

Advancing Health Equity through Educational Access: Interventions that Transform Health Outcomes for Marginalized Children

GIA: GLOBAL INITIATIVES ALLIANCE
BRIDGING SOCIETY: ENACT REAL CHANGE
HYUNWOO SUH, JOOHEE SEO, JANICE JOO, TREVOR PARK



INTRODUCTION

- Educational disparities heavily affect health outcomes, especially in marginalized communities.
- Research identifies education as a key social determinant of health.
- Studied impacts on low-income, disabled, and socially marginalized children.
- Found a causal link: 4 more years of education reduces 5-year mortality by 1.8 percentage points.

Our investigation applied Nutbeam’s health literacy framework to evaluate how educational interventions equip children with three essential levels of health literacy:

- Functional Literacy:** Basic knowledge of nutrition, disease prevention & healthcare systems
- Interactive Literacy:** Skills to actively participate in healthcare decisions
- Critical Literacy:** Ability to critically analyze health information and navigate complex health systems

This research addresses the urgent need for evidence-based educational interventions that can reduce disparities and improve long-term physical and mental health outcomes for our most vulnerable populations.

DESIGN AND METHOD

Systematic Literature Review

- Peer-reviewed studies identified via PubMed, ERIC, Scopus, and Google Scholar
- Inclusion Criteria: Studies published between 2010–2025 focusing on K–12 educational interventions targeting underserved populations were included.

Frameworks Applied

- Nutbeam’s health literacy framework (functional, interactive, and critical literacy).

Data Synthesis

- Key themes: impact of education on physical and mental health outcomes, culturally responsive teaching methods, and digital tools for improving health literacy.

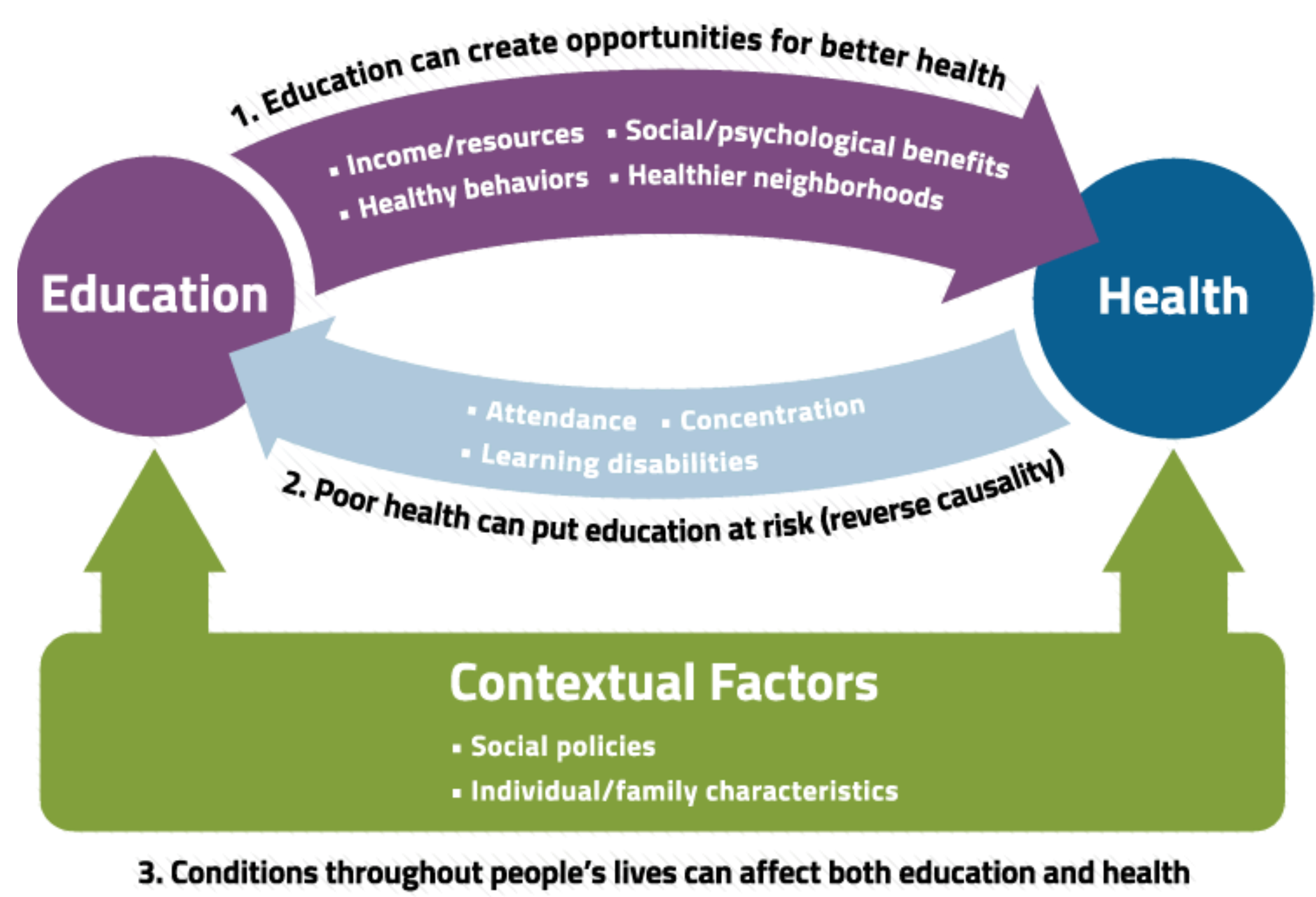


FIGURE. 1
Bridge between
Education & Health

CONNECTION BETWEEN EDUCATION & HEALTH

- Physical Health:** Education fosters healthier habits (nutrition, exercise, preventive care), reducing chronic illness risk (Virginia Commonwealth University, 2014).
- Mental Health:** Each additional year of education reduces depression symptoms by 11.3% and anxiety by 9.8%, with stronger effects for women (Bai et al., 2023).
- Life Expectancy:** 18-year gap between high- and low-income countries, largely due to educational disparities (WHO, 2023).
- Health Behaviors:** Higher education is linked to lower smoking rates and healthier lifestyle choices (Cutler & Lleras-Muney, 2010).

References:
<https://pmc.ncbi.nlm.nih.gov/articles/PMC6225398/>
<https://www.mdpi.com/1660-4601/19/15/9002>
<https://pmc.ncbi.nlm.nih.gov/articles/PMC9306722/>
<https://catchinfo.org/>
<https://snaped.fns.usda.gov/library/intervention/catch---coordinated-approach-to-child-health#:~:text=The%20CATCH%20Program%20was%20first,nutrition%20and%20physical%20activity%20behaviors.>

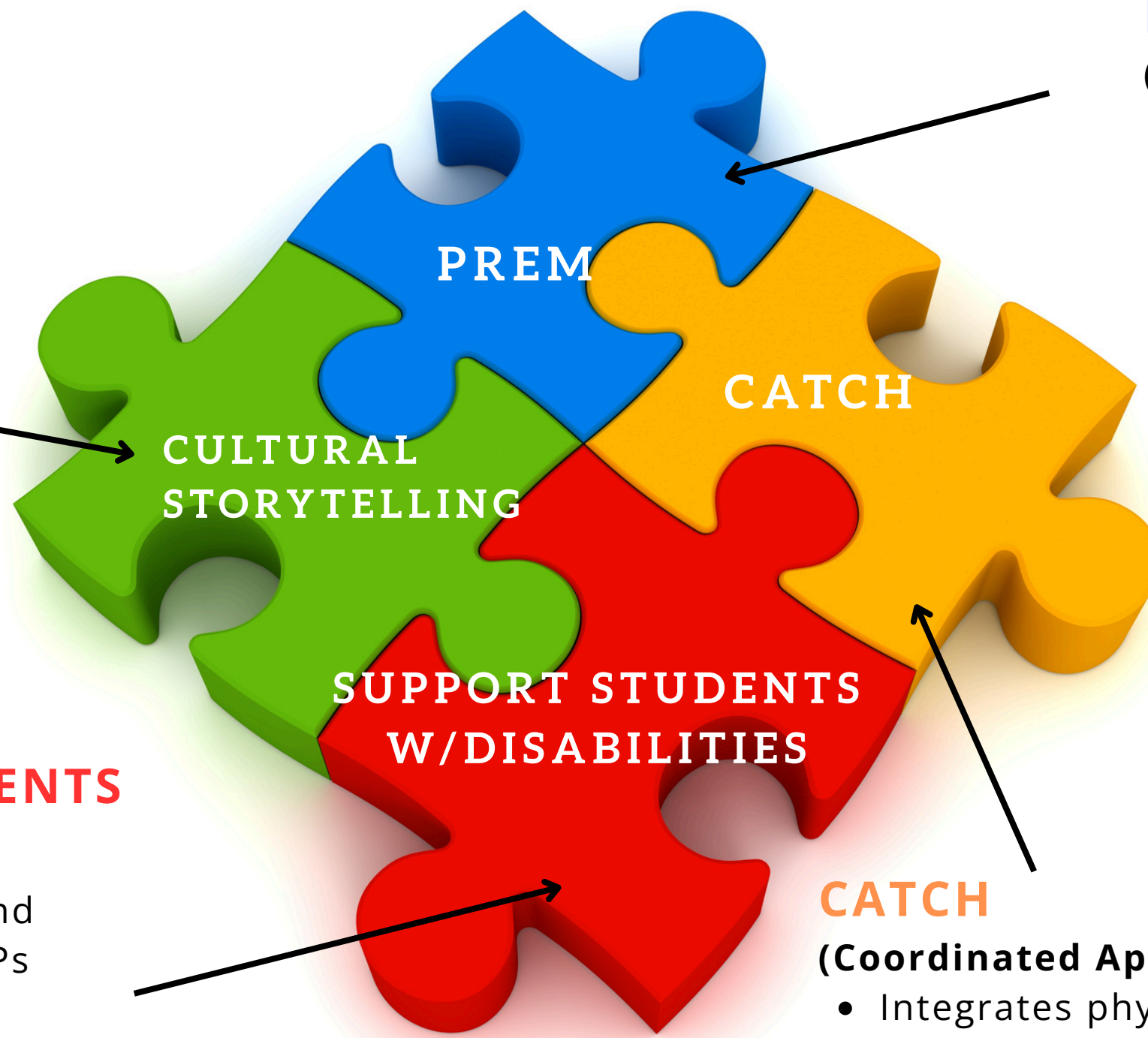
SUCCESSFUL EDUCATIONAL INTERVENTIONS:

CULTURAL STORYTELLING

- Culturally responsive workshops in Los Angeles increased pediatric check-ups through relevant health messaging

SUPPORT FOR STUDENTS W/DISABILITIES

- Adaptive technologies and behavioral therapy in IEPs improve access and engagement for students with learning differences (California Courts, 2024)



PREM

(Preschool and Me):

- Community-clinical linkage for preschoolers with developmental delays
- Improves access to therapeutic and educational services

FIGURE. 2
4 of the most notable
successes in intervention

CATCH

(Coordinated Approach to Child Health):

- Integrates physical education and nutrition lessons within school day
- 15% reduction in childhood obesity
- 45% reduction in e-cigarette initiation (CATCH Program Overview, 2023)
- Long-term improvements in nutrition knowledge and physical activity

RESULTS

Education's Impact on Health:

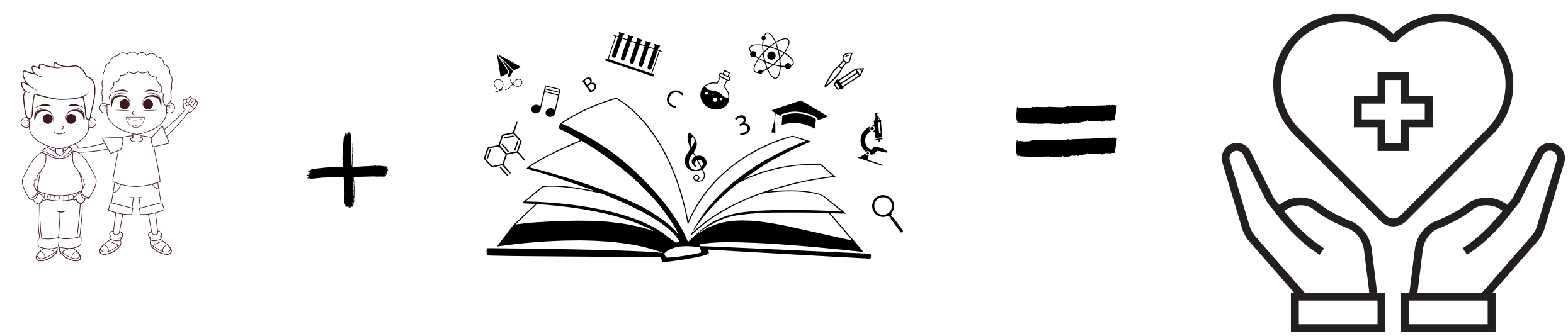
- Each year of education reduces depression by 11.3% and anxiety by 9.8% (Bai et al., 2023)
- 15% reduction in childhood obesity through CATCH
- 45% reduction in e-cigarette initiation (CATCH My Breath)
- Education leads to healthier behaviors and better access to care
- Intersectional barriers require culturally tailored, flexible interventions

Characteristic	n (%)		
	Adequate Health Literacy (42–50 points)	Inadequate Health Literacy (0–41 points)	Total
Underweight	2 (33)	4 (67)	6 (1)
Normal weight	51 (36)	89 (64)	140 (28)
Overweight	71 (36)	125 (64)	196 (39)
Obesity	49 (31)	109 (69)	158 (32)
Total	173 (100)	327 (100)	500 (100)

FIGURE. 3
Data reveals a clear
association between lower
health literacy and higher
rates of overweight and
obesity in children.

Intersectionality & Implementation Challenges:

- Compounded barriers for children facing poverty, disability, and/or racial discrimination (Graham & Pinto, 2019)
- \$857 billion annual K–12 investment, yet persistent disparities in resources (Education Data Initiative, 2023)
- 15% of households with school-aged children lack high-speed internet, with greater disparities in low-income/rural areas (U.S. Census Bureau, 2024)
- COVID-19 widened educational and health gaps



CONNECTION BETWEEN IHA’S MISSION

- Examines education as a critical social determinant of health literacy
- Highlights **innovative approaches** like digital tools and culturally responsive teaching methods
- Provides **actionable strategies** for improving health literacy across diverse populations
- Addresses intersectional barriers that affect entire communities
- Aligns with the 2025 conference theme of **"Building Health Equity Through Innovation and Inclusion"**

CHARTS AND ANALYSIS

Characteristics ^a	n	%
Female	2,863	55.7
Age (years)		
25–35	1,070	20.8
36–45	1,473	28.7
46–55	1,230	23.9
56–65	1,363	26.5

Even in a relatively well-educated, healthy female population, health literacy is low for most people

Level of education		
Preprimary/primary	284	5.5
Lower secondary	1,256	24.5
Upper secondary	1,553	30.2
Tertiary	2,027	39.5

Self-reported general health		
Excellent	797	15.5
Very good	1,198	23.3
Good	2,354	45.8
Fair	675	13.1
Poor	103	2.0
Missing	9	0.2
Mental health ^b		
Good mental health	4,537	88.3
Physical health ^c		
Good physical health	3,505	68.9

Figure 4: This table summarizes the demographic and health characteristics of a study population (n ≈ 5,150).

Health literacy level		
Level 1 (very poor)	542	10.6
Level 2 (poor)	2,227	43.4
Level 3 (adequate)	2,138	41.6
Level 4 (strong)	229	4.5

CONCLUSION

Education access is a cornerstone of health equity. By equipping marginalized children with health literacy and knowledge, educational interventions reduce disparities and foster resilience. **The relationship between education and health is bidirectional: education improves health, and good health supports educational achievement.**

Investing in educational equity means investing in the health of individuals, communities, and future generations.

RECOMMENDATIONS

- Prioritize funding for high-poverty and underserved districts
- Integrate digital literacy and provide equitable technology access
- Train educators in cultural competency and inclusive practices
- Strengthen school-healthcare partnerships for early intervention
- Conduct longitudinal research on long-term health impacts of educational interventions