

The impact of low critical health literacy on diabetes outcomes among Latinx adults in the United States

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Introduction

Diabetes burden among the Latinx community

- Prevalence of diagnosed diabetes: 24.3% of Latinx compared to 14.9% of non-Latinx Whites.¹
- Latinx are 50% more likely to die from diabetic complications compared with non-Latinx.¹

Critical health literacy as a contributing factor for diabetes management

- Critical health literacy is the ability to navigate the healthcare system and make appropriate decisions about one's health.²
- Low health literacy is frequent among the Latinx community in comparison to their counterparts³ (Figure 1).
- Large discrepancies in health outcomes and education highlight a need for more effective diabetes treatment on a population-wide scale for the Latinx community.

Study Aims

- The aim of this literature review was to examine the role of critical health literacy in diabetes outcomes of the Latinx community in the United States.

Methods

Scope and criteria: Systematic review

- Articles published within 15 years
- Ability to discern critical health literacy from other forms of health literacy
- Addressing specific diabetes health outcomes
- Published within the United States

Database Utilized

- Pubmed, exclusively gray literature

Keywords

- Critical health literacy, diabetes, Latino, California

Organized review

- By purpose, key findings, solutions/interventions, gaps



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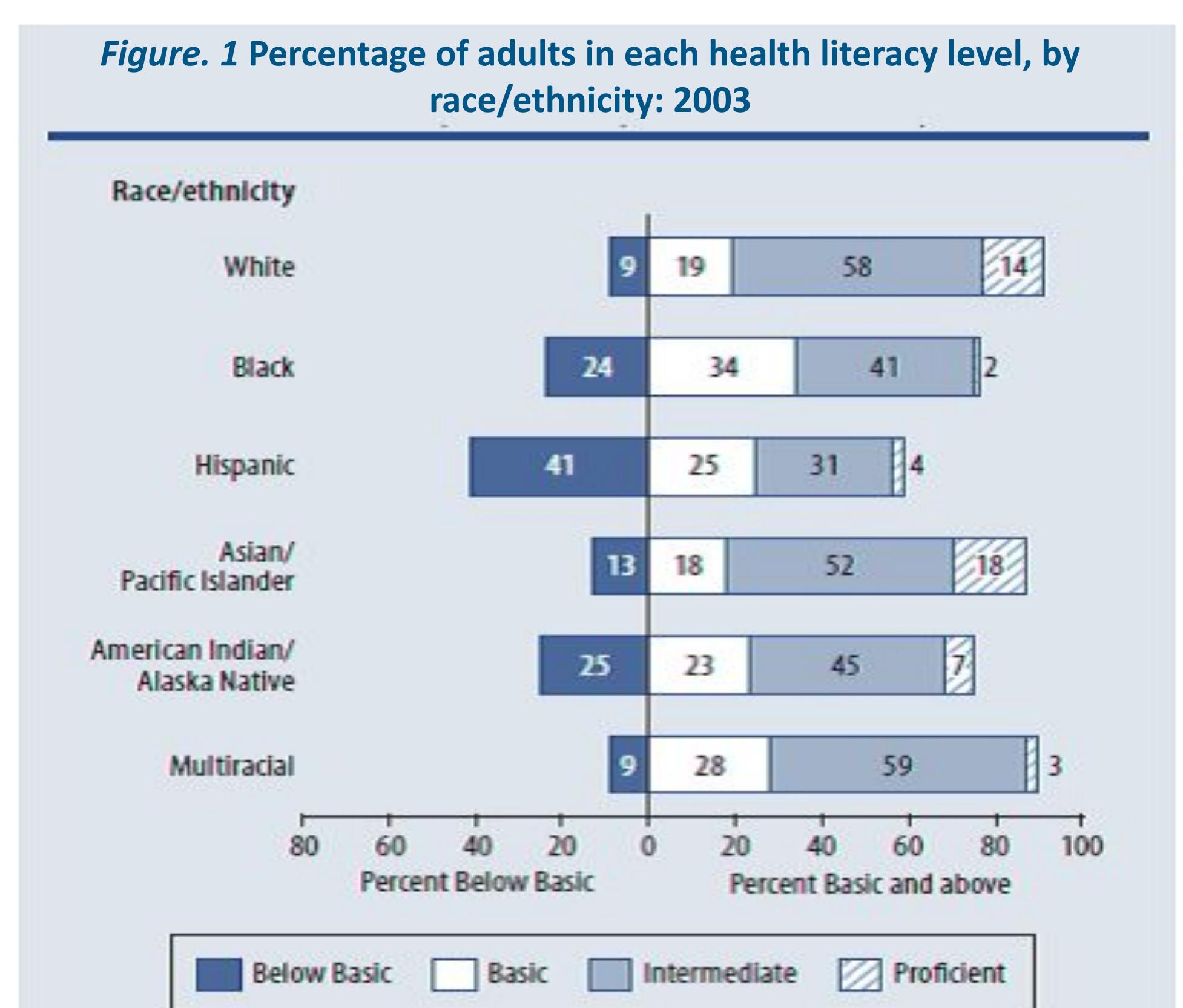
Results

Critical health literacy plays a vital role in diabetic Latinx patient outcomes

- Communication issues with healthcare providers** due to English-Spanish language differences are a **barrier for critical health literacy**. Patients with providers who are unable to speak their same language have **worsened glycemic control**,⁴ **lower medication adherence**,⁵ and **higher reports of provider discrimination**.⁶
- Miscommunication is a determinant** for diabetic retinopathy, as it was linked to 95% of Latinx patients being left undiagnosed during critical early stages where blindness due to diabetes was **preventable**.⁷

Switching to an online health system has widened the critical health literacy gap for diabetic Latinx patients

- Higher English literacy skills are associated with higher use of online health information, but for patients who are primarily Spanish-speaking at home, there was a negative association with seeking out health information online.⁸
- Furthermore, **lower health literacy was linked to less use of key technology** like glucose monitors⁹ and online patient portals.¹⁰



Addressing language and health education barriers contributes to healthier diabetic Latinx patients

- The use of **community health workers (CHWs)** has been shown consistently to improve diabetic outcomes such as patient satisfaction and adherence through improving **technology literacy**.¹¹ CHWs provide culturally tailored and community sensitive interventions that bridge gaps in **health education**.¹²
- Combinations of pictorial and Spanish-translated educational resources have contributed to changing **eating habits**,¹³ the **use of treatment tools** such as insulin pens and pumps,¹⁴ and an overall lowered **risk of severe symptoms**.¹⁵
- Diabetes is reported at a significantly higher rate among permanent legal Latinx residents, but current literature **lacks research** on diabetes rates and health risk factors pertaining to recently immigrated and/or undocumented Latinx population.¹⁶

Discussion

- Levels of low critical health literacy impact diabetes management among Latinx due to communication barriers, a technological divide, and an inability to navigate the healthcare system.

Culturally tailored interventions^{11,12,13}

Address language barriers^{13, 14}

Address health education barriers^{9,11,12}

References

- Kaushik, P., Reed, B., Kalirai, S., & Perez-Nieves, M. (2020). Challenges in insulin initiation among Hispanics/Latinos with diabetes in the United States. *Primary Care Diabetes*, 14(5), 401-412.
- Standage-Beier, C. S., Ziller, S. G., Bakhshi, B., Parra, O. D., Mandarino, L. J., Kohler, L. N., & Coletta, D. K. (2022). Tools to measure health literacy among adult Hispanic populations with type 2 diabetes mellitus: A review of the literature. *International Journal of Environmental Research and Public Health*, 19(19), 12551.
- National Center for Education Statistics. (2006). *The health literacy of America's adults results from the 2003 national assessment of adult literacy*.
- Fernandez, A., Schillinger, D., Warton, E. M., Adler, N., Moffet, H. H., Schenker, Y., Salgado, V. M., Ahmed, A., & Karter, A. J. (2011). Language barriers, physician-patient language concordance, and glycemic control among insured Latinos with diabetes: The diabetes study of Northern California (DISTANCE). *Journal of General Internal Medicine*, 26(2), 170-176.
- Bauer, A. M., Schillinger, D., Parker, M. M., Katon, W., Adler, N., Adams, A. S., Moffet, H. H., & Karter, A. J. (2013). Health literacy and antidepressant medication adherence among adults with diabetes: The diabetes study of Northern California (DISTANCE). *Journal of General Internal Medicine*, 28(9), 1181-1187.
- Lyles, C. R., Karter, A. J., Young, B. A., Spigner, C., Grembowski, D., Schillinger, D., & Adler, N. E. (2011). Correlates of patient-reported racial/ethnic health care discrimination in the diabetes study of Northern California (DISTANCE). *Journal of Health Care for the Poor and Underserved*, 22(1), 211-225.
- Pelayo, C., Mora Pinzón, M., Lock, L. J., Fowlkes, C., Stevens, C. L., Hoang, J., Garcia, J. L., Jacobson, N. A., Channa, R., & Liu, Y. (2023). Factors influencing eye screening adherence among Latinx patients with diabetes: A qualitative study. *Translational Vision Science & Technology* 12(12), 8.
- Millar, R. J., Sahoo, S., Yamashita, T., & Cummins, P. A. (2020). Literacy skills, language use, and online health information seeking among Hispanic adults in the United States. *Patient Education and Counseling*, 103(8), 1595-1600.
- Sequeira, P. A., Montoya, L., Ruelas, V., Xing, D., Chen, V., Beck, R., & Peters, A. L. (2013). Continuous glucose monitoring pilot in low-income type 1 diabetes patients. *Diabetes Technology & Therapeutics*, 15(10), 855-858.
- Sarkar, U., Karter, A. J., Liu, J. Y., Adler, N. E., Nguyen, R., López, A., & Schillinger, D. (2010). The literacy divide: Health literacy and the use of an internet-based patient portal in an integrated health system—results from the diabetes study of Northern California (DISTANCE). *Journal of Health Communication*, 15(sup2), 183-196.
- López, L., Tan-McGroarty, A., Horner, G., & Betancourt, J. R. (2016). Eliminating disparities among Latinos with type 2 diabetes: Effective eHealth strategies. *Journal of Diabetes and its Complications*, 30(3), 554-560.
- López, L., & Grant, R. W. (2012). Closing the gap: eliminating health care disparities among Latinos with diabetes using health information technology tools and patient navigators. *Journal of Diabetes Science and Technology*, 6(1), 169-176.
- Hernandez, J., Demiranda, L., Periseta, P., Andrews, L., Zhang, K., Henderson, R., Mittal, A., Norton, H. F., & Hagen, M. G. (2024). A systematic review and narrative synthesis of health literacy interventions among Spanish speaking populations in the United States. *BMC Public Health*, 24(1), 1713.
- Orrange, S., Ruelas, V., & Peters, A. L. (2022). Specialized technology education for pumps and pens in underserved populations with diabetes. *Diabetes Technology & Therapeutics*, 24(4), 268-275.
- Otilingam, P. G., Gatz, M., Tello, E., Escobar, A. J., Goldstein, A., Torres, M., & Varma, R. (2015). Buenos hábitos alimenticios para una buena salud: Evaluation of a nutrition education program to improve heart health and brain health in Latinas. *Journal of Aging and Health*, 27(1), 177-192.
- Lopez Mercado, D., Rivera-González, A. C., Stimpson, J. P., Langellier, B. A., Bustamante, A. V., Young, M. T., Ponce, N. A., Barajas, C. B., Roby, D. H., & Ortega, A. N. (2023). Undocumented Latino immigrants and the Latino health paradox. *American Journal of Preventive Medicine*, 65(2), 296-306.

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