

Role of Locus of Control in Health Impairing/Promoting Behavior of Adolescents

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ABSTRACT

This study examines the relationship between locus of control (LOC) and health behaviors among adolescents in Punjab, India, to identify the impact of locus of control on health-promoting and health-impairing behaviors. A correlational research design was employed with a sample of 554 senior secondary school students in Barnala, Punjab. Participants completed the Indian Adolescent Health Behavior (IAHB) questionnaire by Long et al., (2013) and the Multidimensional Health Locus of Control (MHLC) by Wallston, Wallston & DeVellis (1978) scales. Results indicated that an internal LOC was positively associated with health-promoting behaviors, including physical activity, nutritious diet, and personal hygiene, and negatively associated with health-impairing behaviors like sexual risk-taking and substance abuse. Conversely, a powerful others LOC was negatively associated with physical health and hygiene, and positively linked to sexual risk-taking and substance abuse. No significant correlations were observed for chance LOC. These findings underscore the importance of fostering an internal LOC to enhance health outcomes among adolescents. The study contributes to understanding the influence of LOC on health behaviors in the Indian context, highlighting the role of psychological factors in health interventions.

Keywords: *Adolescence, Health Behaviors, Locus of Control*

In the field of psychology, locus of control refers to an individual's belief system regarding the factors that control the outcomes of their life events. This psychological concept, first introduced by Julian Rotter in 1966, categorizes individuals as having either an internal locus of control, where they believe they have control over their own destiny, or an external locus of control, where they perceive their lives are controlled by external factors such as fate or luck. Locus of control, fundamentally shapes our understanding of human behavior by highlighting the critical role of individual beliefs in influencing life outcomes. Rotter's Social Learning Theory, which emphasizes that behaviors are predominantly learned through social interactions, underscores the significant impact of external reinforcement and individual internal expectations on behavioral outcomes. This theory suggests that the likelihood of a behavior occurring is intricately linked to a person's belief in the potential for reinforcement and the value they place on it (Zimmerman, 2000). Seligman's Learned Helplessness Theory (1975) further expands on

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this by suggesting that a perceived lack of control over outcomes can lead to a state of learned helplessness, contributing to mental health issues like depression (Maier & Seligman, 2016). Perceptions of the locus of control also impact one's ability to develop and maintain healthy behaviors, further explained by Wallston et al., (1978) under the term health locus of control. It refers to an individual's belief regarding the factors that influence their health. It plays a significant role in shaping health-related behaviors by affecting how people perceive their ability to maintain and promote their health (Ghahremani et al., 2017). Essentially, HLC is the degree to which a person believes their health is controlled by either internal factors, such as personal effort and responsibility, or external forces like healthcare professionals or chance. HLC is categorized into three dimensions: internal HLC, where individuals believe their health is primarily in their own hands; powerful others HLC, where they attribute control to medical professionals; and chance HLC, where health outcomes are seen as determined by fate or luck. Understanding these perceptions can help guide the development of effective health-promoting and preventive behaviors. (Wallston et al., 1978; McBride et al., 2021).

Health-related behaviors, on the other hand, refers to actions that significantly impact an individual's well-being and can either promote or impair health. As being crucial determinants of health outcomes and influencing both morbidity and longevity health-promoting behaviors, such as maintaining a balanced diet, regular exercise, adequate sleep, safe sexual practices, and avoiding harmful substances like tobacco and alcohol, have been shown to enhance overall health and reduce the risk of chronic diseases (Haskell et al., 2007; Loprinzi & Mahoney, 2014; Myers et al., 2013; Noble et al., 2016; Spring et al., 2013). Conversely, health-impairing behaviors, including poor dietary choices, substance use, smoking, and neglect of personal hygiene, contribute to increased health risks and adverse outcomes (Sallis et al., 2000; Mokdad et al., 2004; Eaton et al., 2012). Health behaviors can be effectively understood through the Health Belief Model (HBM) by Rosenstock (1966), which posits that individuals are less likely to engage in health-promoting behaviors if they do not perceive themselves at risk for negative health outcomes. The HBM suggests that beliefs about health problems, perceived benefits of action, barriers to action, and self-efficacy all influence health-related behavior (Rosenstock, 1974; Janz & Becker, 1984; Carpenter, 2010). In the context of adolescent risk-taking behaviors, Jessor's Problem Behavior Theory (1977) emphasizes the interplay of environmental, personality, and behavioral factors in influencing risky behaviors such as substance abuse and reckless driving.

Due to the significant physical, cognitive, and social changes that occur during adolescence, it is critical to form healthy behaviors, which often set the foundation for habits that persist into adulthood. These habits can lead to preventable and non-preventable health issues, including nutritional deficiencies, obesity, substance addiction, and sexual and reproductive health challenges, potentially resulting in chronic diseases in adulthood (Busch & De Leeuw, 2014; Lazzeri et al., 2014; Nikniaz et al., 2016). Latest statistics underscores the persistent health challenges faced by adolescents. The World Health Organization (WHO, 2023) reports that over 1.5 million adolescents and young adults aged 10–24 years died in 2021, equating to approximately 4,500 deaths daily, highlighting the global urgency of addressing adolescent health. In Punjab, India, the National Family Health Survey-5 (NFHS-5, 2019–21) reveals that 60% of female and 33% of male adolescents suffer from anemia, emphasizing the need for nutritional interventions. Additionally, the survey reports a dual burden of malnutrition among adults, with 12.6% undernourished and significant rates of overweight or obesity (40.8% of women and 32.2% of men), highlighting the necessity for

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targeted health strategies. According to a study by Sawyer et al. (2012), adolescence is a crucial window for health intervention, as habits like diet, physical activity, and substance use established during this time are strong predictors of future health outcomes. Additionally, Patton et al. (2016) emphasize that early intervention during adolescence can effectively promote lifelong healthy behaviors.

Numerous studies have explored the influence of locus of control on various life outcomes. However, research specifically examining its impact on health behaviors is relatively limited and often yields mixed results. For instance, Research indicates that an internal locus of control is strongly associated with various health-promoting behaviors, as individuals with this mindset tend to take greater responsibility for their health and make healthier choices, such as using condoms and engaging in regular physical exercise (Mendolia & Walker, 2014; Norman et al., 1998). Furthermore, an internal locus of control has been linked to improved physical and mental health outcomes across diverse conditions, including HIV, diabetes, and epilepsy (Maltby & Macaskill, 2007). Conversely, individuals with an external locus of control are more prone to health-impairing behaviors, such as tobacco and alcohol use, often due to a perceived lack of control over their health (Booth-Butterfield et al., 2000; Hodgson, 2001). While hygiene behaviors have shown significant correlations with both internal and external loci of control, dietary behaviors appear unrelated to locus of control dimensions (Shabaraya et al., 2011). More recent studies reinforce these findings, highlighting that external locus of control continues to be a predictor of negative health outcomes, including substance abuse (Weiss & Larsen, 2003; Zimmerman, 2019). This inconsistency highlights the need for a more comprehensive analysis that considers different dimensions of health behavior. This study aims to explore the correlation between locus of control and health behaviors, seeking to understand how an individual's perceived control over life events influences their engagement in behaviors that either support or undermine their health. By examining this relationship, the research seeks to provide insights into psychological factors that could be targeted in health promotion efforts, especially in the context of Punjab, India, where research on this topic remains scarce.

Objectives

- To study the percentage of cases of health-promoting and impairing behaviors among adolescents.
- To Investigate the relationships between locus of control (internal, chance, and powerful others) and various domains of health behavior.

Hypotheses

- On the basis of review of literature, locus of control will be correlated with various types of health behavior among adolescents.
- Internal locus of control would be positively correlated with health promoting behavior like physical health, physical activity, nutritious diet, personal hygiene, and reproductive health while negatively correlated with health impairing behavior like sexual risk taking and substance abuse.
- External locus of control would be negatively correlated with health promoting behavior.

METHODOLOGY

Participants

The sample for this study consisted of 554 adolescents (303 females, 251 males) aged 15-17 years, drawn from senior secondary private schools in Barnala, Punjab. Participants were selected using a random sampling method from 11th and 12th-grade students across various schools in two districts. Prior permissions were obtained from school authorities, and both parental and participant consent were secured. Initially, 650 students were approached, and 554 provided complete data, yielding 85.2% response rate. Participants completed two questionnaires related to the study variables.

Measures

The Indian Adolescent Health Behavior (IAHB) questionnaire, developed by Long et al. (2013), was utilized to assess health behaviors among adolescents across eight key areas: physical health, physical activity, nutritious diet, personal hygiene, reproductive hygiene, reproductive health, sexual risk-taking, and substance abuse. This extensive tool comprises 65 self-report items, providing an in-depth analysis of multiple facets of adolescent health.

The Multidimensional Health Locus of Control (MHLC) scale, by Wallston, Wallston, and DeVellis (1978), was the key tool used to assess participants' health locus of control. This 18-item self-report scale measures three dimensions: internal locus of control, external locus of control, and powerful others locus of control, offering a detailed view of how individuals perceive the influence of personal actions, external factors, and influential others on their health outcomes.

Procedure

A correlational research design was employed in this study to examine the relationship between locus of control, categorized into Internal, Chance, and Powerful Others and various domains of health behavior, including physical health, physical activity, nutrition, personal hygiene, reproductive hygiene, reproductive health, sexual risk-taking, and substance abuse. This approach enables the assessment of how different orientations of control perceptions are linked to health-related behaviors among individuals.

Statistical Analysis

Descriptive statistics was used to study the percentage of cases of adolescents on various health-promoting and impairing behaviors of adolescents. Pearson Product-Moment Correlation Coefficient was utilized to evaluate the relationship between locus of control specifically Internal LOC, Chance LOC, and Powerful Others and various health behaviors. These behaviors include aspects of physical health, physical activity, adherence to a nutritious diet, maintenance of personal hygiene, reproductive hygiene practices, reproductive health, engagement in sexual risk-taking behaviors, and substance abuse.

RESULTS & DISCUSSION

Demographical features

Table 1 outlines the demographic characteristics of the 554 adolescent participants. The sample included 303 females (54.6%) and 251 males (45.3%), with ages ranging from 15 to 18 years ($M = 16.5$, $SD = 1.0$). Family structure revealed that 56% of adolescents were from joint families and 44% from nuclear families. Additionally, 57% of the participants were from rural areas, while 43% were from urban settings. Academically, 45% were enrolled in arts programs, 22% in science, and 33% in commerce.

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Table 1: Showing the demographical features of the sample

SN.	Demographics		Females	Males	Total
1	Age		15 – 18 year	15 – 18 year	15 – 18 year
2	Family type	Nuclear	52%	49%	56%
		Joint	58%	42%	44%
3	Stream	Arts	54%	46%	45%
		Science	72%	27%	22%
		Commerce	43%	57%	33%
4	Locality	Rural	51%	49%	57%
		Urban	60%	40%	43%

Fig 1: percentage cases of adolescents in various domains of health behavior

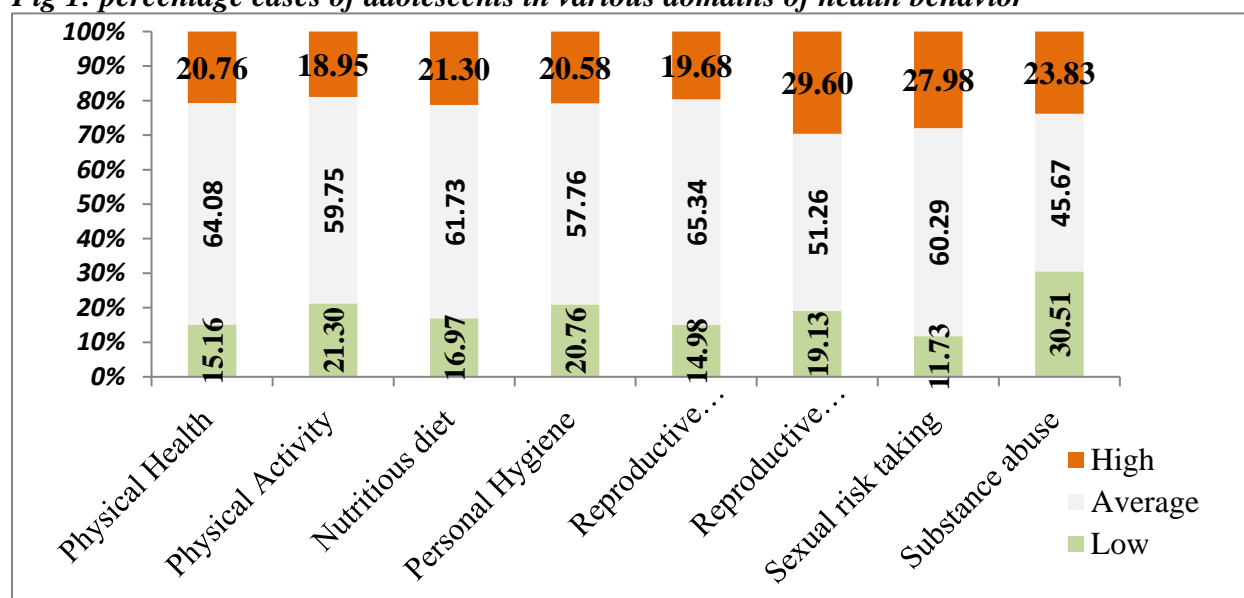


Table 2: the percentage cases of health behavior among adolescents

S.No	Domains		Mean	S.D.	Low %	Average%	High %
1	Physical health	Females	37.48	5.47	18.15	59.74	22.11
		Males	35.63	4.67	11.55	69.32	19.12
		Overall			15.16	64.08	20.76
2	Physical activity	Females	27.66	5.64	20.46	61.06	18.48
		Males	25.39	4.98	22.31	58.17	19.52
		Overall			21.30	59.75	18.95
3	Nutritious diet	Females	38.54	5.35	18.48	59.41	22.11
		Males	36.90	5.40	15.14	64.54	20.32
		Overall			16.97	61.73	21.30
4	Personal hygiene	Females	17.25	2.76	26.40	52.81	19.14
		Males	15.35	2.81	13.94	63.75	22.31
		Overall			20.76	57.76	20.58
5	Reproductive hygiene	Females	15.42	2.44	11.22	57.10	31.68
		Males	13.44	2.42	19.52	75.30	5.18
		Overall			14.98	65.34	19.68
6	Reproductive health	Females	11.94	3.68	18.48	48.51	33.00
		Males	9.88	3.10	19.92	54.58	25.50
		Overall			19.13	51.26	29.60

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S.No	Domains		Mean	S.D.	Low %	Average%	High %
7	Sexual risk taking	Females	24.36	5.11	12.21	59.41	28.38
		Males	26.57	4.99	11.16	61.35	27.49
		Overall			11.73	60.29	27.98
8	Substance abuse	Females	15.65	5.46	36.96	42.57	20.46
		Males	17.14	5.39	22.71	49.40	27.89
		Overall			30.51	45.67	23.83

Highlighting the percentage cases of adolescents in various domains of health behaviors Table 2 and Figure 1 present the findings on health behaviors among the adolescent sample. Only 20.76% of participants exhibited high levels of physical health behavior, with a gender breakdown of 22.11% females and 19.12% males. For physical activity, 18.95% scored high, with females at 18.48% and males slightly higher at 19.52%. Regarding nutritious diet behaviors, 21.30% of adolescents scored high, with males at 20.32% and females at 22.11%. Personal hygiene was high among 20.58% of participants, with 19.14% females and 22.31% males. A significant gender disparity was observed in reproductive hygiene, with 31.68% of females scoring high compared to only 5.18% of males. High scores in reproductive health were observed in 29.60% of adolescents, with females at 33.0% and males at 25.50%. Sexual risk-taking behaviors were high among 27.98% of the sample, and substance abuse behaviors were high among 23.83% of adolescents, with a gender disparity of 20.46% females and 27.89% males.

Table 3: Co-relation between Locus of control and Health behavior among the Adolescents

	<i>Physical health</i>	<i>Physical activity</i>	<i>Nutritious diet</i>	<i>Personal hygiene</i>	<i>Reproductive hygiene</i>	<i>Reproductive health</i>	<i>Sexual risk taking</i>	<i>Substance abuse</i>
Internal LOC	0.11**	0.14**	0.12**	0.14**	0.07	0.11**	-0.11*	-0.09*
Chance LOC	0.08	0.03	-0.06	0.03	-0.05	-0.02	-0.02	-0.01
Powerful Others LOC	-0.098*	-0.08	-0.13**	-0.11**	-0.02	-0.04	0.11**	0.13**

* $p < .05$, ** $p < .01$

A comprehensive examination of Table 3 reveals a significant positive correlation between an internal locus of control and various health behaviors among adolescents. Specifically, internal locus of control is associated with enhanced physical health ($r = 0.11^{**}$, $p < .01$), increased physical activity ($r = 0.14^{**}$, $p < .01$), and a commitment to a nutritious diet ($r = 0.12^{**}$, $p < .01$). It is further significantly correlated with personal hygiene ($r = 0.14^{**}$, $p < .01$) and reproductive health ($r = 0.11^{**}$, $p < .01$) and a significant negative correlation between an internal locus of control and sexual risk-taking ($r = -0.11^*$, $p < .05$) and substance abuse ($r = -0.09^*$, $p < .05$) is found. The findings align with existing research, which suggests that individuals who believe they have control over their life outcomes are more likely to engage in health-promoting behaviors, such as regular exercise and a balanced diet, thereby reducing their risk of chronic diseases (Dogonchi et al., 2022; Hassanzadeh et al., 2006). Additionally, recent studies (e.g., Botha & Dahmann, 2023; Cobb-Clark et al., 2014; Etile et al., 2021; Hoffmann & Risse, 2020; Yiming et al., 2023) confirm that an internal locus of control is generally associated with better physical and

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mental health, higher well-being, and lower likelihoods of smoking and other unhealthy behaviors. This body of research underscores that individuals with an internal locus of control are more likely to experience higher satisfaction with their health and are less likely to suffer from long-term health conditions (Churchill et al., 2020; Gale et al., 2008; Mackenbach et al., 2002). Additionally, it suggests that individuals with internal locus of control are more likely to engage in hygiene related health practices, including maintaining good hygiene and prioritizing reproductive health. Shabaraya, Romate, and Bhogle (2011) similarly found that an internal locus of control is linked to better hygiene practices, as these individuals believe their actions directly impact their health. Additionally, Dogonchi et al. (2022) reported that internal health locus of control is positively associated with awareness, psychological status, and health behaviors. However, the connection between internal locus of control and reproductive health remains underexplored compared to other health behaviors. While exploring the results of the study it is found that internal locus of control is linked with reduced likelihood of engaging in sexual risk-taking and substance abuse. Adolescents with a strong sense of personal agency are not just passive participants but active architects of their health, engaging in healthy behaviors such as regular physical activity and a balanced diet, while avoiding risky behaviors like excessive drinking and substance use (Booth-Butterfield et al., 2000). Pharr et al. (2016) demonstrate that an internal locus of control, where individuals believe they can influence their health, leads to healthier behaviors and reduced risks, including safer sexual practices. Adolescents with this mindset are more likely to use condoms and engage in fewer risky behaviors.

The study found no statistically significant relationship between Chance locus of control (LOC) and any domain of health behavior, suggesting that individuals who attribute life outcomes to luck or fate are not significantly more or less likely to engage in health-promoting or health-impairing behaviors. This aligns with findings by Ganjoo et al. (2014), which indicated that students who believed in their ability to influence their health outcomes were more likely to adopt health-promoting behaviors, while no significant relationships were observed for the Chance and Powerful Others dimensions. This suggests that internal beliefs about personal control are more influential on health behaviors than external factors like luck or fate. The results imply that interventions to improve health behaviors might be more effective if they focus on enhancing individuals' sense of personal control rather than addressing beliefs about chance. This finding is consistent with Shabaraya, Romate, and Bhogle (2011), who also found no significant relationship between Chance LOC and health behaviors, indicating that adolescents tend to believe their health is more influenced by personal actions and the guidance of parents or doctors rather than fate.

The concept of "powerful others" or external locus of control suggests that individuals believe their lives are significantly influenced by external forces or authoritative figures. This belief system has been linked to negative impacts on various aspects of health. Studies indicate a statistically significant negative relationship between a powerful others locus of control and physical health ($r = -0.10^*$, $p < .05$), a nutritious diet ($r = -0.13^{**}$, $p < .01$), and personal hygiene ($r = -0.11^{**}$, $p < .01$). Additionally, external locus of control is positively correlated with sexual risk-taking ($r = 0.11^{**}$, $p < .01$) and substance abuse ($r = 0.13^{**}$, $p < .01$). The results of the study are confirmed by existing research which explains that individual with external locus of control are less likely to indulge in health promoting behavior such as physical health, nutritious diet and personal hygiene (Mendolia & Walker, 2014; Gwandure, 2008). On the other hand, they are more likely to indulge in health impairing behaviors such as sexual risk taking and substance abuse (Jessor, Turbin, & Costa, 1998; Newsom, Knapp, & Schulz, 1996).

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Recent research supports these findings, showing that individuals with an external locus of control are less likely to engage in health-promoting behaviors and more likely to suffer from poorer psychological well-being and health outcomes (Ganjoo et al., 2014; Dogonchi et al., 2022). This orientation often leads to a diminished sense of control over health, resulting in reduced participation in health-enhancing activities and increased susceptibility to stress and depression (Abouserie, 1994). Adolescents who consume tobacco, for example, tend to attribute their health outcomes to external factors, further illustrating the detrimental effects of an external locus of control (Booth-Butterfield et al., 2000).

In contrast, individuals with an internal health locus of control are more likely to adhere to health guidelines and make proactive health decisions, understanding the direct impact of their actions on their well-being (Mendolia & Walker, 2014). These findings underscore the importance of considering locus of control in the context of health behaviors and outcomes, as it plays a crucial role in influencing individuals' engagement in health-promoting activities.

In summary, the research underscores the critical role of locus of control in influencing health behaviors. An internal locus of control empowers individuals to make healthier choices, improving well-being and potentially reducing healthcare costs by mitigating chronic disease risks (Botha & Dahmann, 2023). Conversely, those with an external locus of control are more prone to detrimental health behaviors, influenced by external factors like peer pressure and social media, which can amplify risky behaviors with significant public health consequences (Moreno et al., 2007; Laestadius et al., 2017). These findings highlight the importance of fostering an internal.

Implications

To promote health-enhancing behaviors among adolescents, fostering an internal locus of control (LOC) is essential. Adolescence is a pivotal stage for establishing lasting health habits, and an internal LOC helps resist peer pressure and promotes independent choices, making it a critical focus for educational and community programs. Strengthening internal LOC, often linked with high self-efficacy, can lead to more successful health outcomes. However, external factors like family support and socio-economic status, as well as cultural influences, can moderate the impact of LOC on health behaviors. Tailoring interventions to address these factors and incorporating culturally sensitive approaches can enhance their effectiveness. Future research should explore the long-term effects of LOC on health behaviors and refine strategies to empower adolescents, ultimately leading to healthier lifestyles and reduced risk behaviors. This study underscores the importance of integrating psychological constructs like LOC into health promotion strategies to nurture personal agency in health-related decision-making.

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Conflict of Interest

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