

Low Health Literacy: Treacherous Foe of Patient Compliance in Developed Countries

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EDITORIAL

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Health literacy enhances a population's self-care capacity and helps to reduce health inequalities. Low health literacy (LHL) is associated mostly with mature patients with chronic health conditions, who have limited education, not necessarily from a lower income group, and those who cherish superstitions and stigma inside their preset narrow mind that prevents them from gathering some relevant information about health or health system access, diseases, and drugs from their surroundings, with a few exceptional cases. Also, being generally literate does not automatically make one to be health literate. LHL is not uncommon among patients with a high education level or well-off patients [1].

The cost of illiteracy to the global economy is estimated at \$1.19 trillion [2] but LHL alone costs the US economy more or less \$200 billion every year [3]. Only 12% of Americans have adequate health literacy and according to the US Centers for Disease Control and Prevention (CDC), improving health literacy could prevent nearly 1 million hospital visits and save over \$25 billion a year [4]. LHL influences a lot of patients' treatment guideline compliance or more directly medication adherence leads to poorer health outcomes, higher healthcare expenditures, increased hospitalizations, and even higher mortality rates in patients with chronic diseases [5]. Individuals with poor health literacy often incur higher medical costs. Medication non-adherence contributes around 60% of the \$500 billion total avoidable costs attributed to suboptimal medicine use globally each year [6].



CHERISH SUPERSTITIONS AND STIGMA INSIDE THEIR PRESET NARROW MIND THAT PREVENTS THEM FROM GATHERING SOME RELEVANT INFORMATION ABOUT HEALTH

Journal of Health Communication, 2013



**POORER HEALTH OUTCOMES
HIGHER HEALTHCARE EXPENDITURES
INCREASED HOSPITALIZATIONS
EVEN HIGHER MORTALITY RATES**

Role of the Pharmacist in Patient Care, ISBN: 978-1627343084



HEALTH LITERACY COULD PREVENT 1 MILLION HOSPITAL VISITS AND SAVE OVER \$25 BILLION A YEAR

CDC on US Population, 2021



COSTS THE US \$238 BILLION EVERY YEAR

BMC Health Services Research, 2022



COMMON TO BOTH DEVELOPED AND UNDER-DEVELOPED COUNTRIES AROUND THE WORLD

UCL Institute of Health Equity, 2015



PREVALS AMONG 40% OF THE US AND THE UK ADULTS 60% IN CANADA, AUSTRALIA, UAE'S ADULT POPULATION, THE EUROPEAN OLDER POPULATION AND MORE THAN 65% CHINA POPULATION

Annals of Epidemiology & Public Health, 2022



ONLY 12% AMERICANS HAVE ADEQUATE HEALTH LITERACY ACCORDING TO THE CDC

US Centers for Disease Control and Prevention (CDC), 2021



ASSOCIATED WITH ECONOMIC RAMIFICATIONS AT THE INDIVIDUAL, EMPLOYER, AND HEALTHCARE SYSTEM LEVELS

Lancet Global Health, 2018



LEADING CAUSE OF OBESITY, DIABETES, AND HYPERTENSION IN GERMANY

Hamburg Diabetes Prevention Survey, 2022



PATIENTS WITH LHL, BUT WITH HIGH EDUCATION, HAD A HIGHER PROBABILITY OF EMERGENCY DEPARTMENT RE-VISITS

Hamburg Diabetes Prevention Survey, 2022

INFLUENCED BY AGE, RESIDENCE, EDUCATION, AND FAMILY STATUS

BMC Primary Care, 2022



MORE THAN 50% DUTCH HEALTH PROVIDERS RARELY USED HEALTH LITERACY SPECIFIC MATERIALS

PLoS One, 2022



MAJOR PERCEIVED BARRIERS TO COVID-19 VACCINE UPTAKE

JMIR Formative Research, 2022



INADEQUATE HEALTH LITERACY IS NOT UNCOMMON AMONG PATIENTS WITH A HIGH LEVEL OF EDUCATION

Journal of Health Communication, 2013



ASSOCIATED WITH GESTATIONAL DIABETES, MATERNAL STRESS AND DEPRESSION, LOW BIRTH WEIGHT, STILLBIRTH, AND CONGENITAL MALFORMATIONS, DURING PREGNANCY AND BIRTH

Sexual & Reproductive Healthcare, 2022



HAVE DIFFICULTY UNDERSTANDING PRESCRIPTION LABELS, PARTICIPATING IN MEDICAL DECISIONS, FOLLOWING MEDICAL RECOMMENDATIONS, AND ATTENDING THEIR FOLLOW-UP

Journal of the American Medical Association, 1995



COST OF LOW HEALTH LITERACY IS BETWEEN 7-17% OF ALL HEALTHCARE EXPENDITURES

BMC Health Services Research, 2022



ASSOCIATED WITH FREQUENT UTILIZATION OF EMERGENCY MEDICINE

Frontiers in Public Health, 2021



PREVALENCE IN THE EMERGENCY DEPARTMENT IS GENERALLY HIGH WITH ESTIMATES UP TO 88%

Academic Emergency Medicine, 2014



LOWER PARENTAL HEALTH LITERACY WAS ASSOCIATED WITH POORER CHILD HEALTH OUTCOMES IN BOTH HIGH AND LOW INCOME COUNTRIES

Journal of Pediatrics and Child Health, 2022



ASSOCIATED WITH PATIENTS WHO ARE OLDER, HAVE LIMITED EDUCATION, LOWER INCOME AND CHRONIC CONDITIONS

Nurse Practitioner, 2018



FOUND IN 70% OF FORMAL PAID ELDERLY CAREGIVERS IN TUSCANY, ITALY AND MORE THAN 50% OF CAREGIVERS OF PATIENTS WITH HEART FAILURE IN USA

Aging Clinical and Experimental Research, 2023



1.5-3 TIMES MORE LIKELY TO HAVE ADVERSE HEALTH OUTCOMES

Trials (BMC), 2022



SIGNIFICANTLY ASSOCIATED WITH INCREASED MORTALITY AND HOSPITAL READMISSION AMONG CARDIAC PATIENTS

Patient Education and Counseling, 2022



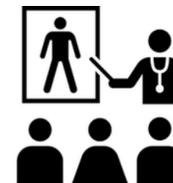
ONLY 20% MILITARY HEALTH PROVIDERS OF THE CHINESE ARMY HAVE ADEQUATE HEALTH LITERACY

BMC Public Health, 2023



IMPROVING HEALTH LITERACY CAN REDUCE POLYPHARMACY RISK, MEDICATION NON-ADHERENCE AND HEALTHCARE COSTS

British medical journal, 2022



MORE PREVALENT IN GLAUCOMA NONADHERENT PATIENTS

1996-2017 Medical Expenditure Panel Survey



NEARLY 35% OF DIABETES PATIENTS HAVE LIMITED EDUCATION REGARDING HEALTH IN GENERAL

PLoS One, 2019



HALF OF THE GERMANS HAVE LHL, 20% TO 25% OF THEM ARE NOT VACCINATED AGAINST COVID-19

Federal Health Gazette (Springer), 2022

Evidence shows that LHL is significantly associated with economic ramifications at the individual, employer, and healthcare system levels. But it is common to both developed and under-developed countries around the world and socio-economic conditions are not at all the sole factor of LHL. Surprisingly, close to 40% of the US and UK adults have LHL [7, 8], which is around 60% in Canada [9], Australia [10], UAE's adult population [11], and the European older population [12]. Even China, home of the world's greatest scientists and inventors, issued "Health China 2030" in 2016, planning the national health literacy rate to increase to 30% by 2030 [13]. The GDP per capita of these countries ranges from \$11,800 to \$62,200, based on Trading Economics-2022 data.

Many studies reveal that patients from high-income countries are not adequately adherent to medications as they are prescribed. Forgetfulness, confusion about the duration required for medication use, and mistrust about the overall efficacy of medication are among the reasons for non-adherence to diabetes management protocols in Middle Eastern countries [14]. After World War II, Taiwan faced severe poverty which is now the 8th largest economy in Asia and also home of T2DM patients with 82% health literacy [15].

Canada is the top most educated country with a GDP close to 2 trillion and a GDP per capita of more than \$44,000—a recent survey granted by the Royal University Hospital Foundation in two urban tertiary care hospitals in Saskatoon shows that around 50% of the patients admitted to the general internal medicine unit had LHL. Moreover, patients with LHL, but with high education, had a higher probability of emergency department re-visits [16].

A cross-sectional study of 259 school leaders in Hong Kong carried out during the COVID-19 pandemic between April 2021 and February 2022 shows that more than 50% of participants had LHL and their LHL was strongly associated with a negative attitude about vaccination, low information, confusion about COVID-19-related information and secondary symptoms of burnouts [3].

In the USA, a cohort study by Vanderbilt Center for Health Services Research (Nashville, Tennessee) of over 46,000 hospitalized patients showed that hypertension was more common in people with LHL. Also, the authors of the Hamburg Diabetes Prevention Survey, a population-based cross-sectional study in Germany concluded that LHL is an important factor in the 3 conditions of metabolic syndrome—obesity, diabetes, and hypertension [17].

Finally, it can be said that LHL is associated with patient non-compliance but it warrants further studies to judge whether it is the top-most reason for the same or not, as many studies conducted in developed countries revealing a high prevalence of cost-related patient non-adherence. Nevertheless, it can

be said beyond reason health literacy provides a benefit in addressing the health needs of even the most disadvantaged and marginalized communities. To improve adherence, patients need to clearly and appropriately understand health information related to their specific illness or disease. This understanding may be essential to helping patients generate the motivation, beliefs, and appropriate health behaviors needed to improve overall adherence behaviors. LHL is a curse, it has to be minimized. All healthcare providers, stakeholders, government, and community authorities should work on it.

DECLARATION

The study states an impartial judgment; the author is not biased, supports differences of opinion, logic and believes that facts can be changed with time.

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None

CONFLICT OF INTEREST

The author declares that he has no competing interests.

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