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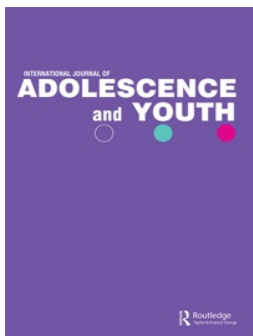
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Ankita Sehrawat, Gaurav Talan & Kanchan Sehrawat

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RESEARCH ARTICLE



Financial literacy and health behaviours among youth: evidence from India

Ankita Sehrawat^a , Gaurav Talan^b and Kanchan Sehrawat^c

^aSchool of Psychology, University of Sheffield, Sheffield, United Kingdom; ^bUniversity School of Management Studies, Guru Gobind Singh Indraprastha University, Delhi, India; ^cJindal School of Banking & Finance, O.P. Jindal Global University, Sonapat, India

ABSTRACT

Healthy behaviour reduces the risk of many serious physical and mental illnesses among individuals. Literature confirms a negative relationship between financial literacy and unhealthy behaviours like smoking, excessive alcohol, and gambling. This paper is an attempt to understand how financial literacy relates to health behaviour among Indian youth. Data was collected using an online questionnaire from 501 participants, and probit analysis was employed to test the hypotheses. The results revealed that higher financial literacy was associated with lower engagement in e-cigarette, marijuana, and drug use, as well as binge eating, and was also linked to greater physical activity and a higher likelihood of maintaining a normal Body Mass Index (BMI). However, no significant association was found between financial literacy and cigarette smoking or alcohol consumption. These findings highlight the potential role of financial literacy and other psychological and behavioural determinants in promoting healthier lifestyles among young adults in India.

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Financial literacy; health behaviours; rationality; young adults

Introduction

Health behaviours are actions and habits that an individual undertakes to maintain, restore, or improve their health (Gochman, 1997). Within the broader concept of health behaviour, everyday lifestyle practices play a crucial role. The World Health Organisation (World Health Organisation, 2022) identified these healthy lifestyle habits as regularly engaging in physical activities, eating nutritious food, refraining from smoking, and limiting alcohol use to avoid health risks. Researchers support that not maintaining these healthy lifestyle habits can result in chronic conditions like cardiovascular disease (Barbaresko et al., 2018), cancer (Zhang et al., 2020), diabetes (Feldman et al., 2017), and even mental health issues (Bourke et al., 2025). Furthermore, these conditions are leading causes of mortality and contribute substantially to the global economic burden (Forouzanfar et al., 2016; Muka et al., 2015; Reddy, 2020). Intervention focusing on improving lifestyle-related health behaviours can significantly reduce the incidence of diseases (Budreviciute et al., 2020; World Health Organisation, 2017), which is also linked to improved psychological well-being (Conner et al., 2015; Hirooka et al., 2021; Mücke et al., 2018). Given the wide range of benefits of maintaining these lifestyle habits, many countries focus on these behaviours to achieve their national health objectives (Arena et al., 2015; Merkur et al., 2013; National Centre for Health Statistics, 2020).

Several social, environmental, and psychological factors play a role in shaping these lifestyle behaviours (Cockerham, 2005; Tabrizi et al., 2024). One such way of looking at it is from the behavioural economics perspective, according to which engagement in health behaviour is dependent upon the individual's evaluation of the cost and benefit (Cawley & Ruhm, 2011; Dragone, 2009; Grossman, 1972). However, such decisions are often influenced by cognitive biases, impulsivity, and a tendency to prioritise immediate gratification over long-term health outcomes (Ikeda et al., 2010). For example, overeating or physical inactivity can be understood as outcomes of present-biased preferences, where the immediate pleasure

CONTACT Ankita Sehrawat  asehrawat1@sheffield.ac.uk

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outweighs perceived long-term costs, ultimately leading to the adoption of unhealthy lifestyles (Barbour, 2023; van Sluijs et al., 2021).

One such model that can help to understand the mechanisms through which people make such decisions to engage in healthy or unhealthy behaviour is Grossman's human capital model (Grossman, 2007, 1972). According to the model, health is considered an investment whereby individuals allocate resources such as time, money, and effort to maintain or improve their health, with the expectation of deriving future returns in the form of increased productivity, longevity, and quality of life. This study evaluates engagement in health behaviour from the viewpoint of financial literacy as a proxy for rational decision making to operationalise Grossman's human capital model (Grossman, 2007, 1972). This perspective is supported by emerging empirical evidence suggesting that financially literate individuals are more likely to engage in health-promoting behaviours such as regular physical activity, maintaining a healthy body mass index (BMI), and avoiding risky behaviours, including smoking (Ogura et al., 2025; Ono et al., 2021; Watanapongvanich et al., 2021).

Financial literacy can be defined as an individual's ability to make informed and rational financial decisions (Lal et al., 2022). Beyond financial management, financial literacy may also reflect broader cognitive and decision-making capacities, including future planning, risk evaluation, self-regulation, and the ability to assess long-term consequences (Gökalp et al., 2026; Hardika et al., 2024; Hermansson & Jonsson, 2021; Howlett et al., 2008; Lusardi & Mitchell, 2014). Hence, from Grossman's human capital model (Grossman, 1972), individuals with higher financial literacy may be better equipped to allocate resources toward health-promoting activities, access health-related information, and make preventive lifestyle choices (Khan et al., 2021; Ogura et al., 2025; Watanapongvanich et al., 2021; Yamaguchi et al., 2026).

Literature review

Health behaviours

Studies have now reported that the world's majority of life-threatening diseases are chronic and associated with health behaviours (Kvaavik et al., 2010; Lloyd-Jones et al., 2010; McCullough et al., 2011). Literature has continuously identified the following health behaviours as being associated with increased morbidity and mortality: (1) physical inactivity and sedentary lifestyle (Fogelholm, 2010; Grøntved & Hu, 2011; Qin et al., 2010), (2) smoking cigarettes (Lloyd-Jones et al., 2010; Wang et al., 2026), (3) use of substance including alcohol and illicit drugs (Costanzo et al., 2010; Ding et al., 2021; Kim et al., 2025; Stenbacka et al., 2010) and (4) consuming calories dense and low nutrients food (Mente et al., 2009; Schwingshackl et al., 2017). In fact, studies have reported that lifestyle modification and maintaining a healthy lifestyle, such as physical activity, eating a healthy diet, smoking cessation, healthy BMI, limiting alcohol consumption, and avoiding illicit drugs, is associated with reduced risks of cancer, cardiovascular diseases, and mortality rates (Khan et al., 2018; Loef & Walach, 2012; Marino et al., 2024; Mick et al., 2025; Rabbani et al., 2025; Walker et al., 2017).

Financial literacy

Financial literacy can be understood as '*knowledge and understanding of financial concepts and risks, and the skills, motivation and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts*' (Organisation for Economic Co-operation & Development, 2014, p.33). Studies suggest that individuals with higher levels of financial literacy are more effective at allocating resources, engaging in long-term financial planning, and avoiding cognitive biases, which may support more rational financial decision-making, including budgeting and investment decisions. (Hardika et al., 2024; Khan et al., 2021; Lusardi & Mitchell, 2014). Financial literacy has been associated with a wide range of positive economic outcomes, including improved money management, greater savings behaviour, retirement planning, reduced debt, and enhanced financial well-being (Anghel & Pochea, 2025; Başar et al., 2025; Cappelli et al., 2024; Mustonen et al., 2025).

Although much of the literature focused on the relationship between financial literacy and financial outcomes, there is growing evidence of its influence on non-financial domains. For instance, studies have reported that poor financial literacy has been associated with problematic gambling behaviours (O'Connor

& Ivory, 2025; Watanapongvanich et al., 2021), high anxiety (Kadoya & Khan, 2018), and reduced health care checkups (Lal et al., 2022). These studies suggest that the impact of financial literacy goes beyond financial outcomes, and one such domain is health behaviours, discussed in the next section.

Financial literacy and health behaviours

Just as financially literate individuals make strategic decisions regarding financial planning, they may also be more likely to make rational and informed decisions about their health behaviours. Numerous studies have now reported that financial literacy has been associated with positive health behaviours such as regular exercise (Ono et al., 2021; Yamaguchi et al., 2026), lower smoking (Watanapongvanich et al., 2021), and healthier BMI (Ogura et al., 2025).

Several studies have interpreted these findings using Grossman's Human Capital Model (Grossman, 1972; 2007), suggesting that financially literate individuals may be better able to recognise the long-term benefits of investing in their health and make decisions that maximise future well-being (e.g. Ogura et al., 2025; Ono et al., 2021; Watanapongvanich et al., 2021; Yamaguchi et al., 2026).

Despite this emerging evidence, important gaps remain in the literature. First, to the best of our knowledge, no study has examined the relationship between financial literacy and health behaviours in the Indian context. Given India's unique landscape (discussed in the following section), findings from other countries may not be directly generalisable to Indian populations. Second, previous studies have typically focused on a single health behaviour or a limited range of outcomes. Examining a broader set of health behaviours, including physical activity, substance use (alcohol, cigarettes, e-cigarettes, marijuana, and drugs), binge eating, and BMI, may provide a more comprehensive understanding of the relationship between financial literacy and health.

Current study

Given the importance of engaging in healthy lifestyle behaviours and their impact on overall health, timely research is needed to identify strategies that can enhance individuals' engagement in such behaviours.

There has been emerging work to understand the impact of financial literacy on health behaviour, but none has been conducted in the Indian context.

Non-communicable diseases (NCDs) have increased their share of total disease burden from approximately 30% in 1990 to around 55% in 2016 among the Indian population (Government of India et al., 2022). NCDs are now responsible for ~63% of deaths in the country, with cardiovascular diseases alone accounting for ~27%, chronic respiratory diseases ~11%, cancers ~9%, and diabetes ~3% (Menon et al., 2019). India's National Health Policy (Ministry of Health et al., 2017) emphasises preventive and promotive healthcare as a central strategy for reducing morbidity and lessening the financial and infrastructural strain of treatment. There are several government policies and programmes, such as Fit India Movement 2019, Eat Right India 2018, Khelo India 2018, Swachh Bharat Mission 2014, among others, that the Indian Government has undertaken to promote healthy behaviour (including physical activity, nutrition, sanitation, lifestyle). Despite that, unhealthy behaviours are prevalent in India. With 345 million adults smoking tobacco (World Health Organisation, 2022), 160 million consuming alcohol (Empowerment MoSJa, 2020), more than 50% of the population is inactive, and less than 10% participate in recreational physical activity (Anjana et al., 2014). Besides that, there has been an increase in unhealthy food consumption (Gauthaman, 2023; Mohan et al., 2023). Poor dietary choices and physical inactivity are also contributing to the increasing prevalence of overweight and obesity in India (Rai et al., 2025). According to the recent Lancet report (2025) India had the second-highest number of adults living with overweight or obesity globally in 2021, with approximately 180 million individuals affected, and suggest that this number could rise to 450 million by 2050, representing nearly one-third of the country's projected population.

As a developing economy with a rapidly expanding youth population (Ministry of Statistics et al., 2023; United Nations Population Fund, 2023), India represents an important context in which to investigate how financial literacy contributes to healthier lifestyle choices and overall well-being. India has the largest youth population (aged 15–29) in the world, with an estimated 370–380 million individuals in 2026, representing approximately 27% of the country's total population (see report by Premji University, 2026). Hence, this study focuses on young adults. Moreover, numerous studies have reported that behaviours established

during this period tend to shape long-lasting health habits (Arnett, 2000; Daw et al., 2017; Nelson et al., 2008). The knowledge about these relationships in young adults is particularly valuable because this life stage is when financial responsibility and independent health behaviours first converge (Arnett, 2000; Nelson et al., 2008). Improved understanding of these relationships can facilitate the development of targeted interventions like integrated financial and health education in schools and universities, workplace programmes that can combine financial knowledge with wellness-related support.

Thus, the current study examines the relationship between financial literacy and health behaviours, including substance use, physical activity, binge eating, and BMI. By framing financial literacy as both a resource and a marker of rational decision-making, this research seeks to contribute to a more holistic understanding of how financial competencies may shape health outcomes.

Additionally, in line with the literature on financial literacy and health behaviours (Khan et al., 2021; Ono et al., 2021; Watanapongvanich et al., 2021), the current study controls for relevant demographic and socioeconomic variables alongside behavioural controls, including myopic view of the future (i.e. short term way of thinking in which individuals focus more on immediate rewards, O'Donoghue & Rabin, 2015), risk preferences (i.e. individual's tendency to engage in or avoid risky behaviour, Hertwig et al., 2019), current level of happiness (i.e. subjective emotional state characterised by positive feelings, and overall well-being, Diener, 2009), and health-related anxiety (i.e. worrying about being or becoming unwell, Salkovskis et al., 2002). These demographics and behavioural controls were included as they are known to influence the outcome variable, i.e. engagement in health behaviours. For instance, there is evidence that gender, income, and age influence engagement in health behaviours (Duan et al., 2025; Guthold et al., 2020; Hiller et al., 2017; Link, 2008; Park & Kim, 2024; Patrick et al., 2012; Strain et al., 2024). While considering behavioural controls, more myopic view (immediate outcomes) of the future is associated with lower engagement in preventive health behaviours (Bradford, 2010; Lawless et al., 2013); higher risk preference has been linked to greater likelihood of engaging in unhealthy behaviours (Beauchamp et al., 2017); higher levels of happiness are generally associated with greater participation in health-promoting behaviours (Rasciute & Downward, 2010; Veenhoven, 2008); and higher levels of health-related anxiety may disrupt engagement in health-promoting behaviours and contribute to poorer lifestyle choices (Dattilo et al., 2021; Tang et al., 2024).

Drawing on the Grossman Human Capital Model (Grossman, 1972, 2007), it is hypothesised that higher levels of financial literacy will be associated with greater physical activity, lower substance use, lower binge eating, and healthier BMI, as their enhanced capacity for rational decision-making by recognising long-term consequences.

Data and methods

Study design

A cross-sectional study was used to examine the relationship between financial literacy and health behaviours. Data was collected using the online software Qualtrics. To ensure transparency, the study was pre-registered on OSF and received ethical approval from the ethical committee of the [REDACTED].

Participants

Using G*Power 3.1, a minimum sample size of $n = 454$ was calculated to detect a small effect size ($f^2 = 0.05$) with an α error probability of 0.05 and a desired power of 0.95 with 8 predictors. Convenience sampling was used to recruit the participants who met the following inclusion criteria i) between the ages of 18–25, ii) have a smartphone/laptop or any device with internet, and iii) fluent in English. A total of 543 participants took part in the survey, but only 501 completed all the required measures; hence, the analysis was carried out on data from 501 participants. The mean age of the sample was 20.06 ($SD = 4.84$), 40.7% were female, and the average BMI was 23.64 ($SD = 4.37$). Other descriptive details are presented in Table 1.

Procedure

An online survey with measures of financial literacy, health behaviours, demographic information, and behavioural variables was created using Qualtrics. Prior to full administration, the questionnaire was

Table 1. Descriptive statistics.

Age (M $\pm$ SD)	20.06 $\pm$ 4.84
Sex, n (%)	
Female	203 (40.7%)
Male	298 (54.9%)
Income	
Less than INR 10,00,000	254 (50.7%)
INR 10,00,000 to 20,00,000	85 (17.0%)
INR 20,00,000 to 30,00,000	33 (6.6%)
INR 30,00,000 to 40,00,000	21 (4.2%)
INR 40,00,000 to 50,00,000	29 (5.8%)
INR 50,00,000 to 60,00,000	22 (4.4%)
INR 60,00,000 to 70,00,000	10 (2%)
INR 70,00,000 to 80,00,000	12 (2.4%)
INR 80,00,000 to 90,00,000	7 (1.4%)
Above INR 90,00,000	28 (5.6%)
Education n (%)	
Bachelor's degree	397 (79.2%)
Master's degrees	63 (12.6 %)
Professional degree (MS, MBA, MD, PhD, etc)	15 (3%)
Vocational, technical, trade or other certification programme	2 (.4%)
Others	24 (4.4%)
Stream n (%)	
Arts and Humanities	112 (22.4%)
Commerce	205 (40.9%)
Engineering/Technology	10 (2%)
Medical/Health Sciences	20 (4%)
Science	125 (25%)
Others	29 (5.8%)
BMI (M $\pm$ SD)	23.64 (4.37)
Financial literacy (M $\pm$ SD)	0.63 (0.372)
Smoking cigarettes n (%)	47 (10.6%)
E-cigarettes n (%)	49 (11.1%)
Alcohol n (%)	84 (19%)
Marijuana n (%)	49 (11.1%)
Drugs n (%)	8 (1.8%)
Physically active n (%)	238 (53.7%)
Binge eating n (%)	90 (16.9%)
Myopic view n (%)	95 (21.7%)
Risk preference (M $\pm$ SD)	5.86 (2.66)
Level of happiness (M $\pm$ SD)	6.44 (2.36)
Anxieties about health n (%)	198 (45.4%)

Source: Data collected. M=Mean, SD=Standard deviation, n=Number of observation.

reviewed for clarity and readability by a small group of university students. Minor wording adjustments were made based on their feedback. The participants for the survey were recruited using convenience sampling via multiple channels like classroom circulation, student networks and social media platforms (Facebook, LinkedIn) between August and October 2025. Before starting the survey, interested individuals were screened through an information sheet to ensure they met the inclusion criteria, namely being currently enrolled in a university programme, fluent in English, and having access to the internet and a smartphone or computer. Participants meeting the criteria were directed to the questionnaire, and informed consent was obtained electronically before their participation.

Measures

Substance Use: Participants were asked whether they had consumed cigarettes, e-cigarettes, alcohol, marijuana and other drugs (e.g. cocaine, heroin, methamphetamine, etc.) with the question, 'Do you consume...?' Responses were measured on a 5-point Likert scale ranging from *never* to *always*. Participants were classified as substance users if they reported using the substance at least sometimes.

Physical Activity: Physical activity was measured by asking participants, 'Do you exercise?' Response options included: *every day*, *3–4 times a week*, *1–2 times a week*, *once a month*, and *never*. Based on research indicating that exercising at least 1–2 times per week can reduce mortality risk (O'Donovan et al., 2017), participants reporting exercise more than 1–2 times per week were classified as physically active.

Binge Eating: Binge eating was assessed using two yes/no questions from the Questionnaire on Eating and Weight Patterns-Revised (Yanovski et al., 2014). Participants were classified as engaging in binge eating if they answered 'yes' to both statements: 'In the past year, have you ever eaten so much food in a short period of time that you would be embarrassed if others saw you (binge-eating)?' 'During these episodes, did you feel you couldn't stop eating or control what or how much you were eating?'

BMI: Participants self-reported their height and weight, which were used to calculate BMI using the formula: $BMI = \text{weight (kg)} / (\text{height (m)})^2$, following CDC guidelines (Kuczmarski et al., 2002). Participants were then classified as having a BMI in the normal range or outside it.

Demographic Variables: Participants self-reported their age, gender, educational qualification, and income level.

Independent variable: Our primary independent variable was financial literacy, measured using the financial literacy questionnaire developed by Lusardi and Mitchell (2008). This questionnaire assesses respondents' understanding of key financial concepts, including compound interest, inflation, and diversification, which are essential for making informed financial decisions. The questionnaire has been widely used due to its simplicity, adaptability, and reliability (Nicolini & Haupt, 2019; Ogura et al., 2025; Watanapongvanich et al., 2021; Watanapongvanich et al., 2022; Zheng et al., 2021). Each financial literacy correct response was scored as 1, and incorrect responses as 0. Following previous studies (Ogura et al., 2025; Ono et al., 2021), the total financial literacy score was calculated by averaging the scores across the three items.

Similar to previous studies examining financial literacy and health behaviour (Ogura et al., 2025; Ono et al., 2021; Watanapongvanich et al., 2021), we controlled for demographic variables like gender, income, age, and behavioural factors, including myopic future orientation, risk preference, current happiness, and health-related anxiety. However, several demographic variables included in these studies (e.g. marital status, household composition, or employment status) were not applicable in the present analysis, as our sample consisted exclusively of university students. Furthermore, although participants' educational qualifications and field of study were collected, these variables were reported in the descriptive statistics only due to a lack of variation. The details of the variables are provided in Table 2.

Statistical analysis

All analyses were conducted using IBM SPSS Statistics for Windows (IBM Corp, 2021). Descriptive statistics were calculated and presented as means and percentages. Given that all dependent variables were binary, probit regression models were employed, as they are appropriate for estimating the probability of an event

Table 2. Description of variables used in the analysis.

Variable	Description
Financial literacy	Continuous: Assessed using the three-item financial literacy questionnaire developed by Lusardi and Mitchell (2008).
Substance Use	Binary variable: 1 = substance used like cigarettes, e-cigarettes, alcohol, marijuana, other drugs (sometimes, most of the time, always); 0 = non-user (never, hardly ever).
Physical Activity	Binary: 1 = physically active (exercise at least once a week); 0 = otherwise.
Binge eating	Binary: 1 = participant answers 'yes' to both of the following statements: 1. 'In the past year, have you ever eaten so much food in a short period of time that you would be embarrassed if others saw you (binge-eating)?' 2. 'During these episodes, did you feel you couldn't stop eating or control what or how much you were eating?' 0 = otherwise.
*BMI- Normal range	Binary: Calculated BMI $BMI = \text{weight (kg)} / (\text{height (cm)} / 100)^2$. 1 = $BMI \geq 18.5$ and < 25 ; 0 = otherwise.
Myopic view of the future	Binary: 1 = participant agrees or completely agrees with the statement 'Since the future is uncertain, it is a waste to think about it'; 0 = otherwise.
Level of risk preference	Continuous: Self-rated willingness to take financial risks: 0 = no willingness to take risks, 10 = complete willingness to take risks.
Current level of happiness	Continuous: Self-rated overall happiness: 0 = not at all happy, 10 = extremely happy.
Anxiety about health	Binary: 1 = participant agrees or completely agrees with the statement 'I have anxieties about my health'; 0 = otherwise.
Gender	Female = 1
Age	Continuous
Income	Continuous

Variables as defined in this study.

*BMI=Body Mass Index.

occurring while accounting for the non-linear nature of dichotomous outcomes (Greene, 2018; Wooldridge, 2010). The analytical approach adopted in the present study was further informed by prior research examining the relationship between financial literacy and health behaviours (Khan et al., 2021; Ogura et al., 2025; Ono et al., 2021; Watanapongvanich et al., 2021). Separate regressions were conducted for each health behaviour. For BMI, a robustness check was conducted using linear regression to examine the association between BMI and financial literacy before categorising BMI into the normal range versus other categories.

A progressive modelling approach was employed to examine whether the relationship between financial literacy and health behaviour remained robust after sequential adjustments for demographic variables and specific behavioural characteristics. This approach facilitates the assessment of the incremental contribution of psychological and behavioural factors beyond demographic variables.

In line with previous studies (Watanapongvanich et al., 2021), there can be multicollinearity between several predictor variable measures. For instance, people with a higher income level can have higher financial literacy. Hence, we conducted the multicollinearity test. The variance inflation factor (VIF) values for all predictors indicated no multicollinearity issues.

The overall fit of the probit regression models was assessed using likelihood ratio chi-square tests comparing the full models to intercept-only models. Across all models, the likelihood ratio tests were statistically significant, indicating that the inclusion of predictors significantly improved model fit. The models demonstrated good fit to the data, with chi-square values ranging from 23.33 to 57.27 (p -values $\leq .01$), suggesting that the predictors collectively contributed to explaining variation in health behaviour outcomes. See Table 3.

Three models were tested for each health behaviour:

Model 1: Financial literacy and demographic variables.

$Health\ Behaviour_i$ ($1 = \text{presence of behaviour}$; $0 = \text{absence}$) = $\beta_0 + \beta_1 Financial\ Literacy_i + \beta_2 Gender_i + \beta_3 Income_i + \beta_4 Age_i + \epsilon_i$.

Model 2: Model 1 + myopic view of the future and level of risk preference.

$Health\ Behaviour_i$ ($1 = \text{presence of behaviour}$; $0 = \text{absence}$) = $\beta_0 + \beta_1 Financial\ Literacy_i + \beta_2 Gender_i + \beta_3 Income_i + \beta_4 Age_i + \beta_5 Myopic\ view\ of\ future_i + \beta_6 Risk\ preference_i + \epsilon_i$.

Model 3: Model 2 + the current level of happiness and health-related anxiety.

$Health\ Behaviour_i$ ($1 = \text{presence of behaviour}$; $0 = \text{absence}$) = $\beta_0 + \beta_1 Financial\ Literacy_i + \beta_2 Gender_i + \beta_3 Income_i + \beta_4 Age_i + \beta_5 Myopic\ view\ of\ future_i + \beta_6 Risk\ preference_i + \beta_7 Current\ happiness_i + \beta_8 Health\ anxiety_i + \epsilon_i$.

Table 3. Probit regression analysis examining the association between financial literacy as a main explanatory variable and health behaviours.

Predictor	Smoking β (SE)	E-Cigarettes β (SE)	Alcohol β (SE)	Marijuana β (SE)	Drug Use β (SE)	Physical Activity β (SE)	BMI (Normal Range) β (SE)	Binge Eating β (SE)
Financial literacy	-0.21 (0.23)	-0.43 (0.22)*	-0.15 (0.20)	-0.59 (0.23)**	-1.15 (0.50)*	0.37 (0.17)*	0.68 (0.17)***	-0.69 (0.19)***
Gender (Female = 1)	-0.24 (0.18)	0.14 (0.17)	-0.14 (0.16)	0.12 (0.18)	0.58 (0.39)	-0.54 (0.13)***	0.30 (0.13)*	-0.14 (0.15)
Income	0.11(0.03)***	0.10 (0.03)***	0.15 (0.03)***	0.12 (0.03)***	0.00 (0.06)	0.04 (0.02)	-0.01 (0.02)	-0.06 (0.03)*
Age	0.04 (0.02)	0.01 (0.02)	0.02(0.02)	0.04(0.02)*	-0.08 (0.04)*	0.03 (0.02)	-0.03 (0.02)	-0.02 (0.02)
Myopic future view	-0.12 (0.22)	-0.11(0.21)	0.28 (0.18)	0.29 (0.21)	0.75 (0.37)*	-0.08 (0.16)	0.12 (0.16)	0.08 (0.18)
Risk preference	0.05 (0.04)	0.04 (0.04)	0.06 (0.03)*	0.01 (0.04)	0.03 (0.06)	0.02 (0.03)	-0.05 (0.03)	0.01 (0.03)
Current happiness	-0.05(0.04)	-0.05 (0.04)	-0.07 (0.03)*	-0.05 (0.04)	0.10 (0.09)	0.05 (0.03)*	0.05 (0.03)	-0.07 (0.03)*
Health anxiety	-0.04 (0.18)	0.02 (0.18)	0.33 (0.16)*	0.49 (0.19)**	-0.23 (0.38)	-0.31 (0.13)*	-0.33 (0.13)*	0.22 (0.15)
Constant	-2.12 (0.55)***	-1.45 (0.55)**	-1.22(0.51)***	-2.27 (0.57)***	-1.21 (1.10)	-0.90 (0.45)*	0.32 (0.45)	0.44 (0.53)
Log likelihood	-134.146	-138.485	-181.475	-126.803	-27.616	-270.350	-270.135	-198.227
Likelihood ratio	23.325	23.518	57.273	50.465	24.216	43.232	36.268	26.541
Chi-square								
P-value	.003	.003	<.001	<.001	.002	<.001	<.001	<.001

Note: Bold values indicate statistically significant associations. Robust standard errors in parentheses * $p < .05$, ** $p < .01$, *** $p < .001$.

Results

We used the probit regression to examine the relationship between financial literacy, various health-related behaviours, demographic variables, and psychological traits. Three models were tested for each outcome, with successive models including additional covariates: myopic view of the future, risk preference, current happiness, and anxiety about health. Results are presented for Model 3 only, as the direction and significance of the findings across Models 1 and 2 remained largely consistent. Reporting the final model avoids redundancy and provides a more parsimonious presentation of the findings. The results for model 1 and model 2 can be made available upon request.

Financial literacy was a significant predictor of several health behaviours. Higher financial literacy was associated with a lower likelihood of e-cigarette use ($\beta = -0.43, p < .05$), marijuana use ($\beta = -0.59, p < .01$), drug use ($\beta = -1.15, p < .05$), and binge eating ($\beta = -0.69, p < .001$). Conversely, greater financial literacy was positively related to physical activity ($\beta = 0.37, p < .05$) and maintaining a BMI within the normal range ($\beta = 0.68, p < .001$), suggesting that financially literate individuals tend to engage in healthier behaviours overall.

Income was a robust positive predictor of several substance use behaviours, including smoking ($\beta = 0.11, p < .001$), e-cigarette use ($\beta = 0.10, p < .001$), alcohol consumption ($\beta = 0.15, p < .001$), and marijuana use ($\beta = 0.12, p < .001$), but was negatively associated with binge eating ($\beta = -0.06, p < .05$).

Gender also played a significant role, with females less likely to engage in physical activity ($\beta = -0.54, p < .001$) but more likely to have a BMI within the normal range ($\beta = 0.30, p < .05$). Age was positively associated with marijuana use ($\beta = 0.04, p < .05$) but negatively related to drug use ($\beta = -0.08, p < .05$).

Among psychological factors, myopic future view positively predicted drug use ($\beta = 0.75, p < .05$), indicating that individuals with a shorter-term outlook were more likely to engage in drug use. Risk preference was positively associated with alcohol use ($\beta = 0.06, p < .05$), reflecting a behavioural inclination toward risk-taking. Current happiness negatively predicted alcohol use ($\beta = -0.07, p < .05$) and binge eating ($\beta = -0.07, p < .05$), but positively predicted physical activity ($\beta = 0.05, p < .05$). Finally, health anxiety was positively related to alcohol ($\beta = 0.33, p < .05$) and marijuana use ($\beta = 0.49, p < .01$) but negatively associated with physical activity ($\beta = -0.31, p < .05$) and BMI (normal range) ($\beta = -0.33, p < .05$). Results are presented in Table 3.

Additionally, as a robustness check, we also conducted a regression analysis between financial literacy and BMI as continuous variables (Table 4). The results indicated that financial literacy was a significant negative predictor of BMI in model 1 ($\beta = -1.21, SE = 0.56, p < .05$), indicating that students with higher financial literacy tended to have lower BMI. However, this association became non-significant ($\beta = -1.08, SE = 0.57$) after controlling for additional psychological factors. Among psychological factors, health anxiety was positively associated with BMI ($\beta = 0.95, SE = 0.44, p < .05$). This finding indicates that students experiencing higher health-related anxiety were more likely to have higher BMI. Gender was a consistent and significant predictor across all models ($\beta = -1.46$ to $-1.69, p < .001$), with female students exhibiting lower BMI compared to their male. Income also showed a positive association with BMI ($\beta = 0.15$ – $0.18, SE = 0.08, p < .05$), indicating that students from higher-income households tended to have higher BMI values. Age was positively related to BMI ($\beta = 0.25$ – $0.26, SE = 0.06, p < .001$), suggesting that older students within the sample were more likely to have higher BMI.

Table 4. Linear regression analysis predicting body mass index (BMI) based on financial literacy, demographic, and psychological factors.

	Model 1 β (SE)	Model 2 β (SE)	Model 3 β (SE)
Financial literacy	-1.21 (0.56)*	-1.21 (0.57)*	-1.08 (0.57)
Gender	-1.46(0.42)***	-1.51 (0.43)***	-1.69(0.43)***
Income	0.16 (0.08)*	0.18(0.08)*	0.15 (0.08)
Age	0.25(0.06)***	0.26 (0.06)***	0.25 (0.06)***
Myopic future view		-0.73 (0.51)	-0.52 (0.52)
Risk preference		0.06 (0.08)	0.13 (0.08)
Current happiness			-0.17(0.09)
Health anxiety			0.95(0.44)*

Note: Robust standard errors in parentheses * $p < .05$, ** $p < .01$, *** $p < .001$.

Discussion

The aim of the current study was to examine the relationship between financial literacy and various health-related behaviours among Indian youth. The findings revealed that higher financial literacy was associated with lower consumption of e-cigarettes, marijuana, drugs, and binge eating and positively associated with higher engagement in physical activity and maintaining a normal BMI, supporting the rational decision-making framework.

The results are consistent with Grossman's human capital model (Grossman, 2007, 1972), according to which health can be viewed as a form of health capital in which individuals invest and maintain throughout their lifespan. From this perspective, financially literate individuals may be better equipped to evaluate the long-term costs and benefits of their actions, enabling them to make more informed decisions regarding their health. Hence, they may be more likely to engage in health-promoting behaviours, such as regular physical activity, maintaining a healthy BMI while avoiding behaviours that may compromise future health, including e-cigarettes, marijuana, drug use, and binge eating. The present findings are therefore consistent with the proposition that financial literacy facilitates decisions that support the accumulation and preservation of health capital.

Past literature supports this idea that individuals with higher financial knowledge have a higher chance of engaging in health-promoting behaviour as they are better at planning, delaying gratification, and decision making (Hardika et al., 2024; Lusardi & Mitchell, 2014; Ogura et al., 2025; Ono et al., 2021). Moreover, studies have shown that these effects of financial literacy on reducing unhealthy behaviours are seen across various cultures (Khan et al., 2021; Ogura et al., 2025; Watanapongvanich et al., 2021; Yamaguchi et al., 2026).

However, in this study, financial literacy did not significantly predict smoking or alcohol use, suggesting that there may be other factors that have a stronger impact. One possible explanation could be that the study included the majority of university students who tend to experiment with and consume more alcohol and tobacco during late adolescence and early adulthood (Hingson et al., 2005; Johnston et al., 2014; Schulenberg & Maggs, 2002; Schulenberg et al., 2017; White & Hingson, 2014). Moyle and Coomber (2019) referred to the university as a 'risk environment', as it overlaps with a critical developmental transition in which young people begin forming adult identities (Arnett, 2000).

During this transition, students often live away from their families, experience independence, navigate through university, and often form new social and romantic relationships while managing academic pressure. Alcohol and cigarette use are frequently reported as a coping mechanism for academic stress (Metzger et al., 2017; Staten & Ridner, 2007) and as a means to enhance social interaction and foster a sense of belonging (Brown & Murphy, 2018; Liu et al., 2017; Ross-Houle & Quigg, 2019). Besides this, e-cigarettes, marijuana and consumption of any illicit drugs are banned in India, making alcohol and cigarettes the more easily accessible and socially permissible substances for use.

In the current study, females had lower BMI; however, males engaged in more physical activity. These findings are supported by the financial literacy and health behaviour literature (Ogura et al., 2025; Ono et al., 2021), as well as studies examining gender differences in physical activity, body composition, and eating patterns (Feraco et al., 2024; McCarthy & Warne, 2022). This pattern suggests that men and women may adopt different strategies for maintaining a healthy body weight. Women are more likely to regulate their body weight through dietary control and food choices (Gil et al., 2022; Legget et al., 2023), whereas men, although engaging more frequently in physical activity, tend to be less concerned with appearance or body weight. Moreover, some evidence indicates that men may perceive engaging in physical activity primarily for weight control as a more feminine behaviour (Kim & Shin, 2020).

Furthermore, higher income was associated with increased likelihood of engaging in substance use behaviours such as smoking, e-cigarette use, alcohol consumption, and marijuana use, while it was negatively associated with binge eating. These findings are consistent with previous research suggesting that higher socioeconomic status is linked to increased substance use attributed to greater affordability, social exposure, and peer influence (Humensky, 2010; Patrick et al., 2012; Sehwat et al., 2026), whereas lower income is associated with a higher risk of binge eating, as food insecurity, economic stress, and reliance on inexpensive, energy-dense foods contribute to disordered eating patterns (Mikhail et al., 2023; Nagata et al., 2023; West et al., 2021). These patterns underscore a complex socio-economic determinant of Indian youth health behaviours, indicating a need to design interventions that are sensitive to both the affluence-related risk-taking and deprivation-related coping mechanisms.

Considering the psychological factors, a myopic future outlook and risk preference positively predicted drug use and alcohol use, respectively. This finding is consistent with evidence suggesting that individuals with a higher tendency toward risk-taking are more likely to engage in various risky behaviours (Anderson & Mellor, 2008; Dave & Saffer, 2008). Similarly, individuals with a more myopic view of the future tend to focus on the present; in other words, they would prioritise immediate rewards over long-term consequences, which may lead them to underestimate or overlook the potential adverse health effects of drug consumption (Ida & Goto, 2009; Mitchell, 1999).

Finally, the current happiness level was negatively associated with alcohol use and binge eating and positively associated with physical activity, while health anxiety increased the likelihood of alcohol and marijuana use but decreased physical activity and normal BMI, highlighting the complex role of mental states in health behaviour regulation.

There is evidence that happiness levels and health behaviours are positively associated, with higher subjective well-being linked to the maintenance of healthier lifestyles (Baruth et al., 2011; Trudel-Fitzgerald et al., 2019). This association may be explained by the fact that positive affect is closely related to other psychological attributes such as optimism, self-efficacy, vitality, and adaptive coping strategies (Lyubomirsky et al., 2005), which in turn promote engagement in health-enhancing behaviours and greater adherence to lifestyle goals (Chao et al., 2022; Debska-Janus et al., 2025; FCJH et al., 2021; Trost et al., 2002). Furthermore, studies have reported that people with high health anxiety, though they seek medical reassurance and get body check-ups, rely on maladaptive ways to cope with anxieties and avoid health care behaviours (Dattilo et al., 2021; French & Hameed, 2021; Kikas et al., 2024).

Despite its contributions, this study has certain limitations. Firstly, the findings cannot be generalised as the data were collected from young adults living mostly in the metropolitan areas of India. Secondly, there may be certain factors not measured in the study, such as personality traits, self-discipline, or genetic predispositions that influence health behaviours. Thirdly, the issue is with the question used to measure financial literacy. Three questions from Lusardi and Mitchell (2008) were used which although is widely accepted and validated measure (Fornero & Monticone, 2011; Kadoya & Khan, 2018; Ono et al., 2021; Sekita, 2011) and considered an acceptable measure (Nicolini & Haupt, 2019), some researchers have questioned the reliability of financial literacy as a predictor of financial behaviours (Huston, 2010; Rieger, 2020). Fourth, the robustness of several health behaviour measures could not be fully assessed. For instance, BMI was based on self-reported weight and height, which may introduce reporting bias or measurement error due to participants' tendency to underestimate weight or overestimate height. Moreover, studies have questioned the use of self-reported data in assessing health behaviours, noting that such measures may not accurately capture individuals' actual practices or physical characteristics (Ravelli & Schoeller, 2020). This concern is particularly relevant in the context of sensitive behaviours such as substance use, where responses may be influenced by social desirability bias and under-reporting. As a result, the accuracy of self-reported substance use in the present study may be limited, and findings should be interpreted with this potential bias in mind. Finally, as the study employed a correlational design, it does not allow causal interpretations, and the findings should be interpreted with caution.

Conclusion and policy implications

In conclusion, the present study reported a relationship between financial literacy, demographic variables, psychological factors, and various health-related behaviours among Indian youth. The findings are consistent with Grossman's capital model, according to which higher financial literacy is associated with reduced risk of engaging in unhealthy behaviours and promotes healthy behaviour. These findings highlight the importance of financial literacy in not only promoting economic well-being but also promoting healthier lifestyle choices.

Importantly, this study makes an original contribution to the literature by being among the first to examine the association between financial literacy and health behaviours within the Indian youth population. In doing so, it generates new empirical insights into the broader behavioural implications of financial literacy beyond financial decision-making alone. The findings also extend the existing global literature (Khan et al., 2021; Ogura et al., 2025; Watanapongvanich et al., 2021; Yamaguchi et al., 2026) by providing evidence from an underrepresented cultural context and thereby contributing to a more globally inclusive understanding of the social determinants of health behaviours.

However, financial literacy was not associated with smoking or alcohol use in the current study, suggesting that these behaviours may be influenced by factors beyond individual cognitive or financial competencies, such as social, cultural, environmental, or peer-related influences. Future research should therefore explore additional mechanisms that may explain these behaviours and examine the pathways through which financial literacy may influence health outcomes across different populations and contexts.

Overall, these results highlight the potential of financial literacy as an important determinant of health. Financial knowledge could foster skills such as planning, delayed gratification, and indirectly promote healthy lifestyle habits.

The findings also have important practical implications for policymakers, educators, and public health practitioners. To capitalise on the multifaceted benefits of financial literacy initiatives should be developed that can be introduced in the early years of education. Such exposure could help equip the targeted group to develop economic well-being and a healthy lifestyle in the long run. Institutions such as the National Centre for Financial Education (NCFE) and the Reserve Bank of India's Financial Literacy Centres could collaborate with the Ministry of Health and Family Welfare to design combined 'financial and health literacy' modules that help young people make informed choices about both money and personal well-being. Universities and colleges can also play an important role by designing and offering courses or workshops that combine financial counselling and physical health programmes.

Furthermore, future research should focus on developing and evaluating policies and interventions aimed at improving financial literacy and understanding how these may influence health-related behaviours. Longitudinal and experimental research designs are needed to establish causal relationships between financial literacy and health outcomes over time. Interdisciplinary collaboration among economists, psychologists, public health researchers, and healthcare professionals will also be essential for developing integrated and evidence-based interventions. The observed differences across income groups and gender also suggest that future interventions may benefit from considering demographic variations in health behaviour patterns.

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Author contributions

Conceptualisation: AS; Methodology: AS and KS; Investigation: AS, KS, and GT; Formal analysis: AS; Writing - Original draft: AS; Writing - Review and editing: AS, KS, and GT.

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ORCID

Ankita Sehrawat  0000-0001-8190-1246

Data availability statement

The data that support the findings of this study are openly available in the Open Science Framework (OSF) at https://osf.io/pz8cg/overview?view_only=34c25bfa408d4e91b7b6dd31d772a333.

Ethics approval statement

This project received ethics approval from the Research Ethics Review Board of the Jindal School of Banking and Finance (JSBF), O.P. Jindal Global University (RERB/2025/298).

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