneously. The first policy change is the development of universal pre-kindergarten (pre-K). Early education provides benefits such as higher future earnings and lower rates of arrest for the beneficiaries and it also improves educational attainment overall. Additionally, universal access would also address inequalities of the education and healthcare systems [39, 40]. Simultaneously, policy should emphasize improved graduation rates. The national high school graduation rate for 2012-2013 in the United States was 81.4%. This number varies widely across states boundaries and also socioeconomic and racial lines, with low income students graduating at rates as low as 9% [42, 43]. These rates should serve as a sign of the low-

lying fruit that need to be addressed in the interest of the nation's bodily and financial health. While there are numerous factors, such as extra-curricular activities and school size that have been associated with higher dropout rates, some school systems or individual schools have created programs to incentivize students to stay in school [44, 45]. One high school in Cincinnati, The Dohn Community School, made national news in 2012 when it decided to pay high school seniors a weekly stipend for perfect attendance; the proposed plan was to cost the high school $40,000. In a school with a 14% graduation rate, this may represent the type of novel thinking that such schools need to employ [46]. Other strategies with some supporting evidence to improve graduation rates include vocational training and charter schools [47, 48]. Still other options to explore include incentivizing families through tax benefits to keep children in school beyond the required age of 16, which is the minimum in many states [43].

CONCLUSIONS

In this commentary, we have reviewed the current data regarding the health impact of educational attainment, to argue for prioritizing education policy as a part of primary care reform in US. Regardless of how this issue may be politicized, the healthcare community at large should recognize the potential for positive change through educational policy. The link between educational attainment and health outcomes opens the door for bioethicists, public health specialists, and policy experts to move outside of their normal realm of influence and to investigate educational policy with the aim of creating effective, forward thinking, health policy. The overlap of education and healthcare policy strikes at the heart of many of the ethical debates that the United States now faces. Many of the racial, socioeconomic and religious debates that

have simmered for decades and flared up recently are at the heart of the debates over how the nation will rear its youth and care for its infirmed. The data summarized above blurs the borders between the education and healthcare systems. While each system has weaknesses, they are codependent. Just as one system cannot serve as a crutch for the other, strengthening one can lead to a positive change in the other. A partnership between policy experts from both would be another strong first step toward creating effective programs to improve the nation's education for the sake of the nation's health. Regardless of partisan lines, education and healthcare are two major domestic concerns for all Americans. The realization and recognition of the interdependence of these two concerns may prove to be a major step toward the shared goal of making the USA, or at least its healthcare system, greater than it has ever been.

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