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Health literacy is associated with 10-year risk of cardiovascular events: data from the Geelong Osteoporosis Study (GOS)

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INTRODUCTION

Health literacy in an individual context refers to the knowledge, confidence and comfort level of an individual to access, understand, appraise, remember and use information about health and health care, for the health and wellbeing of themselves and their communities.

Common risk factors for cardiovascular events can be combined into risk prediction models, providing an estimate of an individual's 10-year risk.

OBJECTIVES

While health literacy has a confirmed association with several cardiovascular risk factors, its role in preventing a cardiovascular event has been largely unexplored. This study aimed to investigate how health literacy associates with 10-year predicted risk of a cardiovascular event.

METHOD

Data were utilised from the Geelong Osteoporosis Study (GOS) 15-year follow up for 971 participants aged between 40 and 80 years. The Globorisk algorithm was used to predict 10-year risk of cardiovascular disease, providing a score between zero and 100%. The Health Literacy Questionnaire© (HLQ©) was used to measure participants' health literacy across nine domains. Covariates considered in linear regression models were birth country, employment, education, socio-economic status and living alone.

RESULTS

The median (IQR) Globorisk score was 0.014 (IQR 0.019, 0.070) indicating 4.1% risk of cardiovascular event. In adjusted models, the unit increases in three HLQ© scales were associated with lower predicted CVD risk:

- Scale 5: "Appraise health information" (mean difference -0.74, 95% CI -1.43, -0.05, p=0.03),
- Scale 8: "Ability to find good health information" (mean difference -0.95, 95% CI -1.61, -0.29, p=0.005)
- Scale 9: "Understanding health information enough to know what to do" (mean difference -1.01, 95% CI -1.68, -0.33, p=0.003).

Living alone, employment status and birth country were also associated with Globorisk scores; particularly living alone, which was associated with a higher mean of 1.27% in Globorisk score (mean 95% CI 0.32, 2.22, p<0.05).

Scale	Mean difference (95% CI, p=)
1 Feeling understood and supported by healthcare providers	0.15, -0.51, 0.82, p=0.65
2 Having sufficient information to manage my health	-0.71, -1.56, 0.14 p=0.10
3 Actively managing my health	-0.45, -1.15, 0.25 p=0.21
4 Social support for health	0.41, -0.33, 1.16 p=0.27
5 Appraisal of health information	-0.74, -1.43, -0.05 p=0.03
6 Ability to actively engage with healthcare providers	-0.22, -0.88, 0.43 p=0.50
7 Navigating the healthcare system	-0.23, -0.90, 0.44 p=0.50
8 Ability to find good health information	-0.95, -1.61, -0.29 p=0.005
9 Understand health information enough to know what to do	-1.01, -1.68, -0.33 p=0.003

Figure 1: Linear regression models showing associations between Globorisk and HLQ© scores

DISCUSSION AND CONCLUSION

This study demonstrated an inverse association between three domains of health literacy and 10-year risk of cardiovascular event. These results suggest that health literacy is independently associated with 10-year risk of cardiovascular events, meaning clinicians should consider an individual's health literacy when managing cardiovascular risk factors. Future studies could further elucidate this relationship among people who live alone.