



Article

Occupational Health and Safety at Workplace: A Reflective Review of Nepal's TVET Sector

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Abstract

Ensuring occupational health and safety (OHS) is essential for maintaining a secure and healthy work environment. It encompasses multiple aspects, such as occupational health and safety-related training and awareness among the formal and informal workers, integration of hands-on practical practices in Technical and Vocational Education and Training (TVET), and proper use of occupation-wise Personal Protective Equipment (PPE) at workplace. Although it is one of the major components of decent work, Nepal still has limited access to occupational health and safety along with the use of PPE at workplace. This review paper was prepared through relevant literature review and searches on Google Scholar to access a diverse range of articles, research papers and reports. The findings reveal significant gaps in OHS awareness, training and practical implementation, particularly in the TVET sector. Despite increasing emphasis on employee skills development, workplace safety remains inadequately addressed. Insufficient infrastructures, lack of occupation-specific PPE, limited OHS hands-on practical processes in training curricula and the absence of structured monitoring systems contribute to unsafe working conditions and unprepared workers in Nepal. The study emphasizes the need to integrate practical OHS practices into TVET curricula, engage certified OHS experts, improve the quality and accessibility of PPE, and raise awareness among workers, employers and government entities. These measures, combined with an effective enforcement of safety regulations, are essential for fostering a safe work environment, enhancing workers' well-being and promoting sustainable economic growth.

Keywords: occupational health and safety, personal protective equipment, workplace safety, TVET, decent work

Introduction

Workplace safety has become a significant concern in recent years. Advancements in technology, changing work conditions and the nature of work have greatly contributed

to increasing workplace risk and complexities. These factors have increased the challenges of raising sector-specific awareness and ensuring the effective

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execution of occupational health and safety measures to potential personnel. While generating employment by providing skills is essential, it is equally important to equip workers with the necessary knowledge and information about Occupational Health and Safety (OHS) and its safety measures (protective helmets, safety gloves, safety goggles, dust mask, protective boots, ear plugs and hi-visibility jackets). OHS plays a crucial role in Technical and Vocational Education and Training (TVET) (Ronoh & Mburu, 2023).

With 10 years of experience in the TVET sector, focusing on ensuring the quality of short-term vocational skills training across various occupations, I have consistently been concerned that simply providing skills, knowledge and attitudes are insufficient for adequately preparing skilled workers. These observations raised critical questions: Why do workers neglect the PPE? What factors influence their attitude toward workplace safety? And, how can TVET programs better address these gaps? It is also essential to equip them with an understanding of workplace hazards by incorporating OHS training and its allied measures. While the primary goal of TVET is often seen as employment, it is essential to extend this goal to include employment in a safe working environment - a key dimension of decent work. If a graduate secures a job but lacks awareness of safety practices or fails to prioritize workplace safety, it cannot be considered a successful outcome. Therefore, the purpose of this paper is to review related literatures to understand

proper use of personal protective equipment and safety practices in the learning and earning environment.

During employment verification visits, I observed that trained and untrained workers rarely raised concerns about safety with their employers and were often willing to work in unsafe environments without wearing task-specific personal protective equipment (PPE). I rarely found workers wearing personal PPE, and when they did, it was often only partially worn. This raises concerns about their safety and need for better training and awareness of the significance of using PPE correctly. This also raised a critical question for me: Why do workers neglect PPE or disregard safety measures? What factors influence this behavior?

Therefore, integrating practical OHS practices is vital in the TVET sector when preparing workers through training. This approach not only enhances the employability of graduates but also ensures their safety and well-being at workplace. Addressing both aspects ensures the development of a skilled workforce and safeguards their well-being. A work-related accident refers to an unforeseen and unplanned sequence of occurrences resulting in physical harm to an individual while performing their job duties. According to the International Labour Organization (ILO, 2020), promoting safe working conditions for workers is one of the core areas of work within the Decent Work agenda.

In Nepal, vocational skills training is provided by different TVET entities. However, the absence of fundamental

knowledge and practices in occupational health and safety has contributed to ongoing workplace hazards. TVET provides the skills, education and training, whereas skills are the ability to use an individual's thoughts, ideas and creativity to do something, change it and obtain value from work. In other words, skills are the ability to translate knowledge into practice to achieve the desired work results.

Concept of Occupational Health and Safety

OHS highlights ensuring safety, health and well-being of individual workers at workplace. Worker safety has been the first priority in the developed countries. It is a discipline that deals with preventing work-related injuries and protecting and promoting workers' health. The main objective is to improve workers' working conditions and environment. OHS involves the scientific study and practical implementation of measures designed to safeguard employees' physical well-being, security and overall welfare within their work environment. It also encompasses policies, standards and practices to prevent accidents, injuries and illnesses caused by work-related hazards. OHS also promotes a healthy and conducive work environment that supports employees' physical and mental well-being, ultimately enhancing productivity and organizational success (General Federation of Nepalese Trade Union [GEFONT], 2011). Employers and training providers are legally obligated to provide a safe working and learning environment, which includes safeguarding

and enhancing the health and well-being of employees, as well as preserving the broader environment with preventive measures at workplace. Pre-preparation with task-related PPE measures is most important for the workers. According to ILO, OHS encompasses all facets of health and safety inside the workplace, aiming to avert the incidence of occupational accidents and disorders.

As mentioned above, the definition and understanding of occupational health and safety indicate its important role in ensuring decent work. It is particularly beneficial when formal workers acquire practical knowledge during their learning processes, as this empowers them to effectively advocate for their safety when they enter the workforce. Awareness and use of occupation-wise PPE among workers are very important: it helps in preventing work-related injuries, illnesses and fatalities, enhancing the ability to work in dirty, dangerous and difficult work (3Ds), ensuring worker's physical and mental well-being, producing efficient and motivated workers, reducing absenteeism due to work-related injuries or illnesses, and ensuring the OHS regulations, such as legal protections, reducing costs associated with workplace accidents, medical expenses, legal liabilities, and loss of skilled workers.

Although the importance of OHS and PPE is widely acknowledged, most existing studies focus on industrial or formal sectors in the developed countries, with limited attention to semi-skilled workers trained through

TVET programs in developing contexts like Nepal. Moreover, while TVET programs aim to enhance employability, there is insufficient evidence on how these programs incorporate practical OHS training and whether graduates are adequately prepared to prioritize workplace safety. This study addresses this gap by reviewing existing literature on OHS awareness, knowledge and proper PPE use among the formal and informal sector's workers. The findings aim to provide insights into how practical OHS measures can be effectively integrated into vocational skills development training, ensuring that graduates not only gain technical skills but also work safely and sustainably in their chosen professions.

Workplace and Availability of PPE

A workplace is a physical location where the individual learns and works for his/her employability. In the evolving work landscape, the concept of a workplace has transcended the conventional office setting. However, in the TVET sector, workplaces are utilized as learning and earning places. To maximize workplace safety, a collaborative approach involving both employers and employees is essential in creating and sustaining a secure and healthy work environment (Occupational Safety and Health Administration [OSHA], 2023). While employers bear the primary responsibility for implementing safety measures, the active participation of employees is therefore crucial for their effectiveness. PPE, as defined by OSHA, refers to a gear worn to reduce exposure to

various workplace hazards. At workplace for workers, the OSHA recommends a comprehensive set of protective items. These include: 1. Eye and face protection: Safety glasses, goggles, or face shields 2. Foot protection: Safety shoes 3. Hand protection: Gloves 4. Head protection: Hard hats 5. Hearing protection: Earplugs or earmuffs. This array of protective gear is designed to safeguard workers from potential workplace dangers and hazards in the construction industry.

PPE is used to reduce the risk of exposure to hazards that can lead to severe workplace injuries and illnesses. These risks may arise from chemical, radiological, physical, electrical, mechanical or other workplace dangers. PPE includes items, such as gloves, glasses, shoes, earplugs or earmuffs, hard hats, respirators, coveralls, vests and full-body suits (U.S. Department of Labor, 2024).

UNESCO-UNEVOC (2013) identifies the workplace as a critical component in TVET, emphasizing the role of work-based learning in developing competencies that align with the market's demand. Likewise, ILO highlights that the TVET workplace should balance skill acquisition and exposure to the occupational safety measures (ILO, 2020). It also states that the learning modalities adopting Work-based Learning (WBL), where integrating OHS measures by using PPE (protective helmets, safety gloves, safety goggles, dust mask, protective boots, ear plugs, and high-visibility jackets) and their practical knowledge are imperative to potential workers.

Decent Work with Safety and Security of Workers

A safe working place is also one of the issues of decent work, which is also the worker's right. Decent work refers to employment that respects the fundamental rights of individuals and upholds workers' rights concerning safe working conditions and fair wages. It also prioritizes the physical and mental well-being of workers in terms of the performance of their jobs. The ILO established the decent work agenda as a global initiative to advance employment opportunities, uphold workers' rights, ensure social protection, and foster social dialogue. Likewise, the TVET also plays a vital role in promoting decent work by producing workers with occupational and technical skills and equipping OHS measures with knowledge for productive employment and adaptability in the labor market. According to ILO's Decent Work Agenda 2030, more people in decent work means stronger and more inclusive economic growth.

Decent labor emphasizes the provision of productive employment for both genders within an environment defined by freedom, equality, security and human dignity. Essential ideas associated with these objectives include unemployment, work-life equilibrium, professional advancement, employee engagement and remuneration frameworks. The core elements of decent work consist of employment opportunities, social protection, workers' rights and social dialogue. All of these components are directly related to workers' welfare and

protection. Likewise, the OHS is ultimately an issue related to workers' welfare, so integrating OHS into their learning and work environments is essential.

Literature Review

Accidents tend to happen at workplace due to improper use of PPE and stubbornness in refusing to wear PPE (Hasim & May, 2018). Therefore, raising awareness among workers and employees is critical to encourage them to use the appropriate PPE measures, including protective helmets, safety gloves, safety goggles, dust masks, protective boots, ear plugs and high-visibility jackets. Moreover, there are several ways to encourage awareness among the workers and employees, including practical training on using the PPE, selection of the proper PPE based on the given relevant task and maintenance of PPE. Occupational health and safety imply the condition in which employees are safeguarded against physical, mental, emotional or pain-related challenges stemming from their work environment (Saputra & Mahaputra, 2022). The field of OSH is concerned with preventing, detecting, evaluating and controlling workplace risks that might endanger employees' health and well-being as well as have an impact on the environment and surrounding communities (GEFONT, 2011).

The National Living Standard Report 2022/23 reveals significant changes in the labor market. The proportion of employment in agriculture is declining gradually (from 70.7 percent in 1995/96

to 1.9 percent in 2022/23). It indicates the position of employment in other sectors is progressively increasing (9.5 percent in 1995/96 to 56.6 percent in 2022/23) where integration of OHS in technical education is slow off the marks. According to ILO estimates, 160 million people globally suffer from work-related illnesses each year, and over 250 million workers are involved in occupational accidents. Of them, accidents and occupational illnesses claim the lives of almost 1.2 million workers annually (ILO, 2001). This highlights that OHS is a critical issue closely connected to workers' rights. Most Nepalese workers are involved in the informal and formal sectors and are still unaware of the importance of OHS and safety measures (GEFONT, 2011).

According to the skills testing report of CTEVT (2022/23), a total of 25% of graduates have completed their skills level in different occupations every year. They all are prepared to start work at workplaces, either in domestic or foreign markets. Workers' exposure to occupational safety and health risks, subpar living and working circumstances, restricted access to social protections including healthcare services, and forced overtime labor are all linked to their health risks (Labour Migration Report, 2022). According to the Labor Migration Report 2022, in Nepal, every year, more than 500,000 workers receive labor permits for foreign employment. The Foreign Employment Board also reported that significant funds have been channeled to disabled workers who suffered injuries during foreign employment.

A study report on the current state of Occupational Safety and Health in Nepal (2011) highlights that the absence of proper monitoring and policies makes it challenging to establish effective mechanisms to enforce health and safety measures, particularly those related to the appropriate use of specific PPEs in practice. Integrating practical OHS applications into vocational training is still a relatively new concept in Nepal and has not yet been prioritized by all TVET stakeholders. It has started to talk only in industries. However, it is important to other sectors, such as training institutes and skills testing centers, and still needs to be justified. Curricula have a small space regarding OHS, which is limited in the theory. Graduates must understand safe workplaces, including occupation-related PPE, after completing skills training. High-risk jobs for health and safety include those requiring machinery and equipment, electrical work, construction, transportation, the use of chemicals, dusty conditions and crowded or dimly lighted areas (Upadhyay, 2002). Although the kind and degree of risks may differ between the two categories, it is crucial to understand that OHS concerns are not only important for blue-collar workers but also for white-collar professionals (GEFONT, 2011). Sector-wise, occupational health and safety training has significant positive outcomes for workers (International Society for the Study of Work & Organizational Values [ISSWOV], 2018). Without understanding the real-world application of OHS and its measures in skills training, material and methodologies may be restricted and impact transferred to

the workplace. Thus, safety rule training is merely one of many steps to reduce risk and foster a preventative culture. Skills training without OHS knowledge and practice may lack depth and limit transfer to actual work contexts. Thus, safety regulation training reduces hazards and promotes preventive practices.

Occupational Health and Safety in Nepal

The National Education Policy, 2019, of Nepal has made significant provisions for TVET, with a focus on increasing access, affordability and quality of technical education. The aim of this policy is to create a workforce with the necessary skills to propel the country's economic development. Likewise, the National Occupational Safety and Health Policy, 2020 emphasizes that effectively managing occupational health and safety enhances worker productivity and impacts positively the overall social and economic development of employees.

The Sixteenth Plan (2024/25 - 2028/29) also embeds the OHS, TVET, social protection, and decent work within an integrated employment and human development agenda, especially in its chapters on productive employment and social security and human capital. The OHS is framed under dignified work and safe workplaces through commitments to eliminate forced and hazardous child worker, strengthen workers inspection, and integrate occupational risk prevention with health and social security systems. TVET is positioned as a core driver of productivity and sectoral competitiveness

and a central pillar of human capital. Similarly, TVET expansion, social protection reform, and decent work-oriented growth are expected to operate together to reduce poverty and inequality to support Nepal's economic growth. To promote safe and healthy work environments, the Government of Nepal has enacted the National Occupational Safety and Health Policy, 2020, and has also developed specific OHS guidelines for workers in the brick industry.

The TVET Sector Strategic Plan (TSSP) 2023-2032 highlights that the areas of Quality and Relevance encompass accreditation, instructional management, curricula, and the availability of laboratory facilities, including machines, tools and equipment. However, the plan does not address the inclusion of Occupational Health and Safety measures, nor does it consider their availability and practical application during the skills training processes.

The Labor Act of 2017 outlines regulations regarding OHS for workers in Nepal. The Act mandates that each workplace must create a Safety and Health Policy, which must be registered at the appropriate labor offices. It also establishes provisions for the formation of various OHS-related committees. Under this Act, employers are held responsible and accountable for their obligations to workers. They are required to provide essential notices, information and training related to safety and health. Additionally, employees and workers share responsibility for maintaining safety and health at workplace. This includes refraining from engaging in

activities that could endanger the safety and health of others, cooperating with employers to ensure the effective implementation of health and safety measures, and using personal safety equipment provided by the employer.

After multiparty democracy was established in 1990, Nepal government started to prioritize the health and safety of its employees (Adhikari & Maskay, 2004). To encourage safe, healthy and effective working conditions, the Ministry of Labor and Employment started "The Occupation Safety and Health Project" in 1996. This project carried out a number of continuing OHS initiatives, such as training sessions, awareness campaigns, monitoring activities, interventions and cooperation with pertinent parties. The OHS at workplace was ensured by strategic goals and ambitions defined in the Three-Year Interim Plan (2007/08-2009/10). Establishing industry standards and conducting routine company monitoring were important elements of this strategy. The strategy placed a strong emphasis on the creation of initiatives aimed at increasing awareness, offering training and orientation, improving education and capacity building, and carrying out inspections, monitoring and assessments for different stakeholders. In order to promote a safe, healthy and effective workplace, the policy plan was also revised. Promoting and expanding occupational health and safety were considered as essential components of organizations and workplaces.

When it comes to public health challenges, infrastructure, health concerns and workplace safety are important factors (Prajapati et al., 2023). In order to protect people's safety, health and well-being, OHS is a multidisciplinary discipline (Junevičius & Gelžinytė, 2009).

Decent Work Theory

TVET is an integral aspect of lifelong learning and training that begins at various educational institutions and levels. TVET comprises four key components: technical, vocational, educational, and practical training (Owais et al., 2020). Hence, TVET requires effective training and practical experience. Integrating safety measures and practical applications into these programs enhances productivity and the sustainability of individuals' employment. Furthermore, reviewing theories related to worker welfare and employment, such as the Decent Work theory, is relevant to this topic and highlights the importance of workers' safe working and learning environment and sustainable economic growth.

Decent work is also a place where a living wage is paid with the necessary social protection; human rights are protected; equality of opportunity is ensured; and human dignity is respected (Ghai, 2003). The ILO views decent work as a basic human right and a means to improve working conditions. Consequently, decent work emphasizes four key strategies: fundamental rights associated with employment, labor conditions, social security, social protection and social dialogue.

The Psychology of Working Theory (PWT) defines the concept of decent work and assesses it through five dimensions: (a) physical and relational safety, (b) access to healthcare services, (c) fair compensation, (d) leisure and rest time, and (e) alignment of corporate values with family and social values (Blustein et al., 2016). PWT theory suggests that decent work can be achieved when these components are maintained together. According to PWT, decent work is a key component of employed life, which is also a critical aspect of mental health and a significant predictor of worker's well-being. As a result, employees need better working conditions and environment. Furthermore, a good work has a significant connection with wellness and work performance, which has significant implications for both individual and organizational outcomes.

Additionally, a decent work highlights workplace social courage (WSC). According to Namal et al. (2024), the willingness of people to speak up and handle difficult issues at workplace as in case of bullying or harassment in spite of possible negative outcomes is known as WSC. It has been increasingly acknowledged as vital to a healthy work environment and it also fosters a positive workplace culture, which is a critical factor in job satisfaction. According to Ghai (2003), everyone has to have access to "quality of work", which refers to decent labor. It further incorporates social protection, workers' rights, employment and social dialogue, and high-quality work. These are the main elements of decent work.

Employment opportunities, social security and protection and workers' fundamental rights are some of the features that define decent workers.

In 2019, the United Nations (UN) documented a decent work in the sustainable development goals (SDGs) in recognition to its importance. The elements mentioned above all pertain to the welfare of workers. Social security offers protection against unforeseen events, which is a crucial component of occupational health and safety for workers. Generally, two metrics are used to assess social security's sufficiency: the ratio of public spending on social security to GDP and the level of workers' coverage with regard to emergencies. Security accounts for some 20 to 30 percent of GDP in many wealthy countries.

According to Blustein et al. (2016), from psychological perspective of decent work, precarious work affects worker's mental and physical health. Precarious work refers to uncertain and insecure employment and cannot support the household. Here, uncertain and unprotected types of jobs cannot satisfy workers. According to a different definition, precarious work is generally understood to be a multifaceted concept with four main components: income, protection (including access to benefits and legal protections), vulnerability (such as helplessness or a lack of bargaining power or the ability to assert workplace rights), and continuity or employment insecurity.

In the developing countries like Nepal, precarious work still exists in the labor market. Likewise, psychological health is a consequence of unhealthy working conditions. It shows that workers suffer psychological effects if the workplace is not maintained in a healthy environment. People are finding it more difficult to maintain their feeling of security, health and well-being at work as a result of the rise in unsafe employment. It follows the safe, secure, purposeful, dignified, and in line with the best aspects of the human spirit as the characteristics of decent labor. The World Health Organization (WHO) describes well-being as a condition where each person recognizes his/her own potential, can handle the usual stresses of life, works productively and effectively, and is capable of contributing to their community.

Social policies and labor markets both influence employment circumstances. Employees' physical and emotional well-being is correlated with steady and secure employment. Adopting a widely recognized definition of decent work - one that is equitable, respectable, stable and safe - can direct future research, legislative efforts and viable remedies for the growing labor issue. According to ILO, decent work is creating, strengthening and extending worker protections, such as labor and social security, that are adapted to the cultural contexts of particular societies and promoting employment through sustainable institutional and economic frameworks. Along with protecting, advancing, and achieving the

essential rights that define a respectable and fair workplace, it also entails fostering social discourse via intentional exchanges between governments, labor unions and companies. All workers who want a steady, respectable and safe job in the labor market must provide high-quality work. Without decent employment, workers sometimes have little agency and meager negotiating power, which makes it challenging to oppose oppressive and exploitative working circumstances. They have few alternatives in this position and face the danger of suffering serious repercussions that they will not be able to find employment to support themselves.

The impacts of workplace precarity have not been shown to be mitigated by employees who have greater access to healthcare benefits, a healthy work environment, steady employment and workplace assistance. As a consequence, the psychological, physical, emotional, and behavioral health of employees and their families is greatly impacted by elements including child labor, dangerous working circumstances and prior unstable or low-paying employment. Similarly, OHS is related to a healthy work environment, which leads to increased dedication to work, performance and decent work. Decent work contributes to a higher level of work satisfaction among the workers. Workers who experience job dissatisfaction are more likely to inefficiency and turnover. Additionally, the workplace condition directly impacts the employees, which is critical to work performance. In this case, there will be an increase at workplace

health and safety issues, ultimately leading to employees leaving the organization, increasing the workplace hazard cases, such as accident, fatalities cases, stress, anxiety, physical and mental related diseases and so on. This ultimately causes higher cost and decreases the value and reputation of the organization. The workplace consists of physical, social and psychological factors. The psychological factors include the worker's inner needs and external influences. Among many psychological factors, workplace social courage is defined as the willingness of employees to speak up and question employers or relevant entities when they perceive something is wrong. Studies show that social courage is related to proactive activities enhancing workplace conditions. However, the role of social courage at workplace has not been preferred by employers in the labor market.

Methodology

This study adopted a qualitative approach and conducted a literature review as the primary methodological strategy, including desk reviews and analysis of secondary data to achieve the set objective. The main objective of this study is to assess workers' awareness and use of occupational health and safety measures at workplace. This approach was considered appropriate for synthesizing existing knowledge and identifying research gaps related to OHS in the TVET sector of Nepal.

In the qualitative approach, literature review analysis plays a significant role in shaping

the overall research design, particularly in studies that examine workers' awareness and utilization of OHS measures in vocational training environments. Given that OHS practices in TVET institutions are contextual, experiential and interpretive, a comprehensive review of relevant literature was essential for ensuring conceptual clarity, methodological alignment and analytical depth.

According to Creswell and Poth (2018), engagement with existing literature in qualitative inquiry helps in situating the study within broader academic and policy debates, thereby strengthening its theoretical grounding beyond mere description. The literature review also supported the justification and alignment of the chosen methodology. A critical examination of previous qualitative studies on workplace safety, including those using document analysis, thematic analysis, case studies and interviews strengthened the suitability of combining a qualitative literature review with thematic analysis for this study.

Furthermore, the literature review was instrumental in identifying contextual research gaps in Nepal's TVET sector. While substantial global research exists on OHS, there remains a limited qualitative evidence on how instructors, trainees and training institutions in Nepal perceive and implement safety measures. Synthesizing existing studies enabled this research to clearly describe what is already known, what remains underexplored, and why further investigation is necessary (Marshall & Rossman, 2016).

Google Scholar has been used as the primary database to conduct an extensive search of relevant literature. The review focused primarily on recent publications, prioritizing peer-reviewed articles published within the last twelve years to ensure current relevance and empirical accuracy. Occupational health and safety, Personal protective equipment, Workplace safety, TVET and Decent work are key words selected to capture both global and context-specific literature related to OHS practices in vocational training settings. From the initial collection of identified studies, a total of 32 national and international research articles were systematically selected based on their direct relevance to the research objective: assessing workers' awareness and use of occupational health and safety measures in the workplace settings, particularly within TVET sector.

Major Findings

Nepal's workplace safety is vulnerable, with insufficient infrastructure for OHS in both working and learning environments. The literature review revealed some key points on OHS vulnerabilities in Nepal's workplaces and TVET settings:

Inadequate OHS Infrastructure and PPE Availability

Occupation-specific PPE is inadequate, including protective helmets, safety gloves, safety goggles, dust masks, protective boots, earplugs, and high-visibility jackets. Technical training centers rarely engage certified OHS experts to oversee and

implement safety measures in learning and earning workplace.

Knowledge and Awareness Gaps

Workers lack knowledge, training and awareness of occupational and task-related OHS, hindering their ability to work in safe environments and advocate for PPE. Women are particularly vulnerable in both formal and informal sectors. Proper use of PPE measures is not consistently recommended by employees/workers and employers. Graduates often enter the workforce unprepared to handle job-related risks, especially in the construction, manufacturing and mechanical sectors. After completing skills development training programs, graduates often lack the confidence and knowledge to advocate for safety measures in dangerous, dirty and difficult (3Ds) work environments. Many workers dislike or misuse PPE due to a lack of awareness and knowledge. Hence, there is a general lack of seriousness regarding workplace hazard-related issues among workers, employers and the government.

Curriculum and Policy Deficiencies in TVET

Occupation specific OHS topic along with PPE are not clearly mentioned in the course curriculums. There is insufficient research on workplace accidents and fatality rates. OHS is often considered a low priority by practitioners in TVET sector. Most educational institutions, particularly those offering technical and vocational training, do not integrate OHS practices into the

curriculum. Nepal's education policy lacks a structured monitoring system to ensure the implementation of practical safety measures during the learning process, especially in TVET settings. Additionally, there is no structured curriculum for teaching OHS practices in TVET institutions.

Low Prioritization and Misuse of Safety Measures

OHS is deprioritized by workers, employers, TVET practitioners and government bodies. Workers often dislike or misuse PPE due to unawareness; few workers partially use PPE at workplace, but most of the equipment provided is of low quality. The Department of Labour and Occupational Safety under the Ministry of Labour, Employment and Social Security does not effectively work on OHS and related training for workers or ensure their safety.

Limited Research and Data

There are insufficient studies on workplace accidents, fatality rates and gender-specific risks, hindering targeted interventions. This gap extends to gender-specific risks, with no strong data on how women in formal and informal sectors face disproportionate vulnerabilities, such as workplace linked hazards or inadequate PPE fit. Few national databases track incident rates, causes or long-term health impacts. Technical training centers and the Department of Labour and Occupational Safety conduct minimal research, leaving policymakers without evidence for interventions. Consequently, targeted strategies, for instance, sector-

specific PPE standards or women-focused training remain underdeveloped.

Discussion

These findings highlight a critical gap in Nepal's workplace safety and occupational health approach. The lack of adequate infrastructure, insufficient availability of PPE, and limited knowledge and training on OHS contribute to hazardous working environments across various sectors. Owais et al. (2020) emphasize that effective TVET requires a combination of theoretical instruction and practical experiences. Integrating OHS measures and practical training into TVET curricula is essential for preparing workers to navigate workplace risks safely.

The absence of a structured monitoring system within education policies, particularly in TVET settings, increases the problem. Consequently, the graduates enter the workforce without the necessary skills and knowledge to identify workplace hazards or advocate for their safety. The situation is particularly alarming in high-risk sectors, such as construction, manufacturing and mechanical industries, where workers often remain unprepared to handle occupational risks or demand proper safety measures.

The concept of decent work, as defined by the ILO, views workplace safety and the proper use of PPE as fundamental rights and key aspects of improving working conditions. Additionally, the theory of decent work emphasizes the importance of workplace

social courage. Namal et al. (2024) describe social courage as the willingness of individuals to address challenging workplace situations, such as unsafe practices, harassment or bullying, even in the face of potential negative effects. However, the lack of certified OHS experts in technical training centers further hinders workers' ability to prepare adequately for real-world workplace hazards. Acquiring knowledge and skills related to OHS improves workers' competence and empowers them to advocate for their safety and prioritize their well-being.

Ghai (2003) also pointed out the importance of quality work for all. Their framework for decent work highlights critical dimensions, such as employment, social security and protection, workers' basic rights and social dialogue. Within this framework, social security and protection explicitly address workers' safety concerns, whether in formal or informal employment. However, practical implementation of these measures remains a significant challenge before Nepal's labor market, particularly for vulnerable groups, such as women. Gender-specific approaches to workplace safety and OHS training are urgently needed to address the unique risks faced by women in both formal and informal sectors.

Precarious work, often characterized by insecurity, lack of protection and uncertainty, profoundly affects workers' mental and physical health. Blustein et al. (2016) explain that such employment conditions fail to provide satisfaction or stability, leading to

heightened stress and dissatisfaction. Unsafe working environments further amplify these issues, contributing to poor mental health and low motivation among workers.

The role of Department of Labour and Occupational Safety in providing OHS training and enforcing safety regulations is paramount. Comprehensive policies, stricter enforcement of safety standards and enhanced workplace inspections are critical to improving worker safety.

These challenges align with my own professional experiences. It is essential to ensure that workers are employed and equipped with the skills, knowledge and attitudes necessary to prioritize safety and encourage a motivated and productive workforce. Employment that focuses on workplace safety can significantly contribute to the preparation of empowered workers who are confident in their abilities, satisfied in their roles, and capable of thriving in a competitive job market.

Conclusion

This qualitative literature review demonstrates that OHS remain a critical yet inadequately addressed issue in Nepal's workplaces, particularly in the TVET sector. Although OHS is internationally recognized as a fundamental component of decent work, its practical integration into Nepal's skills development system and workplace practices is still weak and fragmented. The review highlights persistent gaps in workers' awareness, access to occupation-specific

PPE, hands-on OHS training and institutional commitment to workplace safety.

The findings suggest that many TVET graduates enter the labor market without sufficient knowledge, confidence or practical experience to identify workplace hazards, properly use PPE or advocate for their safety especially in Dirty, Dangerous and Difficult (3Ds) work. This situation is further worsened by the weak enforcement of labor regulations, limited involvement of certified OHS experts in training institutions, inadequate monitoring mechanisms and insufficient research on workplace accidents and occupational risks particularly those affecting women and informal sector workers.

From a decent work perspective, unsafe working conditions undermine workers' physical, psychological and social well-being, restricting their ability to engage in productive, dignified and sustainable employment. The Psychology of Working Theory further supports that the absence of physical and relational safety, health protection and secure working environments contribute to precarious work, stress and reduced job satisfaction. Therefore, improving OHS is not only a matter of compliance but a fundamental strategy for enhancing worker well-being, productivity and economic development in Nepal.

To address these challenges, this study highlights the need for systematic integration of practical OHS training into all TVET curricula, including occupation-specific risk assessments and mandatory PPE usage; engagement of certified OHS

professionals in technical training centers and skills testing facilities; improved quality, availability and standardization of PPE, especially for high-risk sectors, such as construction, manufacturing, and mechanical trades; strengthened policy implementation and workplace inspections by the Department of Labour and Occupational Safety; and the development of a national database on workplace accidents, injuries and fatalities to inform evidence-based interventions.

Ultimately, skills development in Nepal must move beyond employability and prioritize safe employability. A TVET system that embeds OHS as a core competency will better prepare workers for real workplace conditions, reduce occupational risks and contribute to achieving decent work, social justice and sustainable economic growth. Future research should incorporate empirical field studies, including interviews with workers, trainers and employers to deepen understanding of behavioral, institutional and cultural factors influencing OHS practices in Nepal.

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