



Health literacy in patients with intermittent claudication in relation to clinical characteristics, demographics, self-efficacy and quality of life – A cross-sectional study



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Background: Intermittent claudication requires treatment with secondary prevention to reduce disease progression and the risk of cardiovascular events and to improve quality of life. Health literacy and self-efficacy are important preconditions for the health behaviour changes necessary for adhering to secondary prevention.

Aim: Evaluate health literacy in patients with intermittent claudication regarding clinical characteristics, demographics, self-efficacy and quality of life.

Methods: A cross-sectional study evaluating health literacy, self-efficacy and quality of life using questionnaires. Patients with intermittent claudication from vascular units in the south of Sweden were included. **Results:** In total, 158 patients were included, of which, 52.5% reported “inadequate” (0–8 points) or “problematic” (9–12 points) health literacy with no differences between men and women. A significant higher proportion of patients living alone reported “inadequate” or “problematic” health literacy than “sufficient” (13–16 points) health literacy. Patients with “sufficient” health literacy reported significantly higher self-efficacy and quality of life and were more physically active than patients with “inadequate” or “problematic” health literacy. Also, patients with a university degree reported a significantly higher ability to “access” (seek, find and obtain) and “understand” (comprehend the accessed) information relevant to health.

Conclusion: The majority of patients with intermittent claudication have “inadequate” or “problematic” health literacy. Also, an “inadequate” or “problematic” health literacy level is more common among patients living alone, and education level appears to be more important when “accessing” and “understanding” information relevant to health. This illuminates the importance of not only the patients’ health literacy but also demographics when planning for secondary prevention.

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Introduction

Intermittent claudication (IC) is a chronic condition secondary to atherosclerosis. Patients with IC require lifelong treatment with secondary preventive measures including tobacco cessation, physical activity, dietary changes, and the best medical treatment.¹ However, the overall medical and social setting to support patients with IC with this treatment is suboptimal.^{2,3} Moreover, important

preconditions for health behaviour changes may need to be considered for adhering to secondary prevention. Health literacy and self-efficacy have been shown to be significantly associated with adherence to secondary prevention in patients with coronary artery disease.⁴ Therefore, additional knowledge about health literacy and self-efficacy may be important when planning the secondary prevention for patients with IC.

Approximately 236 million people live with peripheral artery disease (PAD),⁵ in which IC is the most common condition, representing 10–20%.⁶ It is characterized by ischemic muscle pain during walking, which is relieved when at rest.¹ Patients with IC suffer from walking impairment, loss of independence, and decreased

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quality of life (QOL).⁷ Patients with PAD suffer a 2.6-fold increased risk for cardiovascular mortality compared to those with normal ankle brachial index (ABI) and no symptoms of IC.⁸ The risk factors for development of PAD and other forms of atherosclerosis are similar (smoking, hypertension, dyslipidaemia and diabetes). To halt the progression of the atherosclerotic process in order to reduce the risk of cardiovascular events and increase quality of life (QOL), secondary prevention measures are crucial.¹ Importantly, one review found that patients with PAD showed diverse perceptions concerning the illness, with different etiological beliefs regarding the disease and treatment with secondary prevention. The reasons for non-adherence to treatment were insufficient knowledge or the inability to change behaviour patterns.⁹

The association between improved health behaviour and improved health literacy has been shown in other cardiovascular diseases (CVD).¹⁰ However, such important associations have not been studied in patients with IC. The concept of health literacy is defined by the World Health Organization and can briefly be described as the degree in which individuals have the ability to find, understand, and use information in order to make health-related decisions.¹¹ A review by Berkman et al.¹² showed that low health literacy is associated with more hospitalizations, non-adherence to treatment, lower ability to interpret health-related information, lower health status, and higher mortality rates. Importantly, health literacy has been shown to be improved by education, and as a result, improved overall health outcomes.¹³

Associations between health literacy and self-efficacy have been demonstrated in a review by Farley,¹⁴ where low health literacy seems to be a barrier for the self-management of chronic diseases. Self-efficacy is defined as a person's own judgement of capabilities to perform a certain activity in order to achieve a certain outcome.¹⁵ The confidence and perception of a person's ability to accomplish a certain level of performance directly correlates to their success rate. The subject's beliefs concerning his or her capabilities can therefore predict future behaviour.¹⁶ Also, self-efficacy can be changed over time. A study by Sol et al.¹⁷ showed improved self-efficacy to be associated with improved adherence to guidelines for physical activity in patients with CVD. Similar results have also been reported in patients with PAD, showing that self-efficacy is significantly associated with walking ability and adherence to exercise in patients with PAD.¹⁸ However, there is an important scientific gap evaluating self-efficacy in relation to health literacy in patients with IC. The aim of this study was therefore to explore health literacy in patients with IC in relation to clinical characteristics, demographics, self-efficacy, and QOL.

Method

The study was conducted with a cross-sectional design.

Participants

Patients from three vascular surgical departments in the south of Sweden were invited to take part in the study. The patients were recruited at the first visit to the outpatient clinic at the time they were diagnosed with IC. The inclusion criteria were patients diagnosed with IC (defined by clinical findings and [ABI] <0.9) and the ability to read and understand Swedish. Since PAD ranges from asymptomatic to critical ischemia, the patients' situation could differ in terms of comorbidities, disease burden, treatment strategies, and disease exposure based on the severity of the disease. Therefore, only patients with IC were included and patients with critical ischemia (rest pain, ulceration, and gangrene) were excluded, along with patients who previously received surgical treatment for IC.

Data collection

The data were collected between 2018 and 2020. Patients fulfilling the inclusion criteria were asked for participation by registered nurses specialized in vascular diseases at the Departments for Vascular diseases in Malmö, Helsingborg and Kristianstad. Patients who opted in received both oral and written information, and a questionnaire along with the informed consent form. The patients were advised to fill in the questionnaire and the informed consent form at home, thus giving them time to consider the decision to participate. The patients interesting in participation sent back the questionnaires and the informed consent to the research team using a prepaid envelope. One reminder was sent to non-responders. Medical records were reviewed for ABI, blood pressure, cholesterol levels and blood glucose.

Questionnaire

The self-reported questionnaires used included instruments regarding health literacy, self-efficacy, and QOL. Permission to use the instruments was granted from the originators. Background data were collected through a self-reported questionnaire developed only for this study, which included questions regarding demographics, co-morbidities, clinical characteristics, and lifestyle factors such as physical activity and smoking. The lifestyle factors were included based on the importance of secondary prevention for patients with PAD.^{1,8} Physical activity were self-reported, and the two questions were phrased as: "Are you being physically active?" (yes/no) and "How many times per week are you being physically active?" (1-2, 3-4, >4).

Health literacy

European Health Literacy Survey Questionnaire 16 (HLS-EU-Q16-SE) is a short version of European Health Literacy Survey Questionnaire (HLS-EU). The instrument is available in Swedish and has been validated in a Swedish context.¹⁹ In the current study the internal consistency was ($\alpha = .91$). It consists of 16 items in four different dimensions of health literacy: "Access/obtain" refers to the ability to seek, find and obtain health information. "Understand" refers to the ability to comprehend the health information that is accessed. "Process/appraise" refers to the ability to judge and evaluate the accessed health information and "apply/use" refers to the ability to use the health information to maintain and improve health.²⁰ It uses a four-point response scale: "very easy", "easy", "difficult", "very difficult", and one option for "I don't know". The responses "very easy" and "easy" are combined into one category and receive the value of one point. The responses "very difficult" and "difficult" are combined into another category and receive zero points, and the response "I don't know" is treated as missing data. A sum score is calculated and divided into three categories: 0–8 inadequate, 9–12 problematic and 13–16 sufficient.¹⁹ The health literacy index was divided into two categories: not sufficient health literacy (inadequate and problematic) and sufficient health literacy according to Sørensen et al.²¹

Self-efficacy

The General Self-Efficacy Scale (S-GSE) consists of 10 items rated on a four-point Likert scale ("not all true" to "exactly true").²² The Swedish version was used²³ which have good psychometric properties.²⁴ A good internal consistency was showed in the current study ($\alpha = .92$). The answers are summed to a complete score (10–40), where a high score represent high self-efficacy.²²

QOL

Vascular Quality of Life Questionnaire-6 (VQ6) is a disease-specific instrument for measuring QOL of patients with PAD. The

Swedish version of VQ6 has shown good psychometric properties.²⁵ In the current study the internal consistency was ($\alpha = .85$). The instrument contains six items divided into five subscales: activity (two items), emotional, pain, social, and symptoms. A four-point response scale was used, and a sum score was calculated (6–24), where a high score indicates a high quality of life.²⁶

Statistics

Descriptive statistics (i.e., frequencies, percentages, means and medians) were used to describe the study sample. Normal distributed variables are presented as mean with standard deviation and non-normally distributed variables as median, with first and third interquartile ranges (IQR) in parenthesis. Normal distribution was assessed using histograms and Shapiro-Wilks test. The characteristics between groups were compared using χ^2 test for categorical variables, independent samples t-tests for normal distributed data, and Mann-Whitney U-test for ordinal variables not normally distributed. Multiple logistic regression model was used to determine factors associated with level of health literacy and adjusted for confounding variables. A p-value of 0.05 was used to determine the significance. The internal consistency was measured using Cronbach's alpha that ranges between 0 and 1, with higher values indicating more reliability.²⁷ For analyzing the data, IBM SPSS Statistics for Windows, Version 26.0. Armonk, NY: IBM Corp were used.

Ethical consideration

The study has been carried out in accordance with the principles outlined in the Declaration of Helsinki.²⁸ The study has been approved by the Regional Ethical Review Board in Lund (Dnr 2017/609).

Results

A total of 215 patients fulfilled the inclusion criteria and were invited to participate in the study. Initially, 142 patients answered the questionnaires. After the reminding letter was sent to non-responders, another 16 patients were included, resulting in 158 patients in total who completed the questionnaires, with a 73.5% response rate.

Demographics and clinical characteristics

The total population consisted of 80 women (50.6%) and 78 men (49.4%), with a mean age of 74 years (range 47–92). The most common comorbidities in the total population were hypertension (66.5%) and hyperlipidaemia (50%). The men had higher diastolic blood pressure ($p = 0.006$) and body mass index (BMI) ($p = 0.001$) compared to the women. Also, the men had a higher prevalence of CVD ($p = 0.028$) and DM ($p = 0.004$) compared to the women, whereas asthma and chronic obstructive pulmonary disease were more prevalent in the women ($p = 0.007$). The overall mean ABI was 0.65 ($SD=0.19$), with no differences between men and women (Table 1). In the total population, 89.3% were current or former smokers, and 33.5% were living alone (Table 2). Additional demographics and clinical characteristics are presented in Table 1.

Clinical characteristics, demographics and lifestyle factors in relation to health literacy level

In the total population, 52.5% reported “inadequate or problematic” health literacy, with no differences between men and women ($p = 0.173$). Patients with “sufficient” health literacy reported both higher self-efficacy ($p = 0.001$) and QOL ($p = 0.001$) than patients with “inadequate and problematic” health literacy.

“Inadequate or problematic” health literacy was more frequent among patients living alone compared to patients who were cohabitants. There were no differences in comorbidities or ABI between different levels of health literacy. However, there was a higher proportion of physically active patients among those with “sufficient” health literacy than among patients with “inadequate or problematic” health literacy ($p = 0.029$) (Table 2).

Moreover, when exploring the dimensions in health literacy, no differences was found in the dimensions of “appraise-” or “apply” information relevant to health.

Importantly, current smokers had a higher ability to “access” ($p = 0.001$) and “understand” ($p = 0.021$) information relevant for health compared to former smokers and those who were never smokers. Further, the patients that reported to be physically active had a higher ability to “understand” information relevant to health ($p = 0.020$). This also applied for patients with a university degree ($p = 0.007$) who also reported a higher ability to “access” information relevant to health ($p = 0.008$) (Table 3).

The association between physical activity and health literacy was confirmed in the logistic regression. The odds of having “sufficient” health literacy were highest among patients who are physi-

Table 1
Demographics and clinical characteristics in patients with intermittent claudication.

	Total (n = 158)	Men (n = 78)	Women (n = 80)	p-value
Age (years)	74.1 (7.3) *	73.3 (7.3) *	75.0 (6.6) *	0.160
Ankle brachial index	0.65 (0.19) *	0.67 (0.19) *	0.62 (0.19) *	0.114
Body mass index (kg/m ²)	24.9 (25.1–26.4) **	26.1 (23.6–29.4) **	24.3 (21.6–27.9) **	0.001
Diastolic blood pressure	76.0 (74.5–78.6) **	79.6 (11.3) *	73.9 (9.1) *	0.006
Systolic blood pressure	148.2 (135.0–160.0) **	144 (129.5–160.0) **	150.7 (21.3) *	0.089
Cholesterol (mmol/l)	4.5 (3.8–5.8)**	5.1 (4.1–5.9)**	4.1 (3.5–5.3)**	0.010
Blood glucose (mmol/l)	6.2 (5.6–7.5)**	6.1 (5.6–7.2) **	6.4 (5.8–8.3)**	0.811
Comorbidities n (%)				
Angina pectoris	23 (14.6)	12 (15.4)	11 (13.8)	0.527
Asthma/COPD	32 (20.2)	9 (11.5)	23 (28.7)	0.007
Cerebrovascular disease	19 (12.0)	14 (17.9)	5 (6.3)	0.028
Diabetes mellitus	46 (29.1)	31 (39.7)	15 (18.8)	0.004
Hyperlipidemia	79 (50.0)	41 (52.6)	38 (47.5)	0.692
Hypertension	105 (66.5)	49 (62.8)	56 (70.0)	0.186
Myocardial infarction	20 (12.7)	10 (12.8)	10 (12.5)	0.119

*mean (SD); standard deviation

**median (IQR); Inter quartile range

Table 2
Clinical characteristics, demographics and lifestyle factors in relation to health literacy level in patients with intermittent claudication.

	Total (n = 158)	Inadequate health literacy	Problematic health literacy	Columns compared for p-values		p-value #
				Not sufficient health literacy joint variable	Sufficient health literacy	
Health literacy n (%)	155	15 (9.5)	68 (43.0)	83 (52.5)	72 (45.6)	
Clinical characteristics						
Ankle brachial index *	0.65 (0.19)	0.66 (0.19)	0.64 (0.18)	0.65 (0.18)	0.64 (0.20)	0.247
Demographics						
Age (years) *	74.0 (7.28)	74.0 (8.7)	74.3 (7.4)	74.2 (7.6)	73.8 (6.9)	0.712
Body mass index (kg/m ²) *	25.8 (4.1)	28.0 (4.8)	25.9 (4.3)	26.2 (4.5)	25.4 (3.6)	0.204
Gender, n (% men)	77 (49.7)	8 (53.3)	29 (42.6)	37 (48.1)	40 (55.6)	0.173
Civil status n (%)						
Living alone	53 (33.5)	5 (33.3)	30 (44.1)	35 (42.2)	17 (23.6)	0.024
Cohabitation	89 (56.3)	8 (53.3)	34 (50.0)	42 (50.6)	45 (62.5)	0.050
Live-apart	5 (3.2)	2 (13.3)	0 (0.0)	2 (2.4)	3 (4.2)	0.497
Education level n (%)						
Elementary school	44 (28.0)	6 (40.0)	18 (26.9)	24 (28.9)	18 (25.0)	0.553
Upper-secondary school	45 (28.7)	6 (40.0)	22 (32.8)	28 (33.7)	17 (23.6)	0.151
Vocational school	26 (16.6)	1 (6.7)	10 (14.9)	11 (13.3)	14 (19.4)	0.311
University	42 (26.8)	2 (13.3)	17 (25.0)	19 (22.9)	23 (31.9)	0.223
Lifestyle factors n (%)						
Physical activity	124 (79.0)	10 (66.7)	52 (76.5)	62 (74.7)	62 (86.1)	0.029
Never smoker	16 (10.1)	1 (6.7)	7 (10.3)	8 (9.8)	7 (9.7)	0.994
Former smoker	108 (68.4)	12 (80.0)	49 (72.1)	61 (73.5)	46 (63.9)	0.158
Current smoker	33 (20.9)	2 (13.3)	11 (16.2)	13 (15.7)	19 (26.4)	0.108
Questionnaires**						
General self-efficacy scale	30 (27-34)	30 (24-31)	30 (26-33)	30 (27.7-30.1)	32 (30-36)	0.001
Vascular quality of life-6	13.0 (11.0-17.0)	10.0 (9.0-16.0)	12.0 (11.0-15.0)	12.0 (10.0-15.0)	15.0 (12.8-18.0)	0.001

*mean (SD): standard deviation

**median (IQR): Inter quartile range

#Health literacy analyzed in two groups (not sufficient [problematic and inadequate] and sufficient). Inadequate and problematic health literacy were collapsed into a joint variable to enable analyses – this is due to low proportions of inadequate health literacy

Table 3
Demographics and lifestyle factors in relation to dimensions in health literacy.

	Access/obtain information relevant to health	Understand information relevant to health	Appraise/judge/evaluate information relevant to health	Apply/use information relevant to health
Gender *				
men	12 (10-13)	19 (18-21)	8 (7-9)	9 (8-10)
women	11 (10-14)	10 (18-22)	8 (7-9)	9 (8-10)
p-value	0.716	0.072	0.547	0.633
Civil status *				
Cohabitation	12 (10-13)	19 (18-22)	8 (7-9)	9 (8-10)
Living alone	11 (9-13)	19 (18-21)	8 (7-9)	9 (8-10.25)
p-value	0.308	0.948	0.427	0.978
Education level *				
University	12 (11-14)	21 (18-23)	9 (7-10)	9 (8-11)
Other education	11 (9.5-13)	19 (17.75-21)	8 (7-9)	9 (8-10)
p-value	0.008	0.007	0.088	0.068
Physical activity *				
Yes	12 (10-13)	20 (18-22)	8 (7-9)	9 (8-10)
No	11 (8.5-12.5)	18 (17-19.25)	8 (7-8)	8 (7-9.25)
p-value	0.071	0.020	0.176	0.066
Tobacco *				
Current smoker	13 (11-15)	21 (18-23)	8 (7-10.25)	9 (7-11)
Former /never smoker	11 (10-12.5)	19 (18-21)	8 (7-9)	9 (8-10)
p-value	0.001	0.021	0.312	0.489

*median (IQR):Inter quartile range.

cally active, after adjusting for age, gender, level of education and civil status (OR 2.77; 95% CI 1.05-7.27; $p = 0.039$) (Table 4).

Discussion

The aim of this study was to explore health literacy in patients with IC in relation to clinical characteristics, demographics, self-efficacy and quality of life. The results of the study show that more

than half of the patients with IC have “inadequate or problematic” health literacy with no differences between men and women. There was a difference in civil status in relation to health literacy, showing that a higher proportion of patients with “inadequate or problematic” health literacy live alone. Importantly, patients with “sufficient” health literacy reported higher proportion of physical activity as well as significantly higher self-efficacy and QOL than participants with “inadequate and problematic” health literacy.

Table 4

Demographics and lifestyle variables in relation to sufficient health literacy analyzed by multiple logistic regression and expressed as odds ratio (OR) with 95% confidence intervals (CI).

Independent variables	Categories	Dependent variable	p-value
Variables		Sufficient health literacy	
Age	Age	1.00 (0.95–1.05)	0.980
Civil status	Cohabitant	1.94 (0.90–4.16)	0.091
	Living alone	Reference	
Education level	University	1.36 (0.62–2.96)	0.445
	Other education	Reference	
Gender	Male	1.51 (0.73–3.10)	0.267
	Female	Reference	
Physical activity	Active	2.77 (1.05–7.27)	0.039
	Not active	Reference	

It was more frequent with “inadequate or problematic” health literacy among the patients who live alone. This result contrasts with study by Geboers et al.,²⁹ who found no significant association between health literacy and civil status among older adults. However, the finding corresponds with a study by Bo et al.,³⁰ who examined health literacy in a Danish population-based study showing the association between individuals living alone and a lower level of health literacy. This may indicate that lower health literacy could be more common in people living alone in general, regardless of diagnosis, which could be an important factor to consider when planning for secondary prevention for patients with IC. It may be that patients with IC living alone to a greater extent have lower health literacy and therefore are less capable of changing their health behaviour and adhering to secondary prevention. According to Kim et al.,³¹ individuals with a rich social life have a stronger intention to seek information. However, due to physical limitations, patients with IC avoid social situations, leading to involuntary isolation.⁹ Consequently, it is essential that healthcare professionals are aware of the health literacy in the patients, in particular those suffering from IC in order to be able to provide extra support to succeed with secondary prevention. Such tailored interventions are most likely beneficial to improve QOL and perhaps also healthcare costs, due to the reduced risk of cardiovascular events.

A higher proportion of physically active patients is found among those with “sufficient” health literacy, which is in line with a review by Buja et al.,³² showing that higher health literacy is associated with higher levels of physical activity. Further, the results in the health literacy dimension engaging “understanding” information relevant to health were significantly higher in those reported to be physically active. Also, education level was important in the health literacy dimensions of “accessing-” and “understanding” information relevant to health, where participants with a university degree had a significantly higher ability in these two dimensions. This could mean that patients that reported to have a low level of physical activity may also have a lower health literacy and thus more difficulties in assimilating the walking exercise advice. In line with Cawthon et al.,³³ perhaps the healthcare system should implement a routine assessment to evaluate health literacy. This result could be that the patients’ level of health literacy can guide healthcare professionals to a more structured approach to tailor information in order to further increase patients’ adherence to secondary preventive measures.

Current smokers had a higher ability to “access-” and “understand” information relevant for health compared to former/never smokers. This is an interesting and surprising result, as smoking cessation is a crucial part of the treatment. However, patients with chronic pain may be less responsive to standard smoking cessation

interventions due to the burden associated with co-morbidities,³⁴ and patients with IC could therefore need tailored support to be able to adhere to the smoking cessation advice. Individuals with high self-efficacy are more likely to seek preventive care and succeed with smoking cessation.¹⁵ Therefore, by strengthen patients’ self-efficacy towards health behaviour change, the adherence to secondary prevention could be improved.

The results demonstrate that patients with “sufficient” health literacy reported both significantly higher self-efficacy and QOL than patients with “inadequate and problematic” health literacy. These findings are in line with previous research by Wang et al. (2017)³⁵ showing that higher health literacy and self-efficacy generates better health-related quality of life in patients with hypertension. However, in this study, 52.5 % of patients with IC reported “inadequate or problematic” health literacy indicating that the majority of patients with IC may need extra support to be able to adhere to treatment with secondary prevention. This support could be offered by healthcare professionals conducting structured care and being observant of whether the patients have understood the information. This could be achieved through, for instance, an extra phone call as a follow-up, or if there are prerequisites, to use a digital solution in the form of home-based monitoring where the patients can achieve support more frequently. Improving the patients’ health literacy with tailored information and follow-up teaching may contribute to better self-efficacy, which, in turn, could lead to better QOL and reduced risk of disease progression.

Strengths and limitations

A strength of this study is that the participants were recruited from three different vascular units in the south of Sweden. However, the cross-sectional design of the study is a limitation because the causality of the factors associated with health literacy cannot be determined.³⁶ The number of participants was somewhat small but would not have affected the significant differences found; however, differences that were not detected may exist. The use of well-known and validated instruments is a strength, increasing the elimination of measurement bias (ibid.). The background questionnaire was developed specific for this study and could be considered a limitation due to lack of validation. Another limitation is Swedish language as an inclusion criterion; however, the non-responders were Swedish speaking but declined participation for unknown reasons. Since there is a high proportion of immigrants (35% in our region,³⁷ we know that the proportion of immigrants together with other socioeconomic factors contribute to non-compliance in different screening programs in our region.^{38,39} even when the invitations are available in a variety of different languages.³⁹ The response-rate was acceptable; unfortunately, no drop-out analysis could be done since the non-responders had not signed the informed consent and were therefore not participating in the study. The non-responders had a mean age of 72 years, which did not differ particularly from the patients of the study. Among the non-responders, 63% were male compared to 49% among the responders, which is in line with previous research showing women to be more likely to participate in research studies.⁴⁰ Physical activity and smoking habits were obtained as self-reported outcomes, which could result in inaccurate estimation due to social desirability bias.^{41,42} However, considering the study design, self-report was the most suitable method of assessing factors related to the treatment with secondary prevention.

Conclusion

The majority of patients with IC have “inadequate or problematic” health literacy, with no differences between men and women.

Patients with IC with sufficient health literacy are most likely to be capable of managing their disease, as they reported higher self-efficacy and QOL. They also engage in physical activity more often compared to patients with “inadequate or problematic” health literacy. Importantly, “inadequate or problematic” health literacy is more common among patients who live alone, and level of education also seems to be an important predictor concerning the ability to access and comprehend information regarding health. This emphasizes the value of not only knowing the patients' health literacy but also demographics when planning for secondary preventive measures.

Efforts to improve health literacy may lead to both better self-efficacy and QOL, which are two aspects that will most likely affect the patients' health behaviour and adherence to secondary prevention.

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Declaration of Competing Interest

The authors declare that there is no conflict of interest.

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