

## **UC Davis**

### **Recent Work**

#### **Title**

Influence of Education Level on Medical History, PCP Frequency, and Insurance Type in the Punjabi Population

#### **Permalink**

<https://escholarship.org/uc/item/8s77m843>

#### **Author**

Bhagat Puran Singh Health Initiative

#### **Publication Date**

2022-06-28

#### **Data Availability**

The data associated with this publication are available upon request.

**Influence of Education Level on Medical History, PCP Frequency, and Insurance Type in  
the Punjabi Population**

Almas Khan, Samveda Rukmangadhan, Ritika Jhawar, Simranpreet Gakhal, Harjot Kaeley, and  
Meghana Mahantesh Magadum

*Electronic Medical Record Committee of the Bhagat Puran Singh Health Initiative, University of  
California, Davis Chapter*

## **Introduction:**

A patient's education level can have a great influence on their health outcomes. Education level affects the likelihood of a patient developing a disease, and how they manage it. Adults that are less educated have, on average, reported worse general health, more chronic conditions, and more limitations or disabilities (Raghupathi, Raghupathi). Previous studies have shown that higher levels of education lead to higher rates of preventative care (Fletcher and Frisvold, 2013). Furthermore, the style of physician care varies depending on a patient's education. When caring for patients with lower educational levels, physician's are more likely to have a directive, less patient-centered style by spending less time answering patient questions (Fiscella, Goodwin & Stange, 2002). Additionally, a patient's education level has a large impact on their insurance eligibility, accessibility and usage. With higher levels of education, patients are more likely to find a job and potentially qualify for employer-based insurance. Patients with higher education are more likely to obtain and understand their health insurance coverage and policies. Health literacy is a leading factor in patients gaining access to medical resources and it has been found that lower health insurance literacy has been linked to greater avoidance of medical visits (Tipirneni et al, 2018).

Our study seeks to explore the relationship between education and medical history, primary-care physician visit frequency, and insurance type specifically in the Punjabi population of the Greater Sacramento Area. Studies focused on the Punjabi population in the United States are rare. By focusing on a specific population, our study can best help patients and physicians in our target population by showing them community-specific trends, which will lead to community-specific solutions.

**Methods:**

The Bhagat Puran Singh Health Initiative (BPSHI) patient population was assessed using data collected by student volunteers at Mobile Clinics across the Greater Sacramento Area. The Mobile Clinics were located at Gurdwaras, a Punjabi temple. BPSHI student volunteers noted the patient's demographics, and collected patient vitals. The categorical variables in our dataset are Insurance Type, Medical History, PCP Frequency, and Education level. The categories for Insurance Type are Employer-Based, Private Insurance, Medicare, Medical, No Insurance, Other, & Not completed. For Medical History, the categories are Hypertension, Hyperlipidemia, Hyperthyroidism, and Other. The categories for PCP Frequency are greater than or equal to once per month, greater than or equal to once per year, or less than once per year. The categories for Education Level are Below high school, High school, Bachelor's Degree, Professional/Graduate Degree, Other, and Not completed.

In this study, the distribution of education levels, insurance types, primary-care visit frequency, and medical history was examined. Additional analysis of insurance types, primary-care visit frequency, and medical history by education level was performed to investigate the relationship between education and the factors mentioned before.

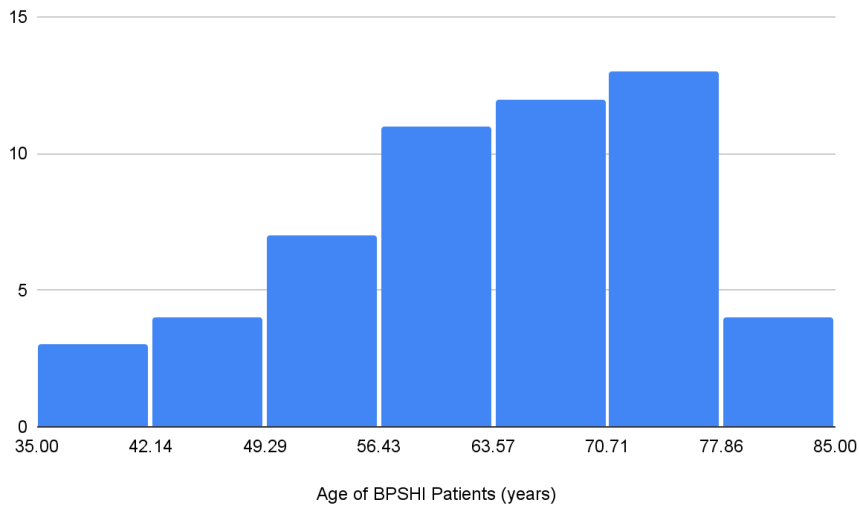
**Results:**

We analyzed general trends for three variables: age, education level, insurance type, and PCP frequency. Most BPSHI patients are in the middle-aged to geriatric population (Figure 1). The distribution of education levels is skewed right, with higher levels of education being less common. A high school education is the most common highest attained level of education, around 30% of participants fall into this category. (Figure 2). Analysis of insurance distribution

showed that Medicare and “Other” are the most common healthcare providers with 26% of patients with Medicare and 27% with “other” (Figure 3). Medical is the second most common insurance type with 15% of patients. The distribution of frequency of visits showed that 45% of patients visited primary care physicians greater than or equal to 1x per year (Figure 4). When examining medical history, one of the most common conditions amongst patients is hypertension, which affects 48% of participants. Hyperlipidemia and diabetes are the next most prevalent conditions, both have around the same incidence of 20% within participants (Figure 5).

Analysis of insurance type by education level shows that the most common insurance type in individuals with less than high school education is Medicare (Figure 6). The second most common insurance type for individuals with high school education is also Medicare. It can also be noted that the “Other” insurance type option is more prevalent among individuals with higher education levels. The distribution of medical history by education level is skewed right (Figure 7). It is important to note that across all levels of education, hypertension is the most common medical problem. When comparing frequency of visits to a primary-care physician with education level, an overwhelming amount of participants with a high school degree or below high school level education visit their primary-care physicians greater than or equal to once per year (Figure 8). For participants with a bachelor’s degree or greater level of education, the distribution for frequency of visits is more normal.

**Figure 1. BPSHI Patient Age**



BPSHI Patients are mostly elderly, with most being above 56 years old and below 78 years old (n = 111). The average age was 63 years old.

**Figure 2. Highest Education Level Attained**

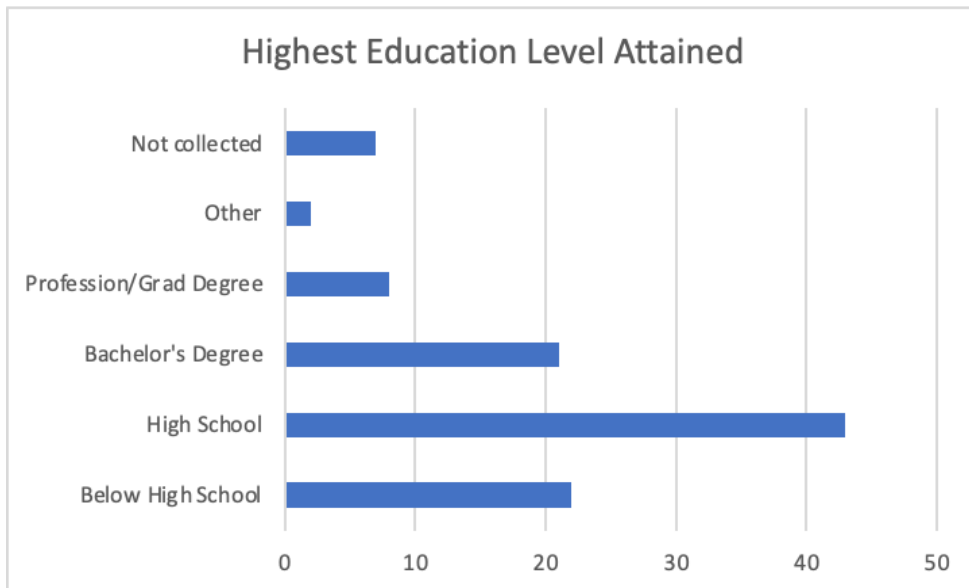


Figure 2 looks at the highest education level attained by patients (n = 103). High school is the most common highest attained level of education (n = 43, 30%).

**Figure 3. Primary Insurance Provider Types**

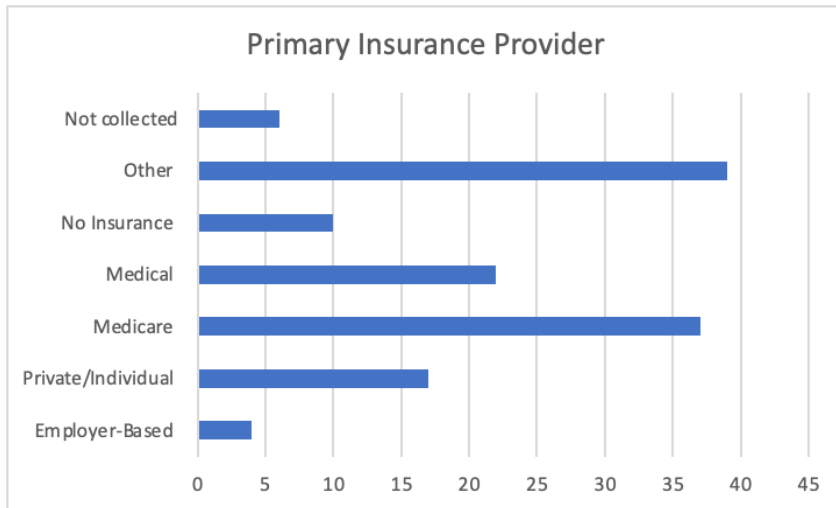


Figure 2 displays the number of individuals (n = 135) that have a certain type of insurance. Medicare and “other” are the most common healthcare providers (n = 37, 39 respectively).

**Figure 4. Primary Care Provider (PCP) Visit Frequency**

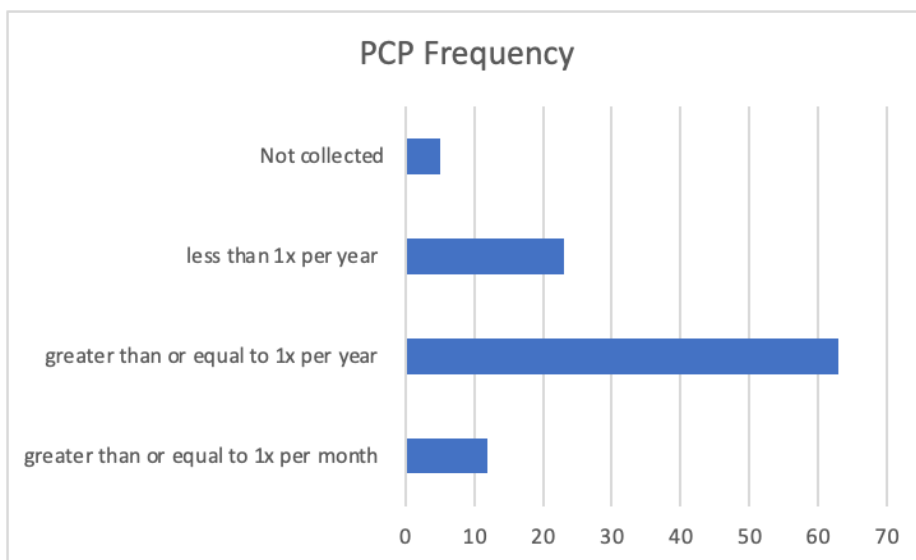
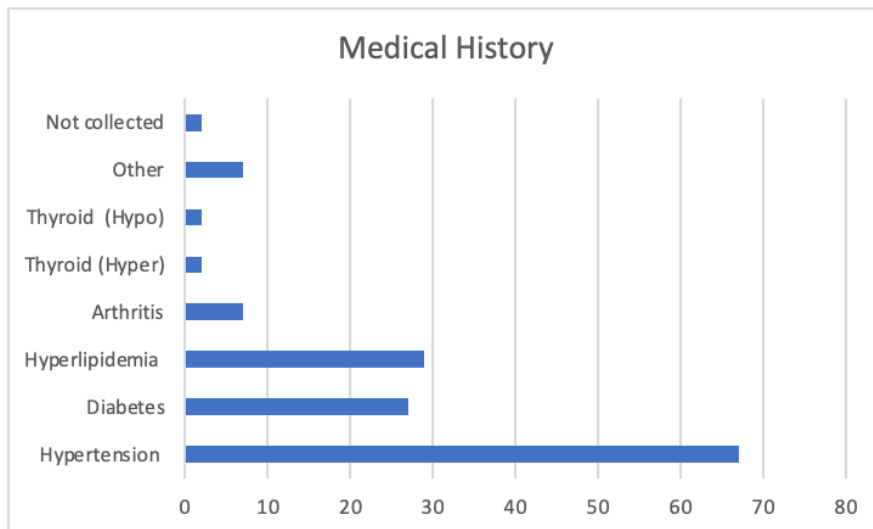


Figure 4 examines a patient’s frequency of visits to a primary care provider (n=103). A majority of patients visited primary care physicians greater than or equal to 1x per year (n=63, 45%).

**Figure 5. Medical History**



One of the most common conditions amongst patients (n=67, 48%) is hypertension.

Hyperlipidemia and diabetes both have around the same incidence (n = 29, 27, both 20%).

**Figure 6. Insurance by Education Level**

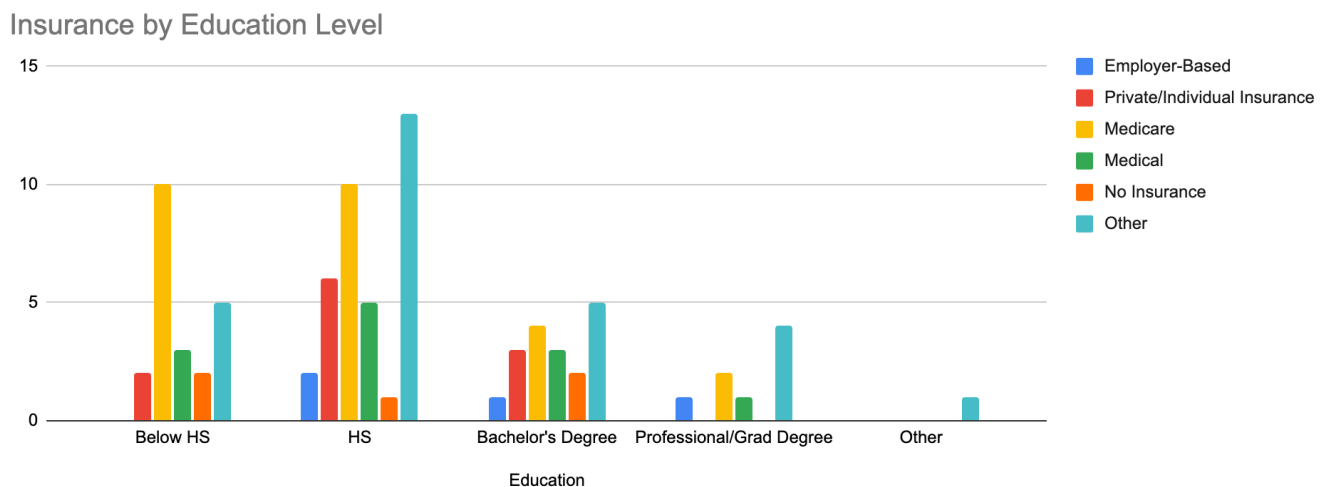


Figure 6 shows the high prevalence of Medicare as the insurance type for patients with an education level of high school and below.



**Figure 7. Medical History by Education Level**

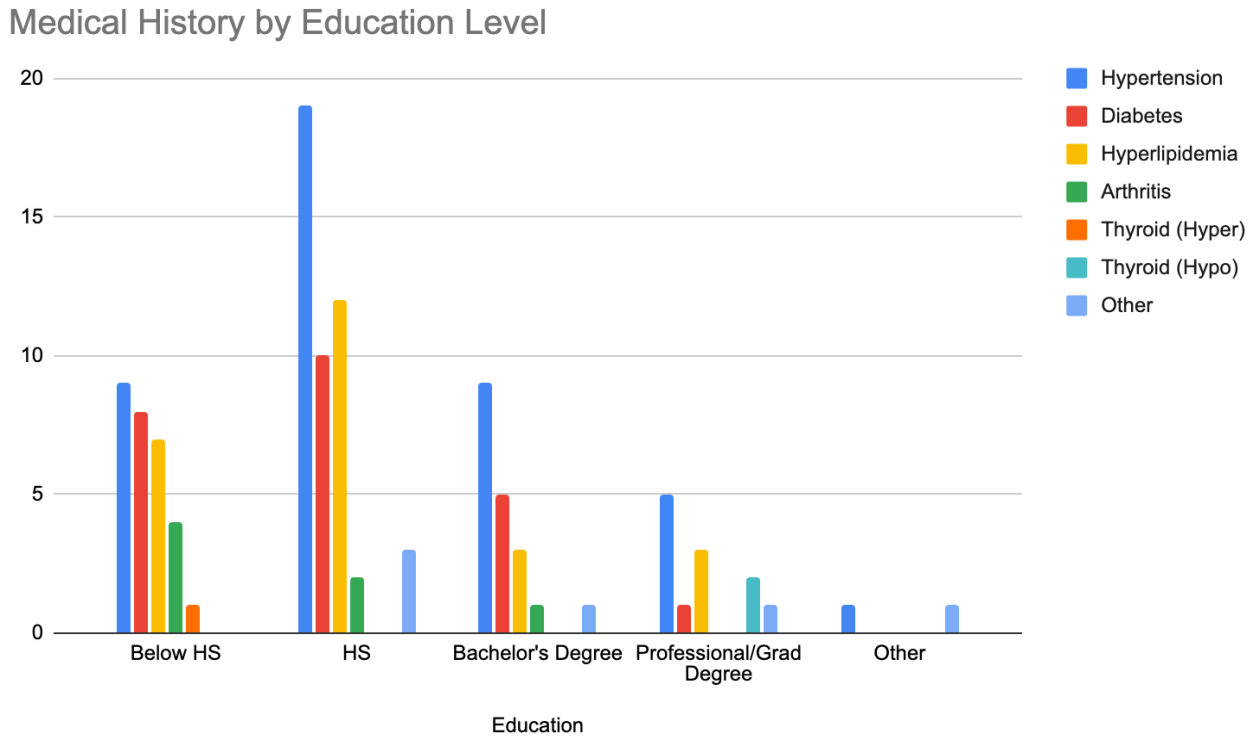


Figure 7 illustrates that patients that came in with education below high school or with a high school diploma presented with a greater amount of medical problems than those with a bachelor's degree or a professional/graduate degree. Hypertension was the most common medical problem regardless of education level.

**Figure 8. Frequency of Visits by Education Level**

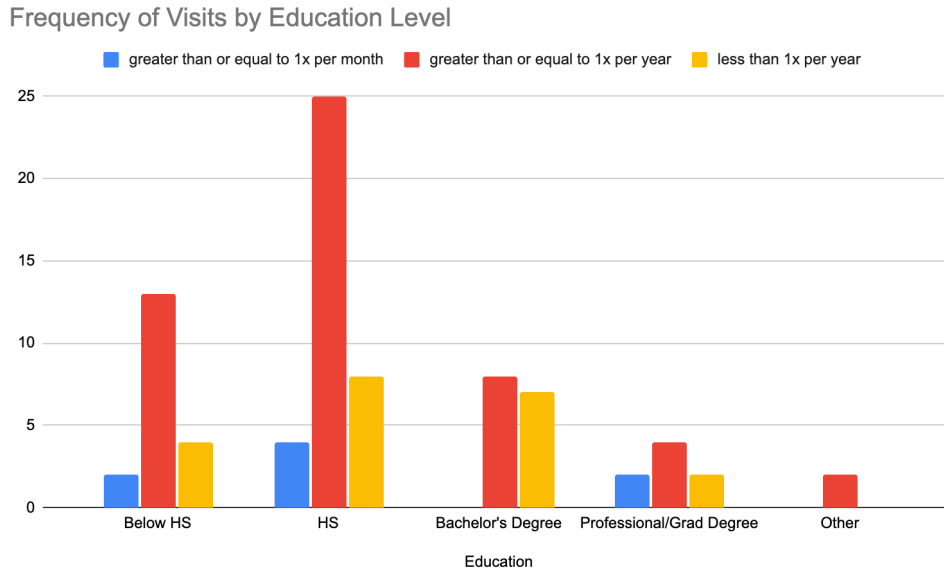


Figure 8 highlights that across all education levels, patients visit their primary care physician greater than or equal to 1x per year the most. Patients visiting their primary care physician less than 1x per year was the second most common frequency across all education levels.

**Discussion:**

Previous research has shown that lower education levels are often accompanied by worse health outcomes compared to those who possess higher levels of education which supports the trend seen in Figure 7 when comparing medical history and education level (Zajacova & Lawrence, 2018). Those with lower levels of education may have had less exposure to health education and resources than their counterparts who may have had exposure in university or trade school. Most participants in this study reported having a highschool degree, and fewer patients reported having a bachelor's degree or below high school levels of education (Figure 2). This illustrates the need for BPSHI to help bridge the gap in health education and literacy in the

local underserved South Asian community through outreach. Outreach regarding hypertension management, however, should be promoted generally due to its widespread prevalence indiscriminate of education levels (Figure 7). In a survey conducted between 24 states and Indian territories, it was concluded that hypertension affects almost 1 in every 3 Indian adults (Ramakrishnan et al., 2020). It is essential that BPSHI educates the entire Punjabi American community on ways to lower high blood pressure levels.

Analysis of the relationship between education level and insurance type in Figure 5 suggests that there is an increased likelihood of individuals having Medicare as their primary insurance given that they have an educational level of high school or below (Figure 6). Many individuals part of the Asian population, approximately 40.7%, that reside in California have been found to be dually eligible for Medicare beneficiaries (Department of Health Care Services). Despite a large number of individuals qualifying based on the average age of BPSHI patients (63 years old), 10 participants reported not having any type of insurance, which is a notable amount (Figure 1; Figure 3). This may be due to a lack of access to culturally sensitive health education and literacy. In a 2010 Canadian study, it was concluded that both Chinese and Punjabi speaking immigrants feel like they have unmet healthcare needs due to language barriers, difficulty interpreting medical jargon, excessive cost, not receiving desired gender of provider, and overall limited time consulting with the doctor (Marshall et al., 2010). To alleviate unmet healthcare needs and help patients fully utilize their insurance plans, BPSHI can educate the local underserved South Asian community on the different health insurance options by having culturally sensitive workshops in multiple languages to provide them with the explanations that they need. To tackle issues of social and cultural barriers, BPSHI can create

educational resources on simple medical terminology and employ methods to work around language barriers for both patient and provider.

When examining the relationship between education level and PCP frequency, most patients visited their primary care physician greater than or equal to 1x per year, irrespective of education level (Figure 8). This finding matches the trend found in Figure 4, as patients overall most frequently visit their primary care physician greater than or equal to 1x per year. However, there is a higher prevalence of a PCP frequency greater than or equal to 1x per month in patients with a highschool education and below (Figure 8). Most chronic diseases need frequent check-ups, and this could be an indication of higher levels of chronic disease in less educated populations. BPSHI volunteers should keep this possibility in mind when explaining diseases to patients during clinics, and should ensure their explanations can be understood by patients of all education levels.

There are limitations to the data collection method as the patients were asked orally about their education level. Errors may have been made while recording the data orally due to background noise and miscommunication or resulted in the selection of “Other” categories in the surveys. It is important to note that more patients reported having an “Other” type of insurance than any of the listed options which indicates that data collection could be improved by increasing the survey options for this question or broadening the groups of insurance types (Figure 3).

## **Conclusion**

In general, education levels affect a patient’s Insurance type, PCP frequency, and medical history. As a majority of BPSHI’s patients have lower education levels, it is imperative that all

BPSHI materials, like pamphlets and posters, can be easily understood by all patients.

Furthermore, volunteers should explain medical conditions in a simplified way without complex medical jargon. In the future, BPSHI can analyze how education levels affect patient employment status, as well as other lifestyle factors, like nutrition and exercise habits.

## References

DEPARTMENT OF HEALTH CARE SERVICES. (2022, February 18). Profile of the California Medicare Population. <https://www.dhcs.ca.gov/>. Retrieved May 25, 2022, from <https://www.dhcs.ca.gov/services/Documents/OMII-Medicare-Databook-February-18-2022.pdf>

Fiscella K, Goodwin MA, Stange KC. Does patient educational level affect office visits to family physicians? *J Natl Med Assoc.* 2002 Mar;94(3):157-65. PMID: 11918385; PMCID: PMC2594098.

Fletcher, J. M., & Frisvold, D. E. (2009). Higher Education and Health Investments: Does More Schooling Affect Preventive Health Care Use?. *Journal of human capital*, 3(2), 144–176. <https://doi.org/10.1086/645090>

Marshall, E. G., Wong, S. T., Haggerty, J. L., & Levesque, J. F. (2010). Perceptions of unmet healthcare needs: what do Punjabi and Chinese-speaking immigrants think? A qualitative study. *BMC health services research*, 10, 46. <https://doi.org/10.1186/1472-6963-10-46>

Raghupathi, V., Raghupathi, W. The influence of education on health: an empirical assessment of OECD countries for the period 1995–2015. *Arch Public Health* 78, 20 (2020). <https://doi.org/10.1186/s13690-020-00402-5>

Ramakrishanan, S., & Gupta, K. (2020). Prevalence of hypertension among Indian adults: Results from the great India blood pressure survey. *Indian heart journal*, 72(3), 217. <https://doi.org/10.1016/j.ihj.2020.04.013>

Tipirneni R, Politi MC, Kullgren JT, Kieffer EC, Goold SD, Scherer AM. Association Between Health Insurance Literacy and Avoidance of Health Care Services Owing to Cost. *JAMA Netw Open*. 2018;1(7):e184796. doi:10.1001/jamanetworkopen.2018.4796

Zajacova, A., & Lawrence, E. M. (2018). The relationship between education and health: Reducing disparities through a contextual approach. *Annual Review of Public Health*, 39, 273–289. <https://doi.org/10.1146/annurev-publhealth-031816-044628>