

ORIGINAL ARTICLE

## The Importance and Role of Health Literacy in Workplace Safety: A Narrative Review

SADEGH KAZEMI<sup>1</sup>, MOHAMMAD SAEED JADGAL<sup>2</sup>, MOJTABA FATTAHI ARDAKANI<sup>3</sup>,  
MORAD ALI ZAREIPUOR<sup>4\*</sup>

<sup>1</sup> Research Center for Emergency and Disaster Resilience, Red Crescent Society of the Islamic Republic of Iran,  
Fars, Iran.

<sup>2</sup> Department of Public Health, Chabahar University of Medical Sciences, Chabahar, Iran

<sup>3</sup> Social Determinants of Health Research Center, Non-Communicable Diseases Research Institute, Department of Health  
Education and Promotion, School of Public Health, Shahid Sadoughi University of Medical Sciences, Yazd, Iran

<sup>4</sup> Department of Public Health, Khoy University of Medical Sciences, Khoy, Iran

Received 2024-10-07; Revised 2024-12-10; Accepted 2024-12-24

This paper is available on-line at <http://ijoh.tums.ac.ir>

### ABSTRACT

**Background:** Health literacy is crucial for improving workplace safety, particularly as the complexity and variety of workplace hazards increase. Employees need the appropriate information and skills to assess risks and make informed decisions. This review highlights the role of health literacy in enhancing workplace safety and reducing accidents.

**Methods:** This narrative review examines studies published between 2010 and 2022 in both Persian and English scientific journals. Searches were conducted across databases such as PubMed, Web of Science, Scopus, SID, MagIran, and Google Scholar, using keywords including “health literacy,” “workplace safety,” “safety culture,” “health behaviors,” and “solutions.” Articles containing these keywords in their titles or abstracts were selected. From an initial pool of 76 articles, 7 met the study’s inclusion criteria.

**Results:** Health literacy helps employees understand safety and health information, recognize hazards, and make informed decisions in critical situations. It contributes to hazard awareness, effective communication, productivity, occupational disease prevention, stress management, and a stronger safety culture. Employees with higher health literacy are better equipped to protect themselves and their colleagues, resulting in fewer accidents and reduced healthcare costs. Additionally, health literacy enhances organizational decision-making and overall performance.

**Conclusion:** To improve workplace safety and productivity, organizations should implement regular health literacy programs and promote a safety-oriented culture. These efforts can reduce healthcare costs and foster a healthier work environment.

**KEYWORDS:** Health literacy, Workplace safety, Review

Corresponding author: Morad Ali Zareipour

E-mail: [Z.morad@yahoo.com](mailto:Z.morad@yahoo.com)

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## INTRODUCTION

In today's world, workplace safety is recognized as one of the most important factors in maintaining employee health and increasing productivity in work environments. Given the rapid industrial growth and diversity of occupations, attention to workplace safety has become a fundamental priority across various professional fields [1]. However, despite technological advancements and increased knowledge of workplace safety, the high incidence of occupational accidents in many countries still indicates serious issues with adherence to safety principles by employees [2]. According to statistics from the International Labour Organization (ILO), hundreds of thousands of people worldwide are injured in occupational accidents each year. This not only leads to physical and psychological harm for individuals but also incurs significant economic and social costs [3].

Health literacy is a vital component considered a prerequisite for making informed decisions in health and safety areas. Health literacy refers to an individual's ability to access, understand, evaluate, and use health-related information and services to make appropriate decisions in this domain [4]. In today's world, health literacy has become a fundamental need and plays a significant role in health-related decision-making [5, 6]. Health literacy helps individuals better identify their needs and make informed choices [7]. In the field of workplace safety, health literacy can play a significant role in promoting safety behaviors and identifying hazards. Research shows that employees with higher health literacy are more likely to follow safety guidelines and participate in safety-related activities [8]. In this regard, a study in the United States showed that employees with higher health literacy were less exposed to the risk of occupational accidents [9]. These findings indicate that improving health literacy can lead to positive changes in employees' safety behaviors. Despite this information, many questions remain in this area. In particular, how health literacy affects compliance with workplace safety and the factors that may influence this relationship are still under investigation. Additionally, the lack of a comprehensive understanding of effective strategies for improving health literacy in workplace environments and its impact on safety behavior is another existing challenge [10]. Based on past research, it can be said that health literacy can help individuals better manage stress and mental health issues, which can lead to increased safety in the workplace. Improving awareness and decision-making skills can create a safer environment

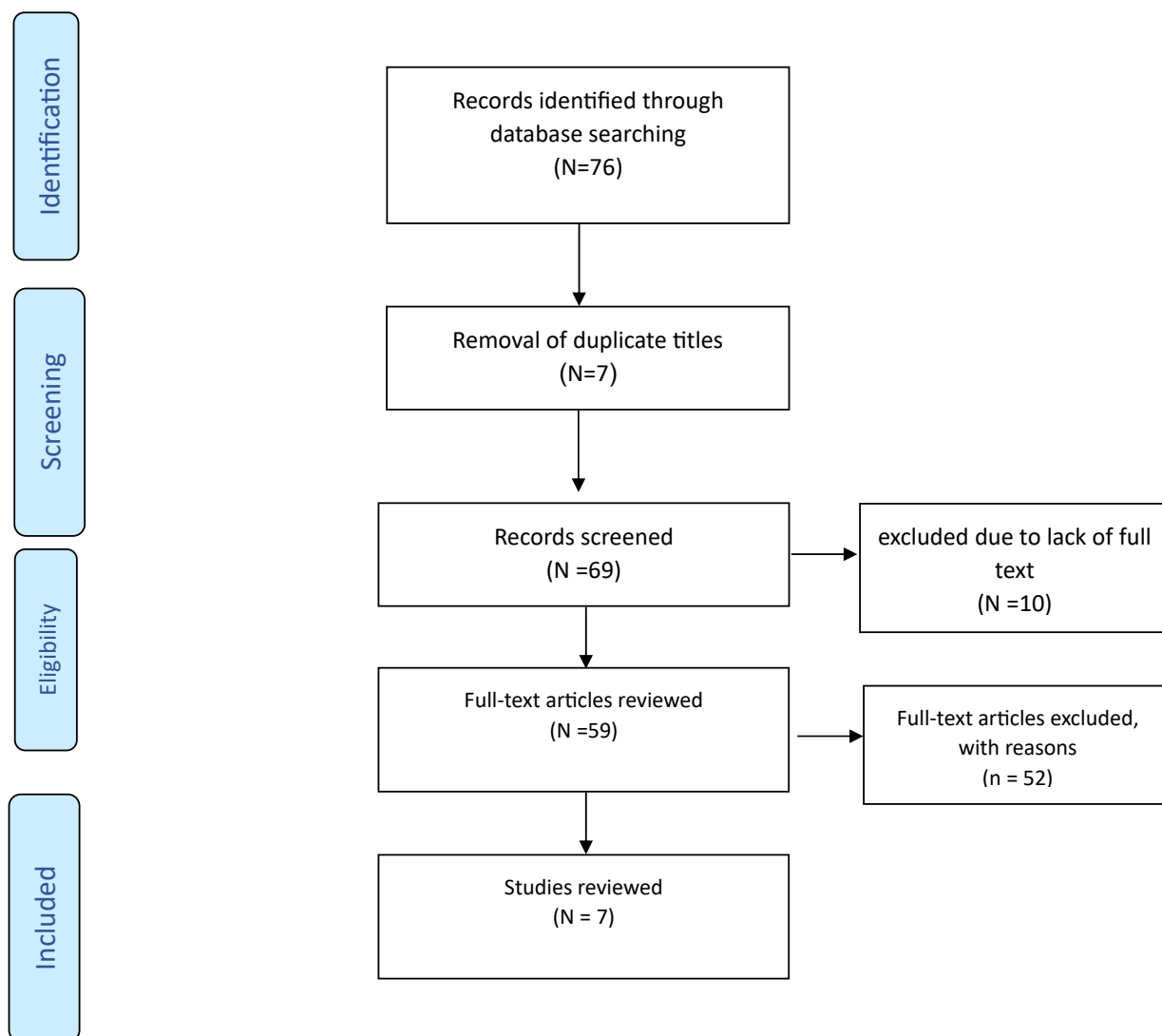
and result in a reduction in workplace accidents [11, 12]. In this regard, examining the impact of health literacy on workplace safety compliance can emerge as a new and significant research focus. This study aims to identify the relationships between health literacy and safety compliance in the workplace. While both health literacy and workplace safety compliance are important independently, the connection between these two factors can yield significant results in improving safety conditions in work environments. Attention to this relationship may lead to the development of effective educational programs and the design of health policies aimed at reducing occupational accidents and enhancing the quality of life for employees. This study provides a narrative review of the importance and impact of health literacy on improving workplace safety and reducing related accidents.

## MATERIALS AND METHODS

This study is a narrative review that examines articles published in Persian and English scientific journals, both domestic and international, between 2010 and 2022. To search for relevant studies, reputable databases and information sources including PubMed, Web of Science, Scopus, SID, MagIran, and the Google Scholar search engine were utilized. The keywords used in the search included "health literacy," "workplace safety," "safety culture," "health behaviors," and "solutions." Articles containing these keywords in their titles or abstracts were selected.

Inclusion criteria involved studies that addressed the relationship between health literacy and workplace safety, full-text articles in both Persian and English, and those that contained the relevant keywords in the title or abstract. Excluded were studies not aligned with the research objectives, studies without full-text availability, and articles published as letters to the editor.

Out of 76 articles searched in the databases, 7 articles that met the inclusion criteria were selected. The article selection process is shown in Figure 1. The extracted data from the articles included the researcher's name, year of publication, study location, research population, and findings. Due to methodological and result heterogeneity among the identified studies, quantitative synthesis of results was not performed. Data analysis was conducted through a comprehensive qualitative review, and the results were presented in a summary and conclusion.



**Figure 1.** PRISMA Flow Diagram

To assess the quality of the articles, the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines were used. The stages of article selection and analysis are illustrated in Figure 1. After applying the inclusion criteria, the full texts of the articles were read, and summaries were prepared, including the article title, lead researcher's name, publication year, study population, methodology, and study results. The findings were analyzed qualitatively and presented in the results and discussion sections.

## RESULTS

In this study, seven articles related to health literacy and workplace safety were selected, and their results were discussed. Among the articles reviewed, one was in Persian and six were in English. Regarding the research locations, one study was conducted in

Iran, one in France, one in Canada, one in Indonesia, one in the United States, one in Germany, one in the European Union, and one in Australia. In terms of study design, two studies were cross-sectional, one was quasi-experimental, one was experimental, one was quantitative, one was a before-after study, and one was a randomized clinical trial. The results of the studies are detailed in Table 1.

Based on the reviewed articles, health literacy generally enables employees to understand and utilize safety- and health-related information. This literacy includes the ability to identify hazards, understand safety protocols, and make informed decisions in critical situations. Employees with higher health literacy are typically more aware of workplace hazards and can protect themselves and their colleagues more effectively.

*The Role of Health Literacy in Workplace Safety**Awareness and Identification of Hazards*

Awareness and identification of hazards are among the most important skills that employees must possess to act more safely in the workplace. Health literacy

enables individuals to actively identify existing hazards in the work environment and gain a better understanding of environmental conditions, equipment, and work processes. Those with higher health literacy can easily recognize risks such as slips, chemical

**Table 1.** Summary of Studies on the Importance and Role of Health Literacy in Workplace Safety

No.	Author - Year	Article Title	Country	Study Type	Research Population	Findings
1	Jones (2022)	Workplace Reintegration Facilitator Training Program for Mental Health Literacy and Workplace Attitudes of Public Safety Personnel: Pre-Post Pilot Cohort Study	Canada	Quasi-experimental	Public Safety Personnel	The peer facilitator training program for workplace reintegration can bring about positive changes in attitudes and mental health literacy among public safety personnel. These findings could help improve related programs and policies.
2	Devrim Güner (2019)	Health Literacy Level of Casting Factory Workers and Its Relationship With Occupational Health and Safety Training	European Union	Cross-sectional	Foundry Workers	Limited health literacy (HL) among workers can hinder their understanding of occupational health and safety (OHS) training and potentially lead to insufficient prevention of occupational diseases. Increasing HL is crucial for improving adherence to OHS practices and promoting safer work environments.
3	Golmohammadi (2021)	Evaluation of Workplace Health Promotion Model: A Communality Trial Study in Abyek District	Iran	Experimental	Workers	Workplace health promotion interventions improved health literacy, access to health services, workplace environment satisfaction, and social support in the intervention group.
4	Hidayatulloh (2023)	Optimisasi Keselamatan dan Kesehatan Kerja untuk Meningkatkan Produktivitas Tenaga Kerja	Indonesia	Quantitative	Company Employees	Workplace safety and health measures significantly increase employee productivity, showing that improved health literacy can optimize these outcomes in a safe work environment.

**Table 1.** Summary of Studies on the Importance and Role of Health Literacy in Workplace Safety

No.	Author - Year	Article Title	Country	Study Type	Research Population	Findings
5	Forette (2014)	Evaluation of a Workplace Health Promotion Program	France	Before-After Study	Employees from Three Companies	Health literacy, by promoting healthy lifestyle behaviors, can prevent diseases and improve workplace safety through informed employee choices and practices. Improving workplace health literacy equips employees and managers with the necessary knowledge and communication skills to address health challenges and prevent injuries, strengthening the safety culture.
6	Larsen (2015)	Organizing Workplace Health Literacy to Reduce Musculoskeletal Pain and Consequences	Germany	Randomized Clinical Trial	Nurses	Low health literacy in male-dominated occupations may contribute to poorer health outcomes, indicating a potential link between health literacy and occupational health risks.
7	Milner (2020)	Health Literacy in Male-Dominated Occupations	Australia	Cross-sectional (Analytical)	Male-dominated Occupations	

spills, or the presence of unsafe machinery. By timely identifying these hazards, employees are able to prevent unfortunate incidents and provide appropriate solutions in case of problems. This ability helps employees not only avoid physical injuries but also prevent decreased productivity and negative impacts on morale [13, 14].

#### *Making Informed Decisions*

Making informed decisions regarding safety and health is a crucial aspect of health literacy. When employees possess sufficient information about workplace hazards and threats, they can make choices that support their health and safety. For example, if an individual is aware of the physical risks associated with handling chemical substances, they are more likely to use appropriate protective equipment and adopt safer work practices. In emergency situations, individuals with adequate knowledge can quickly determine the right course of action and assist others. This awareness enables employees to work with greater peace of mind and concentration, ultimately enhancing the overall performance of the organization [15, 16].

#### *Enhancing Communication Skills in the Workplace*

Enhancing communication skills is one of the significant achievements of health literacy. Effective workplace communication not only conveys safety information clearly but also fosters a shared sense of safety among employees. Individuals with stronger communication skills can express safety-related behaviors to their colleagues in an understandable manner. Conducting engaging and interactive training sessions and workshops helps increase safety awareness and understanding among employees. Additionally, those with strong communication abilities can readily relay key information and coordinate effectively during emergency situations. Therefore, strengthening communication skills not only enhances health literacy but also significantly contributes to establishing a positive safety culture within the organization [13, 17].

#### *Improved Productivity*

Productivity in the workplace depends on various factors, one of which is safety and security. When employees feel secure and satisfied with their work

environment, they are better able to concentrate on their tasks. Health literacy empowers employees to take safer actions, which in turn reduces incidents and injuries resulting from safety deficiencies. In other words, by decreasing workplace accidents and occupational illnesses, employee absenteeism is minimized leading to greater efficiency and improved productivity [15, 18].

#### *Prevention of Occupational Diseases*

Preventing illnesses in the workplace is critically important, and health literacy is one of the key tools for achieving this goal. Employees who are familiar with health hazards and know how to assess them can better protect themselves against occupational diseases and other work-related illnesses. Adequate knowledge about personal hygiene—such as proper handwashing and adherence to health guidelines—can help prevent the spread of disease. Additionally, awareness of early signs of illness and the importance of consulting a physician can support early detection and treatment. Ultimately, organizations that promote health literacy among employees can not only reduce rising healthcare costs but also foster a healthier work environment that benefits everyone [14, 16].

#### *Creating a Safety Culture*

Establishing a safety culture within an organization requires collective effort and a deep understanding of health literacy. When all employees are aware of and respect the importance of safety and health, these values become embedded in the organizational culture. This safety culture also depends on the support and endorsement of management. In other words, when employees observe management's commitment to safety initiatives and training, they feel that their well-being is valued, which enhances their confidence and engagement. Employees should be encouraged to participate in identifying and reporting hazards and to contribute to the continuous improvement of safety practices. A robust safety culture can lead to a reduction in workplace accidents and foster a stronger sense of belonging and satisfaction among staff [18, 19].

#### *Stress Management and Mental Health*

Health literacy not only encompasses the understanding of physical and safety issues but also extends to mental health and stress management. Work environments that prioritize employees' mental well-being typically foster a safer and more supportive atmosphere. Employees with health literacy can learn stress management

techniques such as relaxation strategies, proper scheduling, and work-life balance. Additionally, they are better equipped to recognize signs of mental health crises and understand when to seek professional help. This awareness helps reduce the prevalence of anxiety, depression, and other mental health challenges in the workplace. By promoting health literacy, organizations can enhance employee safety and improve the overall quality of work processes [13, 16].

#### *Utilizing Health Resources*

Access to and the ability to utilize health and medical resources in the workplace play a crucial role in enhancing employee safety. Employees with high health literacy can easily take advantage of health services and counseling offered by their organization. This includes access to health consultants, safety experts, and educational programs related to both mental and physical health. They also know how to access medical services outside the organization. Utilizing these resources enables employees to take timely action in case of health issues and benefit from necessary treatments. Ultimately, this leads to improved workplace safety, increased productivity, and an enhanced quality of life for employees within the organization [14].

#### *Impact on Organizational Decision-Making*

The impact of health literacy on organizational decision-making is a critical aspect that can drive overall improvements in performance. Managers who are aware of their employees' health and safety status are better equipped to make decisions that benefit both well-being and operational efficiency. By analyzing data related to incidents and injuries, managers can implement changes in workflows and processes to enhance safety. These decisions may include providing regular training, updating equipment, and improving working conditions. For this reason, health literacy is recognized as a key factor in managerial decision-making and can significantly contribute to improving the quality and safety of the work environment [16, 17].

## **DISCUSSION**

Health literacy is recognized as a key factor in workplace safety, contributing to the reduction of risks and injuries in work environments. It enables workers to understand accurate information about safety protocols, identify existing hazards, and apply effective methods for injury prevention. Additionally, health literacy empowers individuals to manage stress and mental health challenges, further enhancing overall workplace



safety. Elevated awareness and sound decision-making capabilities foster a safer work environment and help decrease the incidence of workplace accidents.

Amoadu and Damari demonstrated that psychologically unsafe work environments negatively impact mental health, leading to increased psychological distress that can compromise both employee well-being and workplace safety [11, 15]. Edgelow concluded that effective stress management interventions not only improve mental health but also reduce staff exposure to psychological trauma and enhance safety and operational performance in high-stress settings [12]. In a related study, Yamani and Milner found that health literacy boosts employees' ability to identify workplace hazards, improve awareness, and comprehend health risks—key factors in enabling preventive and management strategies [18, 20].

Carrouel, in a study, demonstrated that inadequate health literacy among government employees can lead to increased health risks, emphasizing the necessity of implementing appropriate health promotion programs in the workplace to improve understanding and prevention [21]. Therefore, hazard identification is one of the key skills that enables employees to operate more safely at work. Health literacy equips individuals to recognize risks, thereby preventing physical harm and minimizing productivity loss. Moreover, health literacy empowers employees to make informed workplace decisions by understanding health and safety information, identifying hazards, and assessing risks. With this competency, employees can accurately analyze data related to working conditions and hazards, selecting safe and effective strategies for managing risks. These abilities contribute to sound decision-making, fostering a safer and more productive work environment, ultimately reducing workplace accidents and enhancing overall organizational health [15].

Health literacy also enhances communication skills in the workplace, increases employee well-being, and improves organizational effectiveness. Effective communication fosters a supportive environment, enabling employees to better understand health-related information and participate in health promotion activities. Patak and Damari stated that enhancing health literacy fosters effective communication skills, enabling patients to better understand their care, make informed decisions, and reduce the risk of medical errors in healthcare settings [15, 22]. Forette and Mata also demonstrated that educational programs can improve

health literacy and communication skills among professionals, enhance patient interaction, and promote effective health communication in the workplace [14, 23]. Therefore, health literacy plays a significant role in enhancing communication skills in the workplace. With health literacy, employees can more effectively share information related to safety and health with one another. This skill helps them identify existing hazards and clearly articulate appropriate solutions.

Productivity in the workplace depends on security and safety; when employees feel secure, they are better able to focus on their tasks. Health literacy contributes to reducing workplace accidents and occupational illnesses, thereby minimizing employee absenteeism and increasing efficiency and productivity. Juba demonstrated in a study that integrating health literacy into workplace health programs enhances employee engagement and productivity, while strengthening a culture of safety and well-being through active participation and leadership support [24]. Hidayatulloh demonstrated in the results of his research that safety and health measures in the workplace significantly increase employee productivity, and that improving health literacy can optimize these outcomes in a safe work environment [19]. On the other hand, health literacy is an effective tool for preventing occupational diseases and enhancing the quality of work life. With increased health literacy in the workplace, not only is the health of employees maintained, but efficiency and productivity also improve. As shown in the study by Yamani, occupational health literacy empowers employees and management with knowledge about health hazards, promotes disease prevention and safety through effective communication and organizational structures in the workplace [20]. Forette found that health literacy can prevent diseases by increasing healthy lifestyle behaviors and improve workplace safety through employees' informed choices and practices [25].

Ultimately, health literacy plays a crucial role in fostering a culture of workplace safety, particularly in healthcare environments. By enhancing employees' understanding of health and safety protocols, organizations can cultivate an active safety environment that reduces incidents and improves overall performance. As Wong stated, improving health literacy is essential for establishing a culture of workplace safety, as it enhances employees' ability to understand safety protocols and engage in health-promoting behaviors [26]. Larsen and Jones also demonstrated that

improving workplace health literacy strengthens the safety culture by equipping employees and management with the essential knowledge and communication skills needed to address health challenges and prevent injuries [13, 17]. Health literacy and workplace safety help managers identify hazards and develop effective policies to improve working conditions. This leads to increased employee engagement, reduced costs, and more informed decision-making within the organization. Pirzadeh stated that effective decision-making in the construction industry is influenced by social networks and health literacy, which can enhance communication and lead to better outcomes in health and workplace safety [27]. Additionally, Hickam and Larsen demonstrated that health literacy plays a significant role in managing workforce factors and shaping working conditions, which influence worker safety and patient outcomes [17, 28].

## CONCLUSION

This narrative review highlights the critical importance and role of health literacy in workplace safety. Health literacy not only empowers employees to better understand health and safety information, but also enhances their awareness and capability to address potential hazards in the work environment. Furthermore, organizations should implement structured and effective educational programs aimed at improving employees' health literacy. It is recommended that these programs include practical workshops, multimedia educational resources, and individualized counseling to foster a safer and healthier workplace. Additionally, cultivating an organizational culture that prioritizes health literacy can significantly reduce incidents and enhance the overall quality of work life for employees.

## ACKNOWLEDGMENT

The authors would like to thank Khoy University of Medical Sciences for providing library support for this study.

## CONFLICT OF INTEREST

There are no conflicts of interest to declare.

## FUNDING

Not funding.

## REFERENCES

1. Yari A, Shobeiri SM, Rezaie M, Hamidieh A. Factors affecting health, safety and environmental risk literacy promotion model. *Int J Learn Spaces Stud*. 2023;2(3):50–62.
2. Nazem SS, Rafiepour A, Sabet M. Investigating the relationship between occupational health literacy and safety behavior of mining industry employees with the mediating role of health. 2022.
3. Che Huei L, Ya-Wen L, Chiu Ming Y, Li Chen H, Jong Yi W, Ming Hung L. Occupational health and safety hazards faced by healthcare professionals in Taiwan: a systematic review of risk factors and control strategies. *SAGE Open Med*. 2020;8:2050312120918999.
4. Zareipour M, Jadgal MS, Khazir Z, Moradi Z, Amirzehni J. Study of lifestyle and its relationship between health literacy in health ambassadors in Urmia. *J Health Lit*. 2021;6(2):33–40.
5. Zareipour M, Sadaghianifar A, Moradi Z, Jafari N, Es-mzadeh M. Health literacy and its relationship with self-efficacy in health ambassadors. *J Health Lit*. 2020;4(4):56–63.
6. Movahed E, Zareipour M, Jadgal MS, Rezaee Moradali M, Baljani E. Investigating health literacy and its relationship with the social influences of COVID-19 in police force employees. *J Health Lit*. 2024;8(4):43–52.
7. Zareipour MA, Ahmadi N, Rostampor F, Sadaghianifar A, Nemati Z, Saadati M. Investigating the health literacy of COVID-19 and its relation to self-care in health ambassadors of Urmia. *Med J Tabriz Univ Med Sci*. 2024;46(3):320–8.
8. Urstad KH, Andersen MH, Larsen MH, Borge CR, Helseth S, Wahl AK. Definitions and measurement of health literacy in health and medicine research: a systematic review. *BMJ Open*. 2022;12(2):e056294.
9. Rauscher KJ, Myers DJ. Occupational health literacy and work-related injury among US adolescents. *Int J Inj Control Saf Promot*. 2014;21(1):81–9.
10. Ehmann AT, Ög E, Rieger MA, Siegel A. Work-related health literacy: a scoping review to clarify the concept. *Int J Environ Res Public Health*. 2021;18(19):10247.
11. Amoadu M, Ansah EW, Sarfo JO. Preventing workplace mistreatment and improving workers' mental health: a scoping review of the impact of psychosocial safety climate. *BMC Psychol*. 2024;12(1):195.
12. Edgelow M, Scholefield E, McPherson M, Mehta S, Ortlieb A. A review of workplace mental health interventions and their implementation in public safety organizations. *Int Arch Occup Environ Health*. 2022;95(1):1–20.
13. Jones C, Smith-MacDonald L, Pike A, Bright K, Bremault-Phillips S. Workplace reintegration facilitator training program for mental health literacy and workplace attitudes of public safety personnel: pre-post pilot cohort study. *JMIR Form Res*. 2022;6(4):e34394.
14. Forette F, Brieu MA, Lemasson H, Salord JC, Le Pen C. Evaluation of a workplace health promotion programme. *Sante Publique*. 2014;26(4):443–51.
15. Damari B, Mirzaei H, Almadani H. Evaluation of workplace health promotion model: a communality trial study in Abyek district. 2020.
16. Güner MD, Ekmekci PE. Health literacy level of casting factory workers and its relationship with occupational health and safety training. *Workplace Health Saf*. 2019;67(9):452–60.
17. Larsen AK, Holtermann A, Mortensen OS, Punnett L, Rod MH, Jørgensen MB. Organizing workplace health literacy to reduce musculoskeletal pain and consequences. *BMC Nurs*. 2015;14:1–13.
18. Milner A, Shields M, Scovelle AJ, Sutherland G, King



- TL. Health literacy in male-dominated occupations. *Am J Mens Health*. 2020;14(5):1557988320954022.
19. Hidayatulloh F, Pasca YD. Optimisasi keselamatan dan kesehatan kerja untuk meningkatkan produktivitas tenaga kerja. *J Innov Manag Account Bus*. 2024;3(1):58–70.
  20. El Yamani N, Rundén-Pran E, Varet J, Beus M, Dusinska M, Fessard V, et al. Hazard assessment of nanomaterials using in vitro toxicity assays: guidance on potential assay interferences and mitigating actions to avoid biased results. *Nano Today*. 2024;55:102215.
  21. Carrouel F, du Sartz de Vigneulles B, Clément C, Lvovschi VE, Verot E, Tantardini V, et al. Promoting health literacy in the workplace among civil servants: cross-sectional study. *JMIR Public Health Surveill*. 2024;10:e58942.
  22. Patak L, Wilson-Stronks A, Costello J, Kleinpell RM, Henneman EA, Person C, et al. Improving patient-provider communication: a call to action. *J Nurs Adm*. 2009;39(9):372–6.
  23. Mata ÁNDS, de Azevedo KPM, Braga LP, de Medeiros GCBS, de Oliveira Segundo VH, Bezerra INM, et al. Health literacy actions: scoping review of experiences in health promotion settings. 2021;1–9.
  24. Juba OO. Impact of workplace safety, health, and wellness programs on employee engagement and productivity. *Int J Health Med Nurs Pract*. 2024;6(4):12–27.
  25. Forette F, Brieu MA, Lemasson H, Salord JC, Le Pen C. Évaluation d'un programme de promotion de la santé conduit en entreprise. *Sante Publique*. 2014;26(4):443–51.
  26. Wong BK. Building a health literate workplace. *Workplace Health Saf*. 2012;60(8):363–9.
  27. Pirzadeh P, Lingard H. Understanding the dynamics of construction decision making and the impact on work health and safety. *J Manag Eng*. 2017;33(5):05017003.
  28. Hickam DH, Severance S, Feldstein A, Ray L, Gorman P, Schuldheis S, et al. The effect of health care working conditions on patient safety. *Evid Rep Technol Assess (Summ)*. 2003;(74):1–3.