Assessment of the requirements of occupational health and safety management system according to the international standard ISO45001: 2018 A study in (Al-Zahra Teaching Hospital in Wasit)

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Abstract: The study aims to Assessment, implement and analyze the gap between the actual reality of the occupational health and safety system in (Al-Zahraa Teaching Hospital in Wasit) in comparison with the requirements of the international standard for occupational health and safety management system (ISO 45001:2018). For the purpose of accessing scientific facts, a case study approach was followed, which includes observation, verification, field visits to the study site and face-to-face meetings. The approved checklist was also used in the study prepared by the International Organization for Standardization (ISO), and the number of questions was (95) distributed among (6) lists representing the number of main and subsidiary requirements. As for the means of statistical analysis, the weighted mean and the percentage of application were used. And documentation to express the extent of the difference and conformity with the requirements of the specification. The results of the study show that there are large gaps between the actual reality in (Al-Zahraa Teaching Hospital in Wasit) and the requirements of the occupational health and safety management system in accordance with (ISO 45001:2018) for the requirements of the main standard, which are as follows: The context of the organization (72%); Leadership (43.3%); Planning (48.34%); The process (74.73%); Performance evaluation (60%); Improvement (48.34%).

Keywords: health management; occupational safety; occupational health and safety (OHS); occupational health and safety management system (OHSMS); international standard (ISO 45001:2018).

Introduction: Workers face many of the risks that can be caused by exposure to uncomfortable chemical, biological and psychological substances (Hofmann et al., 2017:378). Thus, most organizations still use safety performance measures based on injury, accident, and fatality rates (So & Rho, 2017:403; Erdogan et al., 2018:68). As a result of poor safety performance indicators in organizations, the impact of these metrics can be seen in the form of various direct costs. Be in the form of damage to work

equipment, medical and health bills, and related fees (Namian et al., 2016:3). In cases of poor safety performance measures in organizations, spillovers can accumulate, through increases in insurance costs, increased staff turnover and production losses, and other related costs. (Battaglia et al., 2014:355). Achieving safety in the workplace is a team effort because the individual worker who acts irresponsibly harms himself and others, and employers are responsible for ensuring the health and safety of workers in the workplace. And because safety is always the top priority, employees must always take this responsibility seriously, by creating a safe and healthy work environment. (Jespersen & Hasle, 2017:229) The results of the study, conducted by the Institute of (OSH), showed that there is a positive relationship between senior management and improving occupational health and safety and that the participation of all employees can create a good work environment.

One study conducted by the (International Labor Organization - ILO) with a population of 374 million workers, indicates that due to factors of human error, structural defects, management practices, and poor safety systems in the workplace, the current global statistics indicate that 2.78 million deaths annually. Of the 7,500 people who die daily, 6,500 die from work-related illnesses, and 1,000 die from work-related injuries. (ILO: 2017:1-3). The economic costs of injuries, accidents and deaths in the workplace are worrying, and there is concern about addressing safety issues in the workplace, this is indicated by the results of global statistics. (Takala and Young 2014) indicated that the economic costs of safety range from 1.8% to 6.0% of countries' GDP. Although identifying many potential effects of poor health and safety performance, a set of measures must be taken to reduce these risks, avoid increasing the volume of events caused by poor safety performance and emphasize the need to improve the work environment and related safety procedures in organizations. (Fernández et al., 2017:405). Occupational health and safety (OHS) activity began to emerge in the context of the development of the concept of sustainable health and safety, and the culture of safety, developed into new cultural concepts of preventive safety, that requires great effort from managers at all levels to implement regulations and safety standards to mitigate risks associated with participatory management of (OHS). New (OHS), regulatory practices place greater emphasis on employee health and quality of life, extensive prevention of all known hazards and application of precautions when identifying new or unknown hazards or identified hazards (Bernatik et al., 2017:8; Bayram et al., 2017:287-288).

ISO 45001 (OHSMS) Drafting work began in 2013 and ended in 2018, the result of a 5-year effort to approve the issuance of the standard by the International Organization for Standardization (ISO).Occupational health and safety practitioners, trainers, consultants and researchers have begun an intense discussion about the new ISO standard, While debate continues over the appropriate implementation of the standard, the research and advisory community points out that this is a real opportunity for ISO 45001 to play an important role in addressing pressing global (OHS), issues regarding the impact of standards on the global supply chain, and how voluntary standards such as ISO 45001 will

play an important role in organizations. (Fisher, 2016:12-14). The aim of the study is to provide a comprehensive approach where it indicates the key elements of the successful implementation of an (OHSMS), which relies on ISO 45001 in safety culture and more, the study provides a discussion on the implications of the ISO 45001 implementation framework for management systems dealing with health and safety Occupational health, by the following: First, the research contributes to providing the theoretical basis for this topic related to occupational health and safety for organizations. Second, the actual reality of the hospital will be assessed based on providing some practical considerations for the implementation of ISO 45001. Third, the non-conformance gap will be diagnosed based on the information collected by a survey developed with the support of some managers from different organizations working in the health sector in Iraq regarding the implementation of the OHSMS), international standard (ISO 45001:2018)

.**Research Methodology**

Problem of Research: The work environment is the main determinant of organizational outcomes, which affect performance indicators for the health and safety of employees. Therefore, measuring the implementation of the requirements of the (OHSMS), in accordance with the international standard ISO 45001 in its first version of 2018, in response to the environmental variables and factors facing business organizations, is a case worthy of research and analysis in Iraqi organizations in general, and the study sample in particular, in order to improve its strategic performance. The problem of the research is that the research sample did not keep pace with the modern international programs on the (OHSMS). As a result, the current research problem with its intellectual and field dimensions is formed in raising the following questions:

1- Is there an (OHSMS), in (the research sample), based on the requirements of the international standard ISO 45001:2018 issued by the International Standardization Organization (ISO), with regard to occupational health and safety?
2- Is there a clear and specific concept of the principles, program and activities of the (OHSMS), in accordance with the requirements of the international standard ISO 45001:2018, then concepts, guidelines, and applications that can be followed in raising the level of health performance and improving the actual reality of the management system, and occupational health and safety in (the research sample)?
3- What are the appropriate procedures and mechanisms that can be followed in (the research sample) for the purpose of applying the recent trends (ISO) versions of the (OHSMS), in accordance (ISO 45001:2018)?

Research Objective: The research seeks to achieve the following objectives:

1- Determining the non-application gap of the (OHSMS), by evaluating and analyzing the actual reality in (the research sample), diagnosing areas of weakness and proposing treatment, and identifying potential areas of improvement in comparison with the (ISO 45001:2018).

2- Indicating the importance of applying the (OHSMS), in accordance with the (ISO 45001:2018), and helping and encouraging (the research sample), to identify the main procedures for continuous improvement of the work environment.

3- Helping decision makers to work on developing and supporting a culture of (OHSMS), and workers in (research sample), and providing scientific guidance for the purpose of implementing the requirements of the (OHSMS), (ISO 45001:2018), and supporting the application of these modern systems in organizations Iraqi.

Importance of the research: The current study attempts to contribute to each of the following:

1- The importance of research in studying and addressing important issues for society in general and for the health sector in particular, which is an attempt to link the actual reality of the (OHSMS), in the research sample, with the requirements (ISO 45001:2018).

2- Attempting to assist the study sample management in determining the qualifications of knowledge and skills appropriate for the application of the (OHSMS), in accordance with the requirements ISO 45001:2018.

3- The research represents an essential step for the purpose of qualifying (Al-Zahraa Teaching Hospital in Wasit), in the future for evaluation and auditing from accredited international external bodies, for the purpose of registration to grant a certificate of conformity for the occupational health and safety management system in accordance with the requirements of the international standard (ISO 45001:2018).

Practical data and information sources:

1- Personal interviews with a number of department and division managers and some employees in the research sample.

2- Examining a set of official documents and records in the research sample.

3- Field visits in the research sample. As well as some field visits to laboratories and administrative departments.

4- To achieve the goal of the research, the researcher designed a set of Gap Analysis Checklists for the requirements of the (OHSMS), based on the (ISO 45001:2018), to assess the level of application and diagnose the non-conformity gap with the actual reality of the (OHSMS), in a sample The study, and the evaluation examination lists amounted to (6) lists and included (95) questions distributed on (6) main and basic sub-requirements, which were arranged as : The context of the organization (5) requirements; Leadership (22) requirements; Planning (24) requirements; The process (22) requirements; Performance evaluation (10) requirements; Improvement (12) requirements).

Statistical data analysis tools: For the purpose of obtaining greater accuracy in data analysis, the answers of the assessment checklists have been converted into quantitative expressions, by using the five-point Likert scale, and Table (1) shows those paragraphs and their weights ranging from no formal approach (there is no formal approach) A systematic approach and weak and unpredictable results or results) with a weight of (1) degree, and the highest degree of qualitative performance (the improvement process is integrated and achieves the best standard results) with a weight of (5) degrees, in order to reveal the reality of the mismatch gap between the actual reality in the research sample, And the requirements of the (OHSMS),according to the international standard (ISO 45001:2018).

Table (1) Elements and Weights of the Five Likert Scale for Performance Maturity Levels

Maturity levels weights	Performance Levels Elements	Elements of a maturity guide
1	There is no official curriculum	There is no systematic approach and poor or unpredictable results or outcomes
2	There is an interactive approach	There is a systemic approach based on the emergence of problems, or corrective actions, and there is little data related to the results of improvement.
3	Existence of a formal system	There is a systematic, process-based approach, regular corrections, and data consistent with goals and directions for improvement
4	There is an approach that emphasizes improvement	The improvement process is in place and there are positive results and continuous trends towards improvement
5	The highest quality performance	The improvement process is integrated and achieves the best standard results

Sources: ISO 9004:2000, "Quality Management System-Guidelines for Performance Improvement", Second Edition, ISO Copyright Office, Geneva, pp 47.

Adopt quantitative expressions for the answers contained in the assessment checklists using the following equations and ratios:

First: - Calculating the approximate rate of performance maturity levels for the (OHSMS), in the research sample by using the Weight Arithmetic Mean for each calendar checklist according to the following equation: - (Grela, 2013:1222).

❖ *Weighted arithmetic mean for each calendar checklist* $= \frac{\sum weights * frequency}{\sum frequency}$

❖ *Percentage (%) for each assessment checklist* $= \frac{\sum weights * frequency}{\sum total\ frequency * highest\ on\ the\ scale}$

Theoretical framework for research

Theoretical basis of ISO 45001:2018

The new International Standard ISO 45001, is an important step for defining a unique occupational health and safety management system by integrating other management systems, such as ISO 9000 Quality Management System and ISO 14000 Environmental Management System. ISO 45001 has been developed based on the famous British Standard BS OHSAS 18001 which Many organizations follow him in Europe. The prerequisites in the new standard have been significantly changed in BS OHSAS 18001 by consideration of (OHS), issues and workers' participation in leadership, being aligned with the requirements of European legislation such as the OHS Framework Directive 1989/391/EEC (Paula Nicoleta Neag: 2020). The International Standard reflects the same requirements and uses the same management system structure as set out in the International Labor Organization (ILO) requirements for occupational health and safety regulations. Given this compatibility, ISO 45001:2018 should build on all the successes of OHSAS 18001. It is planned that in 2021, OHSAS 18001 will be withdrawn leaving ISO 45001 the primary international standard for (OHSMS), potentially integrating it with management system standards for quality and environment and other specifications. [ISO (E)14001: 2018:9-10]. The main difference between ISO 45001 and the ILO Guidelines on OHSMS, or most other standards, is that employers cannot obtain certification that they are in compliance. There are already national standards in Europe, in the field of industries and have their own labor laws, (such as machinery standards). Employers must ensure that they follow the requirements of all national laws, collective agreements and all regulations issued under them. As a result, ISO 45001 is a supplementary standard that an employer may use to attempt to raise standards. (ILO: 2001:4-6).

ISO 45001 is based on PDCA (Plan-Do-Check-Act cycle defined by Deming in 1950) which is commonly used in many management systems and treats health and safety management as an integral part of overall good management. The proposed operational principles and requirements of ISO 45001 can be implemented directly in the workplace to support a management system, which consists of processes to meet its requirements, including risk management, resource provision, performance measurement, analysis and improvement. ISO 45001 certification is much easier if the organization has an existing ISO management system (such as ISO 9001 Quality Management System or ISO 14001 Environmental Management System), because some of the processes involved in these standards will help in proper and correct application, and for To better understand the new occupational health and safety context for management system development and implementation, the chapters of the ISO 45001 standard are summarized with some important notes, for the purpose of the present research, only a few paragraphs or chapters

were presented that were the subject of some questions in the empirical research. (Neag et al., 2020:2-3).

Performance appraisal of the health and safety management system

The International Standard (ISO 45001: 2018) is a guideline for the implementation of (OHSMS), in organizations. Performance appraisal is an essential component of ensuring continuous and effective improvement of the health and safety management system. Audits (performance appraisals) should be beneficial to organizations and auditors because they give them opportunities to learn good practices for implementing the system. It contributes to the organization of a good audit process by a competent auditor or audit team, and the health and safety management system helps employers and auditors to better understand their roles. An audit is a comprehensive review and analysis of the key performance indicators of an organization's health and safety management (Asbury, 2018: 212-214). The Repolho & Coelho (2020) study indicated that an OHSMS audit of an organization leads to a range of findings, including: (Repolho & Coelho, 2020:822-823).

1- Follow the methodological methods in analyzing the activities within the organization and developing them continuously.
2- Determining the work sectors that contain risk factors.
3- Defining legislation and laws, and diagnosing negative and positive cases, related to the organizational process.
4- Assessing the extent of conformity with international standards, and ascertaining areas of development in their application.

Performance appraisal procedures should be improved as an important part of the OHSMS, of an organization. (Ostasz et al., 2017:246-247). The performance evaluation of the occupational health and safety system is affected by the type of actions taken and the targeted results, so it is preferred to follow an effective approach to performance evaluation (Cashman, 2019:288). Although the performance of OHSAS in some organizations is applied in some organizations at a high level, there are some weaknesses and threats that affect its efficiency. It was also found that some performance indicators are insufficient to evaluate the effectiveness of the system, which indicates the importance of the audit method for evaluating the effectiveness of OHSAS. Because it is a useful tool to improve the level of a good application. (Hosny et al., 2017:188-189). In order to ensure effective planning, organization and control of health risk management, performance appraisal is a review of the activities and processes conducted in the past, and is not an activity to discover errors, but rather an approach and method that contributes to the improvement of OHSAS, as well as the discovery of areas for improvement. The performance appraisal is a tool for examining the managerial actions that an organization must take in the field of occupational health and safety. (Shelmerdine & Williams, 2003:130-131). It requires the evaluation of good performance of health and safety management, this requires the development of a methodology that takes into account the risks facing the health and safety system in the organization. (Jespersen & Hasle,

2017:228-229). Health and safety performance assessment is traditionally conducted by an external team auditing all safety activities and procedures in the organization. Performance appraisal is a management tool that measures the overall operational effectiveness of a health and safety department. Performance appraisal contributes to assessing the current level of risk reduction and loss prevention and then helps in preparing an action plan to improve health and safety inputs. (McKinnon, 2020:23) Safety performance evaluations are an essential part of successful business, and effective evaluation of health and safety performance provides an approach to continuous safety improvement, in addition to the legal framework for compliance with approved standards. (Rospa, 2013:168).

Work environment:

The work environment includes a set of personal, social, physical and psychological characteristics of employees. (Bergström et al., 2015:224Work environment refers to a set of important strategic aspects of the work and management of the work system and how the interaction with employees in the workplace and the creation of appropriate conditions. (Searcy et al., 2016:2908). The work environment has been observed to have a very strong influence on organizational outcomes, for example, safety, and management's commitment to safety and security performance, to the researcher's knowledge, is not available. This is the first look and the aim of this study is to be an original contribution to the body of knowledge in the field of safety research. Several previous studies contain empirical evidence for the role that management practices can play in enhancing the safety performance of their subordinates. This study provides a theoretical framework to provide an explanation of the relationship between safety management practices and workplace safety performance among Iraqi hospital employees, rather than simply measuring outcomes such as accidents and mortality rates. . As some researchers have noted, a stable work environment increases job satisfaction, improves the quality of care, and reduces harm to workers in the work environment. (Porter et al., 2016:69-70; Zúñiga et al., 2015:861-862). The management of organizations should be responsible for ensuring stable work environments so that their employees can work safely. Because there are usually several factors associated with a poor work environment. Organizational factors also influence the characteristics of the work environment. Therefore, safety training and managerial commitment to safety (an organizational motivating factor) should have an impact on work environments, which in turn should influence safety performance indicators for employees. However, in the course of this study, the work environment will be examined on the basis of organizational characteristics inherent in Healthcare facilities that should improve safety performance outcomes.

Practical data analysis

This part of the research deals with deals with measuring, analyzing and evaluating the performance of the actual reality of the implementation and documentation process of the OHSMS,in the research sample (Al-Zahraa Teaching Hospital in Wasit), in comparison with the international standard ISO 45001:2018, By using the checklist in the

analysis of the gaps (Gap Analysis) They will be answered through actual observations and personal interviews with workers and those responsible for implementing the OHSMS,in the research sample. The main reasons for the non-conformity gap will also be clarified, and how to put treatments to reduce it, and for the purpose of ensuring the accuracy of the information, the five-point scale shown in Table (1) was used according to the weights from (1: There is no formal approach), which is the lowest weight in the scale to weight (5: the highest degree of qualitative performance) which is the highest weight in the scale. The sequence of the main requirements and their sub-requirements will be maintained as stated in the international standard ISO 45001:2018, starting with requirement No. (4: The context of the organization) and as follows:

4- The context of the organization: (sometimes called the organization's business environment) includes a set of factors that pertain to (OHS) challenges within the organization, and determine the relevant internal and external environment, and the risks inherent in the work of the organization, so the context of the organization affects in a way Senior in the design and implementation of an (OHSMS).

The development, implementation and improvement of the occupational health and safety management system requires that the senior management in (Al-Zahraa Teaching Hospital in Wasit) is committed to distinguishing all aspects related to (OHS) according to the requirements mentioned in the checklist table (2).

Table (2) Checklist for requirements the context of the organization according ISO 45001:2018

No	4. The context of the organization	The extent of conformity with the levels of performance evaluation				
4.1: Understand the organization and its context						
a-	(The hospital / research sample) identifies external and internal problems related to its objectives and strategic directions.			✓		
4.2: Understand the needs and expectations of employees and other stakeholders						
A	The hospital determines the needs and expectations of the interested parties in addition to the workers who are related to the occupational health and safety management system in accordance with the requirements ISO 45001:2018	✓				
4.3 : Defining the scope of the occupational health and safety management system						
A	The hospital defines the capabilities required to implement the ISO 45001:2018 occupational health and safety management system	✓				

B	The hospital monitors and reviews information regarding the needs and expectations of the parties involved.	✔				
4.4: Occupational Health and Safety Management System						
A	The occupational health and safety management system is applied and documented in the hospital in accordance with requirements ISO 45001:2018.	✔				
Weights		**1**	**2**	**3**	**4**	**5**
frequencies		**4**	**0**	**1**	**0**	**0**
Total (weight x number of frequencies)		**4**	**0**	**3**	**0**	**0**
weighted arithmetic mean		**1.4**				
Percentage (%) to fulfill the requirements		**28%**				
Gap size for requirement		**72%**				

The checklist, Table (2), shows the extent of conformity with the levels of performance maturity in the study sample, in comparison with the requirements of the context of the organization according to the international standard ISO 45001:2018, as it recorded an average of (1.4) degrees out of (5), with a matching percentage of (28%), which shows the existence of a large non-conformity gap of (72%) due to the weak level of implementation and actual documentation, due to each of the following:

1- Positive cases of conformity with the requirements the context of the organization including:

    a. The existence of an official systematic system, in (Al-Zahraa Teaching Hospital in Wasit), showing the implementation process and partial documentation to identify external and internal problems related to its objectives and strategic directions.

2- Cases of non-conformity with the requirements the context of the organization including:

    a. The re is no formal approach, showing the limits, possibility and mechanism of monitoring the implementation and documentation of the occupational health and safety management system in the research sample according to the requirements of the international standard (ISO 45001: 2018).

    b. There is no formal approach, to monitor and review information regarding the needs and expectations of the stakeholders.

    c. There is no official approach, which shows that the process of implementation and documentation of the occupational health and safety management system in the research sample is carried out in accordance with the (ISO 45001: 2018).

    5 - Leadership and worker participation: The successful implementation of the occupational health and safety management system is based on the commitment of all

employees in the hospital, as roles and responsibilities are not limited to occupational health and safety functions, but also include other areas in the hospital, such as managing operational processes and non-health functions. Commitment starts from the highest levels in Wasit Health Department and is translated into practice In setting the health policy, supporting its implementation and providing the necessary resources for it, it also requires the senior management to show direct participation of the workers, and to stress that the responsibility for implementing this system in the factory lies with all workers to participate and submit proposals, so the implementation of the system depends on leadership and commitment, by defining the health policy Occupational safety, organizational roles, responsibilities and authorities, and employee participation in accordance with the requirements shown in the checklist Table (3).

Table (3) Checklist for requirements leadership and employee participation according ISO 45001:2018

No	5 - Leadership	The extent of conformity with the levels of performance evaluation				
5.1: Leadership and Commitment						
a-	The hospital administration is responsible for preventing work-related diseases and injuries.					✔
b-	The hospital's occupational health and safety policy and objectives are set in line with the strategic direction.	✔				
c-	The hospital provides the necessary and necessary resources to implement the occupational health and safety management system ISO 45001:2018	✔				
d-	The hospital administration is concerned with complying with the requirements of the OHSMS, in accordance with the requirements ISO 45001:2018	✔				
e-	The hospital administration seeks to guide and support employees to contribute to the effective implementation of the occupational health and safety management system.	✔				
f-	The hospital administration supports other administrative roles related to their areas of responsibility.					✔
g-	The hospital administration is concerned with developing, leading and strengthening the	✔				

	organizational culture that supports the implementation of the OHSMS.					
h-	The hospital administration works to provide the required protection for workers when reporting accidents and risks.					✓
i-	The hospital seeks to create a committee for (OHS), and supports its work.	✓				
5.2: Occupational Health and Safety Policy						
A	The hospital management ensures the commitment to provide healthy and safe conditions for workers to prevent work-related injuries and poor health.				✓	
b-	The hospital provides a program for setting and defining occupational health and safety objectives.	✓				
c-	The hospital administration confirms the commitment to fulfill the legal and other requirements					✓
d-	The hospital administration is committed to reducing risks and trying to eliminate them with regard to the occupational health and safety of employees.					✓
e-	The hospital management ensures commitment to continuous improvement and development of the work of OHSMS.	✓				
f-	The hospital administration seeks to commit itself to the participation and consultation of employees in the implementation of occupational safety activities.				✓	
g-	Occupational health and safety management system is available and documented information is available for workers in (hospital / research sample).	✓				
5.3: Organizational roles, responsibilities and authorities						
A	The hospital's senior management ensures that responsibilities and authorities relevant to key roles within the (OHSMS), are defined.	✓				

| B | The hospital staff is responsible for the aspects related to the implementation of the (OHSMS). | | ✓ | | | |

5.4: Participation of employees

A	The hospital provides the necessary resources in terms of equipment, time and training programs for the participation of employees in the implementation of the (OHSMS).					✓
b-	The hospital management seeks to develop an integrated plan to achieve the objectives of (OHS).		✓			
c-	The hospital administration determines the necessary measures necessary to eliminate and reduce (OHS), risks.		✓			
d-	The hospital administration determines the necessary measures for the control process and its effective implementation.				✓	

Weights	1	2	3	4	5
frequencies	10	3	0	3	6
Total (weight x number of frequencies)	10	6	0	12	30

weighted arithmetic mean	2.6
Percentage (%) to fulfill the requirements	52.7%
Gap size for requirement	47.3%

The checklist table (3) shows the extent of conformity with the levels of performance maturity in the research sample, in comparison with the requirements of leadership and employee participation in accordance with the international standard ISO 45001:2018, as it recorded an average of (2.6) degrees out of (5) , with a conformity rate of 52.7%, which shows that there is a medium non-conformity gap of (47.3%) due to the average level of application and actual documentation, due to each of the following:

1- Positive cases of conformity with the requirements Leadership and worker participation including:
    a. The hospital bears full responsibility for the prevention of work-related diseases and injuries, and a commitment to reduce risks and try to eliminate them with regard to the occupational health and safety of workers.
    b. The hospital supports the administrative roles related to their areas of responsibility, providing the required protection for workers when reporting

accidents and risks, and providing the necessary resources in terms of equipment, time and training programs to participate in the implementation of the occupational health and safety management system.

c. The hospital ensures compliance with legal and other requirements, and determines the necessary measures for the control process and its effective implementation.

2- Cases of non-conformity with the requirements Leadership and worker participation including:

a. Not documenting occupational health and safety policy and objectives, and not placing them as available and documented information for workers, in line with the strategic direction of the (hospital).

b. Limited resources necessary and necessary for the application, with a lack of interest in the Hospital administration, regarding compliance with the requirements of the (OHSMS).in accordance ISO 45001:2018.

c. Weakness of the direction of the hospital's senior management to develop, lead, and enhance the supportive organizational culture, to direct workers to contribute to the effective implementation of the requirements of ISO 45001:2018.

d. The absence of a special section for (OHS), and the work being limited to a limited number of committees, as well as the failure to specify the responsibilities and authorities related to the main roles with in the (OHSMS).

e. Weak commitment to continuous improvement and development, with a weak program related to setting and defining occupational health and safety goals in (hospital / research sample).

6- Planning: The hospital is required to identify occupational health and safety the management system and opportunities and risks, based on a proactive process to identify risks (to anticipate conditions that could lead to accidents, without achieving continuous improvement), and when identifying risks, it must take into account how the work is done, not how it should It is necessary to learn from previous The management system must include all risks to anyone who has access to the workplace, all workers, including the public at the workplace, and be aware of potential emergencies and accidents. The risk assessment process must be defined and implemented, in accordance with the requirements shown in Table Check List (4)**.**

Table (4) Checklist for requirements planning according ISO 45001:2018

No	6 - planning	The extent of conformity with the levels of performance evaluation				
6.1: Actions to Address Risks and Opportunities						
6.1.1: General						
a-	The hospital undertakes that its occupational health and safety management system is achieving	✓				

	its intended results.						
b-	The hospital seeks to reduce or prevent undesirable effects in the workplace.					✓	
c-	The hospital implements and achieves continuous improvement.					✓	
d-	The hospital identifies risks related to (OHS) and risks to others.						✓
e-	The hospital has its own planning system, which contributes to identifying and evaluating the opportunities and risks related to the occupational health and safety system, as well as the expected changes, whether temporary or permanent, before they occur.	✓					
f-	The hospital maintains documented information about risks and opportunities and takes corrective actions to reduce the risks of their occurrence.	✓					
6 .1.2.1.: Identification of Risks							
a-	The hospital provides the necessary infrastructure, materials, equipment and physical conditions of the workplace.						✓
b-	Improving the occupational health and safety management system in the hospital is carried out in accordance ISO 45001:2018	✓					
c-	Maintains detailed records of past internal or external incidents related to the hospital.	✓					
d-	The hospital designs work areas, including processes, operating procedures, machinery and equipment, and work organization, adapted to the needs and capabilities of the personnel.					✓	
e-	Determining the cases that occur in the workplace surroundings due to work-related activities, and are under the control of the hospital.	✓					
f-	Identification of cases that the hospital does not control, that occur in the workplace, and that may cause injury and poor health of workers.						✓

6.1.2.2.: Occupational Health and Safety Risk Assessment						
a-	The hospital assesses (OHS) risks, taking into account the effectiveness of current controls and instructions.	✔				
b-	Identify and assess other risks related to the development, implementation, operation and maintenance of the hospital's (OHSMS)..	✔				
c-	The hospital defines methodologies and regulatory standards for assessing occupational health and safety risks relevant to its scope, nature and timing.	✔				
d-	The hospital maintains documented information on methodologies and standards relevant to occupational health and safety assessment.					✔
6.1.2.3: Occupational Health and Safety Opportunities Assessment						
a-	The hospital develops, implements and maintains assessments of (OHS)opportunities as well as taking into account planned changes in the hospital.	✔				
6.1.3: Determining legal and other requirements						
a-	The hospital determines the legal requirements and other requirements that apply to occupational health and safety risks, with the possibility of reviewing these requirements by the senior management	✔				
b-	The hospital takes legal and other requirements when developing, implementing and maintaining an occupational health and safety management system on an ongoing basis.	✔				
c-	The hospital maintains information related to legal and other requirements of the occupational health and safety management system.					✔
6.1.4: Planning Procedure						
a-	The hospital has procedures in place to handle risks, prepare for and respond to emergencies.					✔

b-	The hospital follows the hierarchy of administrative controls and instructions, when planning to take appropriate measures to implement the (OHSMS)..	✔				
c-	The hospital follows the practices, technological options, financial and operational requirements and work requirements when planning its business.				✔	
6.2.1: Occupational health and safety objectives and planning to achieve them						
a-	The hospital takes into account the requirements currently in force, the results of the previous risk assessment, the opportunities and threats and the results of consultation with the representatives of the employees, for the purpose of implementing the (OHSMS).			✔		
Weights		**1**	**2**	**3**	**4**	**5**
frequencies		**13**	**0**	**1**	**4**	**6**
Total (weight x number of frequencies)		**13**	**0**	**3**	**16**	**30**
weighted arithmetic mean		**2.58**				
Percentage (%) to fulfill the requirements		**51.66%**				
Gap size for requirement		**48.34%**				

The checklist shows Table (4), the extent of conformity with the levels of performance maturity in (hospital / research sample), in comparison with the planning requirements according to the international standard ISO 45001:2018, as it recorded an average of (2.58) degrees out of (5), with a percentage of A conformity of (51.66%), which shows the existence of a medium non-conformity gap of (48.34%) due to the average level of application and actual documentation, due to each of the following:

1- Positive cases of conformity with the requirements Planning including:

    a. The hospital implements and achieves continuous improvement, while providing the necessary infrastructure, materials, equipment and physical conditions of the workplace.

    b. The hospital designs work areas, including operations, operating procedures, machinery, equipment, and work organization, to be adapted to the needs and capabilities of employees.

    c. Identification of cases that the hospital does not control, that occur in the workplace, and that may cause injury and poor health of workers. And seek to

reduce or prevent undesirable effects within the workplace, as well as identifying risks related to (OHS), and other risks.

d. The hospital maintains documented information on methodologies and standards related to legal and other requirements of the (OHSMS).

2- Cases of non-conformity with the requirements Planning including:

a. The hospital does not have its own planning system, which contributes to identifying and evaluating the opportunities and risks related to the occupational health and safety system, as well as the expected changes, whether temporary or permanent, before they occur.

b. The hospital does not keep detailed records and documented risk information for past internal or external accidents and opportunities to reduce the risks of their occurrence and take corrective actions.

c. Improving (OHS)in the hospital is not in accordance ISO 45001:2018.

d. Poor assessment of (OHS), risks, with failure to identify and assess other risks related to the development, implementation, operation and maintenance of the hospital's (OHSMS).

e. The hospital does not specify methodologies and regulatory standards, to assess occupational health and safety risks related to its scope, nature and timing. As well as not identifying cases that occur in the vicinity of the workplace due to work-related activities.

7-Operation: The hospital is required to apply the requirements of the international standard (ISO 45001:2018) to control and control emergency and unplanned changes that occur on operations, and should identify actual or potential negative cases, eliminate risks, take corrective measures to mitigate them, prepare and respond to cases Emergency and its assessment, by a set of requirements shown in the checklist in Table (5).

Table (5) Checklist for requirements operation according ISO 45001:2018

No	7 - Operation	The extent of conformity with the levels of performance evaluation				
7.1.1: General						
a-	The hospital sets the necessary standards for planning and implementing the processes necessary to implement the requirements of the occupational health and safety management system.		✔			
b-	The hospital applies special standards in the control processes to implement the requirements of the occupational health and safety management	✔				

		1	2	3	4	5
	system.					
c-	The hospital establishes and documents the necessary procedures for cases and deviations from the occupational health and safety policy and objectives.			✓		
d-	The hospital works in coordination with other organizations, regarding the exchange of experiences related to the (OHSMS), with other organizations.	✓				
e-	The hospital puts in place the necessary measures to reduce or eliminate risks that affect occupational health and safety.			✓		
7.1.2:: Elimination of risks and reduction of occupational health and safety risks.						
a-	The hospital sets the necessary standards to eliminate the risks that occur due to operations, equipment or materials, by replacing them with less dangerous ones.	✓				
b-	The hospital replaces operations, treatments, equipment, and materials with less dangerous ones.	✓				
c-	The hospital uses reorganization of work and engineering control, to reduce or eliminate risks related to (OHS).					✓
d-	The hospital uses the necessary personal protective equipment to ensure the occupational safety and health of all employees.					✓
7.1.3: Change Management						
a-	The hospital follows up, implements and monitors changes, whether permanent or temporary, that affect performance, at work sites and surrounding areas.		✓			
b-	The hospital monitors, saves and monitors, permanent and temporary changes in working conditions that affect performance.		✓			
c-	The hospital tracks, implements and monitors temporary and permanent changes in workforce,					✓

		1	2	3	4	5
	machinery, equipment and legal requirements that affect performance.					
d-	The hospital tracks, implements and monitors changes in technological developments and knowledge that affect the performance efficiency of its employees.				✓	
7.1.4: Purchases						
a-	The hospital is keen to purchase products and services that comply with requirements(OHSMS).				✓	
b-	The hospital confirms its purchasing needs from organizations that follow and apply international standards related to (OHSMS).			✓		
c-	The functions and external processes and the degree of control over their application are determined according to the (OHSMS), in the hospital.	✓				
7.2: Emergency Preparedness and Response						
a-	The hospital has a quick response to emergencies with the ability to provide the necessary first aid.	✓				
b-	The hospital has specialized training programs on rapid response to emergencies.					✓
c-	The hospital has a clear definition of all possible emergency cases.					✓
d-	The hospital has specialized training programs on dealing with actual emergency situations, and works to prevent or reduce negative aspects of (OHS)for all employees.					✓
e-	The hospital takes into account the needs of the concerned authorities, when planning to respond to emergency situations.	✓				
f-	The hospital monitors the emergency preparedness procedures and the extent of response to them, periodically or after the occurrence of actual emergencies.			✓		
Weights		1	2	3	4	5

frequencies	7	3	4	2	6
Total (weight x number of frequencies)	7	6	12	8	30
weighted arithmetic mean	2.86				
Percentage (%) to fulfill the requirements	57.27%				
Gap size for requirement	42.73%				

The checklist shows Table (5), the extent of conformity with the levels of performance maturity in (the research sample), in comparison with the requirements of the process according to the international standard ISO 45001:2018, as it recorded an average of (2.86) degrees out of (5), with a matching percentage of (57.27%), which shows that there is a non-conformity gap of (42.73%) due to the average level of actual application and documentation, due to each of the following:

1- Positive cases of conformity with the requirements operation including:
   a. The hospital has a division for occupational health and safety, and it develops training programs with specialized curricula, and the training topics included (informing workers about the causes of accidents, how to avoid them, and modern scientific methods for preventing accidents at work).
   b. The hospital uses work reorganization and engineering control, to reduce or eliminate risks related to (OHS), as well as uses the necessary personal protective equipment to ensure occupational and health safety for all workers.
   c. The hospital follows up, implements and monitors temporary and permanent changes in the workforce, machinery, equipment and legal requirements that affect performance, and has a clear definition of all potential emergency cases.
   d. The hospital has specialized training programs on the speed of response to emergencies, and sets plans for confronting actual emergency situations, and works to prevent or reduce negative aspects of (OHS), for all employees.

2- Cases of non-conformity with the requirements operation including:
   a. The hospital does not set the necessary standards for planning and implementing control operations to implement the requirements of the occupational health and safety management system.
   b. Weak coordination with other organizations, regarding the exchange of experiences related to the (OHSMS), with other organizations.
   c. The hospital does not set the necessary standards to eliminate the risks that occur due to operations, equipment or materials, and does not replace operations, treatments, equipment and materials with less dangerous ones.
   d. The functions and external processes and the degree of control over their application are not specified, according to the hospital's (OHSMS).
   e. The hospital does not have a quick response to emergencies, and does not take into account the needs of the concerned authorities when planning to respond to emergencies, with the weak possibility of providing the necessary first aid.

8- Performance evaluation: The performance evaluation activity is the effective means to ensure the compliance of the hospital's work in accordance with the specific and approved program of the (OHSMS). Therefore, the hospital must establish documented procedures to monitor and measure the factors affecting its activities and operations, which are linked to basic effects on occupational health and safety, and record information. Its own to follow up and evaluate operational performance and the degree of implementation of its health and professional policy, goals and objectives, and to take preventive or corrective measures. Monitoring and measuring devices should be calibrated, and to ensure the accuracy of their results before use, and to set regular periodic periods for calibration when used, and a specific standard for calibration should be used according to National or international specifications. The standard specification (ISO 45001: 2018) defines the performance evaluation requirement in order to develop, implement, review, maintain and improve the (OHSMS)by means of a set of requirements shown in the audit checklist Table (6).

Table (6) Checklist for requirements performance evaluation according ISO 45001:2018

No	8 - Performance evaluation	The extent of conformity with the levels of performance evaluation				
8.1.1: General						
a-	The hospital is committed to developing and maintaining monitoring, analysis and measurement procedures, at regular intervals, to evaluate the performance of the (OHSMS).	✔				
b-	The hospital continuously monitors, uses and maintains monitoring and measuring equipment, and it is calibrated or verified at regular intervals.	✔				
c-	The hospital records data and results of monitoring and measurement in an integrated manner, for the purpose of facilitating the process of developing corrective and subsequent preventive measures.	✔				
d-	The hospital sets the necessary procedures for maintaining calibration equipment to achieve the required accuracy, to monitor and measure the performance of the (OHSMS).	✔				
8.1.2: Compliance assessment.						

a-	The hospital maintains the necessary records for the activities and results of calibration devices and their maintenance, in accordance with the prevailing requirements in the health sector.	✔				
b-	The hospital establishes, implements and maintains processes for reporting the performance of the (OHSMS), to senior management on an ongoing basis.					✔
8.2.1: General						
a-	The hospital maintains internal audits at regular intervals to provide information related to the application of the (OHSMS), in the hospital in line with the requirements of the international standard ISO 45001:2018.	✔				
8.2.2: internal audit program						
a-	The hospital takes the necessary measures to address cases of non-conformity, and work to improve the efficiency and effectiveness of the audit programs for the (OHSMS).				✔	
b-	The hospital keeps documented information and audit results, as evidence of the implementation of the audit programs for the (OHSMS).				✔	
8.3: management review						
a-	The hospital's senior management reviewing the (OHSMS), according to planned time periods, to ensure its continuity, suitability, efficiency and effectiveness, in comparison with ISO 45001:2018	✔				
Weights		1	2	3	4	5
frequencies		7	0	0	2	1
Total (weight x number of frequencies)		7	0	0	8	5
weighted arithmetic mean		2				
Percentage (%) to fulfill the requirements		40%				
Gap size for requirement		60%				

The checklist shows Table (6), the extent of conformity with the levels of performance maturity in (hospital / research sample), in comparison with the performance evaluation requirements according to the international standard ISO 45001:2018, as it recorded an average of (2) degrees out of (5), And with a conformity rate of (40%), which shows that there is more than an average gap of non-conformity of (60%) due to the poor level of implementation and actual documentation, due to each of the following:

1- Positive cases of conformity with the requirements performance evaluation including:

    a. The hospital establishes, implements and maintains processes for reporting on the performance of the (OHSMS), on an ongoing basis to senior management.

    b. The hospital takes the necessary measures to address cases of non-conformity, and work to improve the efficiency and effectiveness of the audit programs for the (OHSMS).

    c. The audit department in the hospital keeps the documented information and audit results, as evidence of the implementation of the audit programs for the (OHSMS).

2- Cases of non-conformity with the requirements performance evaluation including:

    a. The hospital is not committed to setting and maintaining monitoring, analysis and measurement procedures, and the lack of necessary procedures for maintaining calibration equipment on regular intervals, to evaluate the performance of the (OHSMS).

    b. The hospital does not record data and results of monitoring and measurement in an integrated manner, for the purpose of facilitating the process of developing corrective and subsequent preventive measures.

    c. The hospital does not keep the records necessary for the activities and results of calibration and maintenance equipment, according to the requirements prevailing in the health sector.

    d. The hospital does not maintain internal audits at regular intervals to provide information related to the application of the (OHSMS) in the hospital in line with the requirements of the international standard ISO 45001:2018.

    e. The hospital's senior management does not review the (OHSMS), according to planned time periods to ensure its continuity, suitability, efficiency and effectiveness, in comparison with the ISO 45001:2018.

9- Improvement: There is a need for the organization to strive to improve its performance and to retain documented information showing that it is doing so. They should promote worker participation in this and inform them of the results of continuous improvement. To obtain certification, an organization must do more than comply with the law and demonstrate that it is constantly improving its occupational health and safety management system and performance. However, details of how this works are somewhat vague. What is important is how this is measured in the audits carried out by the audit team within the organization, as well as the workers and their representatives should emphasize the need for continuous improvement of management and ensure their full

compliance with all relevant requirements. By a set of requirements shown in the checklist in Table (7).

Table (7) Checklist for requirements improvement according ISO 45001:2018

No	9 - improvement	The extent of conformity with the levels of performance evaluation				
9.1: General						
a-	The hospital maintains the identification and implementation of the necessary procedures, and the selection of improvement opportunities, to achieve the positive results of the occupational health and safety management system.	✓				
9.2: Accidents, non-conformities and corrective actions						
a-	The hospital works to respond to the treatment of accidents or cases of non-conformity in a timely manner, by taking the necessary measures to control and correct it.				✓	
b-	The hospital takes appropriate corrective measures to eliminate the main causes of the accident or non-conformity, for the purpose of ensuring that it does not recur.					✓
c-	The hospital reviews the assessment of current and other occupational health and safety risks as needed and periodically.					✓
d-	The hospital identifies and implements the required corrective actions according to the hierarchy of management controls.				✓	
e-	The hospital reviews the corrective measures and any action taken, when there is a deviation in performance.	✓				
f-	The hospital takes corrective actions that are commensurate with the possible cases of accidents or non-conformities.				✓	
9.3: Continuous improvement						
a-	The hospital seeks to improve the performance of occupational health and safety through training			✓		

	and awareness.					
b-	The hospital seeks to enhance the organizational culture that supports the (OHSMS),.	✔				
c-	The hospital works to encourage the active participation of employees in implementing the necessary measures for the continuous improvement of the (OHSMS),.	✔				
d-	The hospital shares the results of its continuous improvement work with staff representatives.	✔				
e-	The hospital maintains documented information and uses it as evidence of continuous improvement.	✔				
Weights		1	2	3	4	5
frequencies		6	0	1	3	2
Total (weight x number of frequencies)		6	0	3	12	10
weighted arithmetic mean		2.58				
Percentage (%) to fulfill the requirements		51.66%				
Gap size for requirement		48.34%				

The checklist shows Table (7), the extent of conformity with the levels of performance maturity in (hospital / research sample), in comparison with the requirements for improvement according to the international standard ISO 45001:2018, as it recorded an average of (2.58) degrees out of (5), with a percentage of A conformity of (51.66%), which shows the existence of a medium non-conformity gap of (48.34%) due to the average level of application and actual documentation, due to each of the following:

1- Positive cases of conformity with the requirements improvement including:
   a. The hospital owns a group of specialized divisions in the field of (OHS), such as, (Safety Division, Fire Division, and Medicine Division) which work to respond in a timely manner to confront accidents and dangers, by taking the necessary measures to control and correct it.
   b. The hospital responds to the treatment of accidents or cases of non-conformity in a timely manner, by taking the necessary measures to control and correct it.
   c. The hospital takes appropriate corrective measures to eliminate the main causes of the accident or non-conformity, in order to ensure that it does not recur.
   d. The hospital reviews the assessment of current and other occupational health and safety risks as needed and periodically.

    e. The hospital identifies and implements the required corrective actions according to the hierarchy of management controls.

2- Cases of non-conformity with the requirements improvement including:

    a. The hospital does not maintain the identification and implementation of the necessary procedures, and the selection of improvement opportunities, to achieve the positive results of the (OHSMS).

    b. The hospital does not review corrective measures and any action taken when there is a deviation in performance, and documented information is not preserved and used as evidence of continuous improvement.

    c. The hospital does not share the results of the continuous improvement process with employee representatives, and does not encourage the active participation of employees in implementing the necessary procedures for continuous improvement of the (OHSMS).

Conclusions

1- Not documenting occupational health and safety policy and objectives, and not placing them as available and documented information for workers, in line with the strategic direction of the (hospital).

2- The absence of a special section for (OHS), and the work being limited to a limited number of committees, as well as the failure to specify the responsibilities and authorities related to the main roles within the (OHSMS).

3- Weak commitment to continuous improvement and development, with weak programs related to setting and defining occupational health and safety objectives in (hospital/research sample).

4- The hospital does not keep detailed records and documented information on the risks of past internal or external accidents and the opportunities necessary to reduce the risks of their occurrence and take corrective actions.

5- The hospital does not specify methodologies and regulatory standards to assess occupational health and safety risks related to its scope, nature and timing. As well as not identifying cases that occur in the workplace surroundings due to work-related activities.

6- The training programs in the hospital are not compatible with the intellectual and cultural abilities and skills of the workers at their different levels.

7- The hospital does not have an integrated database to document the necessary information required for the effective and efficient application of the requirements of the (OHSMS), ISO 45001:2018.

8- The hospital is not obligated to establish and maintain monitoring, analysis and measurement procedures, and the lack of necessary procedures for maintaining calibration equipment at regular intervals, to evaluate the performance of the (OHSMS).

9- The hospital does not maintain internal audits at regular intervals to provide information related to the application of the (OHSMS), in the hospital in line with the requirements of the international standard ISO 45001:2018.

10- The hospital's senior management does not review the (OHSMS), according to planned time periods, to ensure its continuity, suitability, efficiency and effectiveness, in comparison with the ISO 45001:2018.

Recommendations

1- Documenting the occupational health and safety policy and objectives and ratifying them from the Ministry of Health and communicating them to all working individuals and encouraging them to adhere to them, with the health policy must include all of the organization's mission, goals, objectives and programmes, continuous improvement, and response to environmental laws and legislation.

2- The senior management should support the hospital's (OHS) policy and objectives, by clarifying the contents and basic principles of the (OHSMS), in accordance with the international standard (ISO 45001:2018), by issuing an internal bulletin, illustrations and wall posters.

3- Allocating and documenting responsibilities for achieving goals and objectives for each activity and for each organizational level, with the hospital's health program including a set of goals and objectives that include reducing waste and depleting resources, and reducing or preventing the release of pollutants, in a way that works to reduce their health and environmental impact.

4- Setting a special budget for building the Department of Occupational Health and Safety Department and equipping it with modern laboratories and equipment, while developing the current organizational structures, especially buildings, laboratories, and communication lines.

5- Cooperation between the Training Division and the Studies Division, in partnership with universities and specialized staff, in designing specialized training programs in the Department of (OHSMS), in order to explain the contents of the occupational health and safety management system in accordance with the international standard ISO 45001:2018)).

6- Designing an interconnected internal communication system whereby the general manager is linked with department managers and working individuals, in order to follow up the workflow and try to discover health problems before they occur, take preventive and corrective measures in this regard, and submit reports to higher management on the effects associated with them.

7- Adopting an integrated external communication system whereby the hospital is linked with the concerned external parties in order to inform them of the results of performance verifications for occupational health and safety, and try to communicate and coordinate with international and regional organizations on the latest developments related to the health field.

8- Develop an integrated work guide that organizes the documentation of the (OHSMS), in accordance with the international standard ISO 45001:2018)), and identifies the documents related to it in an appropriate manner for each department, job or activity.

9- Develop an emergency plan to achieve a full and effective response to emergency situations and accidents and try to reduce the damages resulting from them, while ensuring mutual cooperation with neighboring organizations within the geographical area of the hospital site.

10- Management review inputs should include the results of previous internal audits, assessment of compliance with legal and other requirements, external stakeholders' communications including their complaints and the current status of corrective and preventive actions taken, in accordance with ISO 45001:2018).

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