

Usability evaluation of web-based training tools under WHO Family of International Classifications (WHO-FIC)

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ABSTRACT

Introduction: Various training methods such as web-based training tools have been developed to achieve the potential benefits of classification systems developed by the World Health Organization (WHO). Given that users of these tools have different levels of capability, usability problems could reduce the speed and accuracy of learning among users interacting with these tools. This study aims to identify usability problems of web-based training tools under the WHO family of international classifications (WHO-FIC).

Material and Methods: In this descriptive and cross-sectional study, ten trained evaluators independently examined WHO-FIC training tools using the heuristic evaluation method. The identified problems were classified into 10 Nielsen's usability heuristics. Then, their average severity was calculated.

Results: In total, 40 usability problems were identified after merging and eliminating the duplicates. The highest number of problems was related to ICD-10 training tool (n=20). The highest number of problems was related to heuristics of aesthetic and minimalist design (25.0%), and user control and freedom (17.5%). Heuristics of flexibility and efficiency of use and helping users recognize, diagnose and recover from errors had the highest average severity of problems.

Conclusion: Violating heuristics of aesthetic and minimalist design, user control and freedom and recognition rather than recall were among the most common problems of WHO-FIC training tools. Evaluators reported that half of the user interface problems of WHO-FIC training tools were of major and catastrophe type. Solving the usability problems of these tools could lead to ease of work, increased speed of learning and acceptance of these systems among users.

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INTRODUCTION

Data are collected and recorded in healthcare organizations for a variety of purposes including providing health statistics and reports, delivering high-quality services to patients, educating researchers, providing health insurance and refunds as well as decision making and care planning at different national and international levels [1-4]. Various classification systems have been developed by some organizations such as WHO in order to standardize and organize medical data, facilitate retrieval of such data and use them optimally [1, 5].

WHO-FIC includes classifications that have been endorsed by WHO to describe various aspects of health and health system in a consistent manner [6-8]. Overall, WHO-FIC intends to provide a conceptual framework for health data domains and management. More specifically, it provides a common language that improves communication and allows data to be compared between countries and different domains of health care. WHO-FIC includes three broad groups: Reference classifications, derived classifications and related classifications manner [6-8].

Reference classifications include main parameters of

the health system such as death and disease (international classification of diseases and health-related problems (ICD)), disability, functions and health (international classification of functioning, disability and health (ICF)) and health interventions (international classification of health intervention (ICHI)) [6-8]. Derived classifications are often designed to be used nationally/internationally or for a specific specialty. Related classifications are included in the WHO-FIC to describe important aspects of health or health system that have not been covered by reference or derived classifications [7, 8].

Teaching coding and how to work with it are of particular importance for achieving the potential benefits of classification systems. Coding is the process, through which healthcare providers, whether physicians or health data management experts, carefully review patients' medical records and use classification systems such as WHO-FIC to convert textual expressions related to problems, diseases, diagnoses and procedures into numeric-character codes [9]. Accordingly, appropriate web-based training tools have been developed for some of these classification systems. Web-based training tools with their various features such as quick access to scientific content, content sharing, storing large amounts of information, diversity, attractiveness and modernity can provide a variety of applications for their users. Moreover, these tools allow users to access and manage educational content online at any time and place, and provide mock exams [10-12].

Numerous factors could influence users' behavior and willingness to apply these training tools for learning coding systems, one of which is usability of these tools [13-16].

Usability is defined as the ease of using a system and the extent to which specific users to achieve particular goals with effectiveness, efficiency and satisfaction in a particular context [13-16] could use a particular product. In other words, usability is defined as the degree, to which the system simplifies tasks and helps users perform them quickly with a minimum amount of mental and physical efforts. Problems can cause users to make errors and interact with the system unsuccessfully, leading to confusion, fatigue and boredom of training tools. Moreover, this can postpone the proper and long-term use of educational technologies [17]. Therefore, the user interface of systems designed to train users should be user-friendly, such that users have no concerns other than learning and could use that system easily in order to learn the subject matter.

There are several methods for evaluating the usability of information systems, one of which is the heuristic evaluation method, which is a rapid, low cost, and widely used method introduced by Nielsen [18]. In heuristic evaluation, evaluators assess whether the design of a user interface follows a series

of predetermined standard principles (heuristics) and identify their violations as usability problems [18]. Heuristic evaluation can identify a large number of user interface problems in software systems [13-17]. Thyvalikakath et al. [19] reported a large number of usability problems could be identified in user interface design with low cost and time by 3-5 trained evaluators using the heuristic evaluation method. Several evaluation studies have been reported using heuristic evaluation for evaluating different information systems such as mobile learning applications [20], web-based educational resources [21] and online courses [22]. Also, previous studies on the acceptance of e-learning systems by users have shown the usability of these systems is considered a very important factor in their success [23-26].

Therefore, the usability of e-learning tools should be examined in terms of learning, efficiency, recall, errors and satisfaction to determine whether they could be accepted as learning tools. Researchers have found that usability evaluation methods such as the heuristic evaluation method have not yet been applied to evaluate web-based training tools of classification systems. Given the importance of usability of these training tools and medical record coding, these training tools should be developed and designed with minimal usability problems in order to have optimal productivity and effectiveness, so that users can achieve the most important goal of providing these tools, i.e., learning classification system coding easily. Therefore, this study aims to identify the usability problems of WHO-FIC training tools.

MATERIAL AND METHODS

This applied, descriptive and cross-sectional study examined WHO-FIC coding training tools using Nielsen's heuristics evaluation method in 2021. A search was performed in Google by combining WHO-FIC training tool keywords in order to identify WHO-FIC coding training tools (Table 1). The inclusion criteria for WHO-FIC selection were systems that had web-based learning tools as well as systems that their training tools were available to the public.

In the present study, we evaluated the user interface of the relevant training tools on the basis of the following 10 principles proposed by Nielsen: visibility of system status; match between system and the real world; user control and freedom; consistency and standards; help users recognize, diagnose, and recover from errors; error prevention; recognition rather than recall; flexibility and efficiency of use; aesthetic and minimalist design; and help and documentation (Table 2) [27-29]. The heuristic evaluation of the relevant training tools was performed by ten evaluators (two medical informatics faculty member, four PhD students of

medical informatics, two had a Master’s degree in medical informatics and two had a Master’s degree in health information technology). The inclusion criterion for selecting evaluators was those who were practically and theoretically familiar with Nielsen’s heuristic evaluation principles and WHO-FIC.

Table 1: Keywords used to identify WHO-FIC training tools

Keywords related to WHO-FIC	International Classification of Diseases, (ICD-10); International Classification of Functioning, Disability and Health (ICF); International Classification of Health Interventions (ICHI); International Classification of Diseases for Oncology, 3rd Edition (ICD-O-3); ICD-10 Classification of Mental and Behavioral Disorders: Diagnostic criteria for Research; Application of the International Classification of Diseases to Neurology (ICD-10-NA); Application of the International Classification of Diseases to Dentistry and Stomatology, 3rd Edition (ICD-DA); International Classification of Primary Care, Second edition (ICPC-2); International Classification of External Causes of Injury (ICECI); Technical aids for persons with disabilities - Classification and terminology (ISO9999); The Anatomical Therapeutic Chemical Classification System with Defined Daily Doses (ATC/DDD); International Classification for Nursing Practice (ICNP)
Keywords related to training tools	Educational application; Educational software; Educational website; Training tool; Self-learning tool; E-learning tool; Virtual learning interactive; Instruction

Table 2: Nielsen’s ten usability heuristics

No	Principle (heuristic)	Description
1	Visibility of system status	The system should always keep users informed about what is going on, through appropriate feedback within a reasonable time.
2	Match between system and the real world	The system should speak the user’s language, with words, phrases and concepts familiar to the user, rather than system-oriented terms.
3	User control and freedom	Users should be free to select and sequence tasks, rather than having the system do this for them.
4	Consistency and standards	Users should not have to wonder whether different words, situations, or actions mean the same thing.
5	Help users recognize, diagnose, and recover from errors	Error messages should be expressed in plain language.
6	Error prevention	Even better than good error messages is a

No	Principle (heuristic)	Description
		careful design that prevents a problem from occurring in the first place.
7	Recognition rather than recall	The user should not have to remember information from one part of the dialogue to another.
8	Flexibility and efficiency of use	Allow users to tailor frequent actions. Provide alternative means of access and operation for users who differ from the “average” user.
9	Aesthetic and minimalist design	Dialogues should not contain information that is irrelevant or rarely needed.
10	Help and documentation	Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation.

The data were collected using a form designed based on the standard usability checklist [28]. The content validity of this form was confirmed by three health informatics specialists. This form consisted of a table containing columns entitled problem name, problem description, problem location and heuristic type. The evaluators independently examined different parts of WHO-FIC training tools in terms of heuristic principles and entered the identified problems into the mentioned form.

Data analysis

The data were analyzed in terms of descriptive statistics, percentage and frequency in two stages in Excel 2016. After collecting the data, the problems identified by evaluators were combined. After removing the duplicates, they were collected in a single list. A unit list of problems was provided to all the ten evaluators independently to determine the severity of each problem according to Nielsen’s 5 scale rating [29]. The severity of each problem was calculated on the basis of the following three factors, as described by Nielsen [30]:

Frequency: Does the problem occur frequently or infrequently?

Impact: Is the problem easily controlled by end-users or with difficulty?

Persistence: Does the problem frequently cause inconvenience to end-users or is it a one-time problem?

Accordingly, each problem was scored from 0 to 4 (Table 3) [30]. The average severity assigned by the evaluators was calculated to determine the final severity of each problem. Then, the identified

problems were classified in one of the five categories shown in Table 3 based on the average severity.

Table 3: Severity rating scale and problem severity range

Problem type	Severity	The average severity	Description
No problem	0	0-0.5	I don't agree that this is a usability problem at all.
Cosmetic	1	0.6-1.5	Need not be fixed unless extra time is available on a project.
Minor	2	1.6-2.5	Fixing this should be given low priority.
Major	3	2.6-3.5	Important to fix, so should be given high priority.
Catastrophe	4	3.6-4	Imperative to fix this problem.

RESULTS

In total, five WHO-FIC training tools were identified, including ICD-10, ICD-11, ICF, ICPC and ICD-O (Table 4).

In total, 137 problems related to various parts of WHO-FIC training tools were identified by the evaluators. After merging and removing the duplicates, 40 problems were obtained. The average severity of the system problems was 2.60, indicating the problems were of major type.

Most of the identified problems were related to the ICD-10 training tool (n=20) (Fig 1). Most of the usability problems of catastrophe type were observed in this training tool (n=7). The average severity of problems of ICD-10 (2.85) and ICD-11 (2.75) training tools was higher than that of other training tools. Based on the rating scale (Table 3), the severity of the identified problems in these two systems was of major type (Fig 1).

Table 4: Identified WHO-FIC training tools

Training tools	Name of classification	Developer	Available from
ICD-10 training tool	International Classification of Diseases (ICD-10)	WHO	https://apps.who.int/classifications/apps/icd/icd10training/ICD-10%20training/Start/index.html
ICD-11 Training Package	International Classification of Diseases (ICD-11)	WHO	https://icdcdn.who.int/icd11training/index.html
ICF e-learning Tool	International Classification of Functioning, Disability and Health(ICF)	Institute for Medical Information Processing, Biometry, and Epidemiology	https://www.icf-elearning.com/
ICPC-3 Training	International Classification of Primary Care (ICPC-3)	WONCA	https://training.icpc-3.info/
ICD-O-3 training	International Classification of Diseases for Oncology (ICD-O3)	National Cancer Institute	https://training.seer.cancer.gov/icdo3/

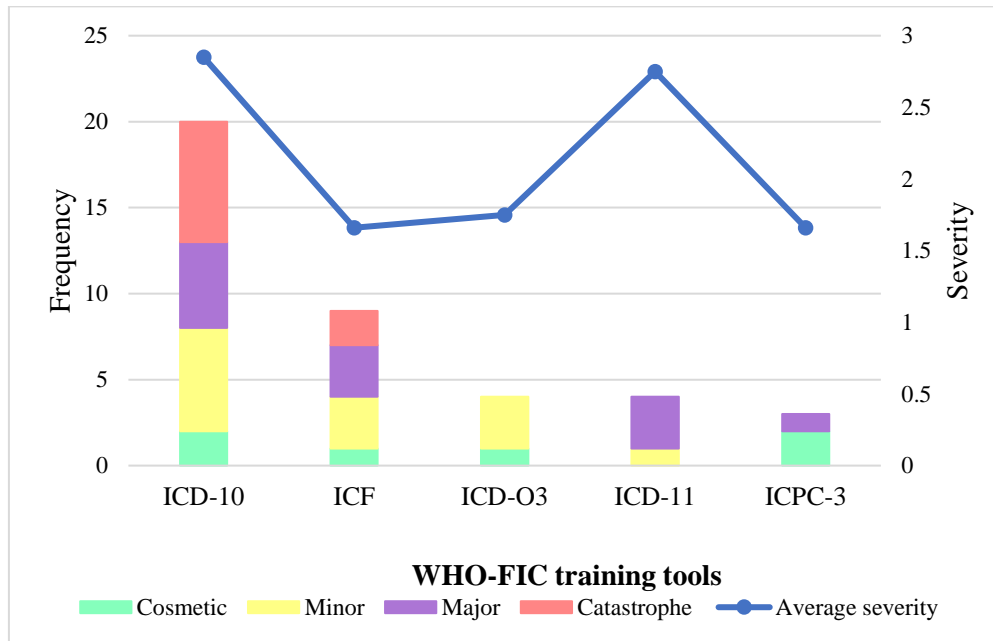


Fig 1: The severity of usability problems of training tools

Table 5: Frequency and average severity of problems by heuristics

Heuristic	Cosmetic	Minor	Major	Catastrophe	Total	Average severity (SD)
	Frequency (Percentage)					
Visibility of system status	1(25.0%)	0	0	3(75.0%)	4(100%)	3.25(1.5)
Match between system and the real world	0	1(33.3%)	2(66.7%)	0	3(100%)	2.66(0.57)
User control and freedom	1(14.3%)	1(14.3%)	2(28.6%)	3(42.9%)	7(100%)	3.0(1.15)
Consistency and standards	1(25.0%)	1(25.0%)	2(50.0%)	0	4(100%)	2.25(0.95)
Help users recognize, diagnose, and recover from errors	0	0	0	1(100%)	1(100%)	4.0(0)
Error prevention	0	0	0	0	0	0
Recognition rather than recall	0	1(16.7%)	4(66.7%)	1(16.7%)	6(100%)	3.0(0.63)
Flexibility and efficiency of use	0	0	0	1(100%)	1(100%)	4.0(0)
Aesthetic and minimalist design	3(30.0%)	6(60.0%)	1(10.0%)	0	10(100%)	1.80(0.63)
Help and documentation	0	3(75.0%)	1(25.0%)	0	4(100%)	2.25(0.50)



In the present study, out of 40 identified problems, most of the problems were related to heuristics of aesthetic and minimalist design (25.0%), user control and freedom (17.5%) and recognition rather than recall (15.0%). The lowest number of problems was related to heuristics of helping users recognize, diagnose and recover from errors (2.5%) and flexibility and efficiency of use (2.5%). Problems related to the “error prevention” heuristic were observed in none of the five identified tools (Table 5).

The highest average severity was related to heuristics


of helping users recognize, diagnose and recover from errors and flexibility and efficiency of use (Table 5).

Visibility of system status

Among the four identified problems in this principle, three were related to the ICD-10 training tool and one was related to the ICF training tool. The identified major or catastrophe problems of these systems were as follows:



- Icons  and  were used in the ICD-10 training


tool to exit training and return to the main menu, respectively. On some pages of this training tool, the system did not give any visible feedback when the user clicked on these icons.

- There was an icon  on the first page of the ICF training tool that had to be clicked to enter the program. However, the system did not provide any visible feedback when the user clicked on this icon.

Matching between the system and real world

Among the three problems identified in this principle, two were related to the ICD-10 training tool and one was related to the ICF training tool. Problems of these systems were as follows:

- Icon  was used in the ICD-10 training tool to go to the next and previous pages. In the real world, the arrow icon or page number is usually employed to go to the next and previous pages. This icon was observed on all pages of the ICD-10 training tool. Moreover, icon  was used for receiving further information on some pages of this training tool. However, this icon is applied to ask a question in the real world.

- Icon  was used in the ICF training tool for obtaining further information. However, this icon is often employed for messaging or chatting in the real world.







User control and freedom



Out of the seven problems identified in this principle, three were related to the ICD-10 training tool. This principle was violated in ICD-11, ICF, ICD-03 and ICPC-3 training tools. Problems of these tools were as follows:

- The possibility of emergency exit in the middle of training and closing a course was not defined in all these tools.

Consistency and standards

Out of the four problems identified in this principle, three were related to the ICD-10 training tool and one was related to the ICF training tool. Problems of these tools were as follows:

- In the ICD-10 training tool, icons  and  were alternately used to go to the next or previous pages. In this training tool, icon  was used on some pages for asking questions and self-assessment at the end of each chapter, while icon  was applied on other pages for receiving further information. Moreover, icon  was employed on some pages to open the sliding menu and see further information, and icon  was used on other pages to see further information. Given that both icons aim to

provide further information, the users expect to see the same icon. In ICF training tool, icons  and  were alternately used to display further information.

Helping users recognize, diagnose and recover from errors

Only one problem was observed with this principle in ICD-10 training tool. When the user clicked on “cause of mortality” option on the home page of this training tool, an error appeared containing a combination of numbers and codes, and the user did not know what to do to fix it (Fig 2).


The requested content does not exist.


- HttpStatusCode: 404
- ErrorCode: WebContentNotFound
- RequestId : 03d46af5-101e-00a8-509d-655989000000
- TimeStamp : 2021-06-20T06:29:24.0573757Z

Fig 2: Heuristic violation of helping users recognize, diagnose and recover from errors in ICD-10 training tool

Recognition rather than recall

Out of 6 problems identified in this principle, 2, 2, 1 and 1 were related to ICD-10, ICF, ICD-03 and ICD-11, respectively. Problems of these tools were as follows:

- In ICD-10 training tool, users should remember that they should click on the blue link at the bottom of the page on some pages and icon  on other pages in order to go to the next educational content.

- In order to enter ICF training tool and activate it, users should first select a language from the bottom of the page and, then, click on icon . In this training tool, users should remember that they should select titles of other existing courses in the menu in order to exit a training course (Fig 3).

- In ICD-03 and ICD-11 training tools, users should remember that they should select titles of other courses in the menu in order to exit a training course.

Flexibility and efficiency of use


Only one problem was identified regarding this principle in ICD-10 training tool. As mentioned in the user manual of this tool, icon  only closes a window in Internet Explorer (Fig 4).



Fig 3: Heuristic violation of recognition rather than recall in ICF training tool

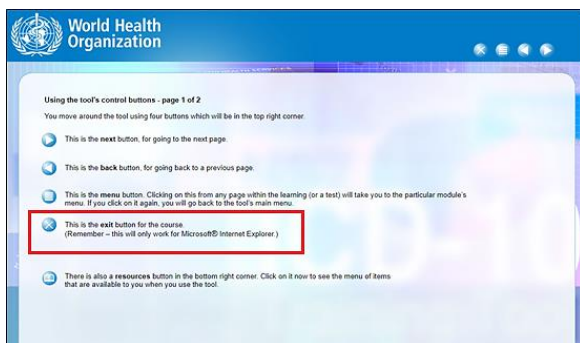


Fig 4: Heuristic violation of flexibility and efficiency of use in ICD-10 training tool

Aesthetic and minimalist design

Out of 10 problems identified regarding this principle, 5, 2, 1, 1 and 1 were related to ICD-10, ICF, ICD-03, ICD-11 and ICPC-3 training tools, respectively. In these tools, the texts were written in inappropriate colors (for example, light blue text with white background in ICD-10) and small font size.

Guidance and documentation

There was no user manual in ICD-11, ICD-03 and ICPC-3 training tools. Therefore, users did not know how to use these training tools. In ICF training tool, there was no user manual on a separate page, i.e., the user manual was on the welcome page of the program.

DISCUSSION

Violating heuristics of aesthetic and minimalist design, user control and freedom and recognition rather than recall were among the most common problems of WHO-FIC training tools. Moreover, the highest number of problems was related to ICD-10 training tool. Evaluators reported that half of the user interface problems of WHO-FIC training tools were of major and catastrophe type. Most of the usability problems were related to violating aesthetic and minimalist design, which were classified as minor problems. In line with this result, various studies have reported violating aesthetic and minimalist design as a minor usability problem [31, 32].

Therefore, designers of these training tools should design system screens in such a way that they lack rarely used information because this additional information causes users to ignore important information and, ultimately, become confused [33, 34]. Points such as the correct arrangement of information, placing all the related items in one section, using a different color and font for the title compared to other descriptions and providing necessary information should be considered in order to resolve the violation of aesthetic and minimalist design.

Violating heuristic of recognition rather than recall was among the most frequent usability problems identified in WHO-FIC training tools, which was classified as a major problem. Consistent with this finding, Khajoui et al. [35], Lai [36], and Farzandipour et al. [37] have reported recognition rather than recall as the most identified usability problem.

Thyvalikakath et al. [19] found that failure to comply with heuristic of recognition rather than recall would cause users not to memorize bleeding icon in this system. Therefore, information should be displayed in such a way that users could understand its purpose. In this case, users require less mental and physical activities to remember the icons. Moreover, using trial and error to understand how the system works decreases [38].

Some of the problems identified in the present study were frequently repeated; for example, the possibility of emergency exit in the middle of training and closing a course was not defined in all the examined training tools. This problem which was related to heuristic of user control and freedom was frequently found in different parts of training tools. In line with this result, Nabovati et al. [32], and Kumar et al. [20] have reported user control and freedom as a problem with major severity. Therefore, the user interface should be designed in such a way that users can easily select emergency exit without scrolling through different pages. The frequency and average severity of usability problems related to visibility of system status and matching between the system and real world were low and major, respectively. In line with this result, Khajouei et al. [35], and Zardari et al. [39] have reported that one of the major identified problems was related to the heuristic of visibility of system status. Zardari et al. [39] showed a failure to comply with the heuristic of matching between the system and real world was among the most frequent usability problems in systems. Therefore, WHO-FIC training tools should be designed in such a way that they always keep users informed of what is happening with the right messages at the right time (such as using the status bar and displaying the message on it). Using words, terms and concepts familiar to users in training tools make it easier for them to communicate with systems.

The frequency and average severity of the heuristic of consistency and standards was low and minor, respectively. Sugiarto et al. [40] evaluated the website of Widyatama University and reported failure to comply with the heuristic of consistency and standards had low frequency. Inconsistent with this finding, Khajouei et al. [14] found that the highest number of identified problems was related to the heuristic of consistency and standards. They evaluated usability of emergency information subsystems of a hospital information system using the heuristic evaluation method. However, the present study evaluated usability of WHO-FIC training tools. Therefore, difference in the priority of usability problems could be due to different types of systems examined in the present research and previous ones.

In this investigation, failure to comply with the heuristic of guidance and documentation was among the minor problems with low frequency. In line with our work, Jeddi et al. [31] found that usability problems of guidance and documentation had low frequency. Inconsistent with the present research, Shahid et al. [13] indicated the highest frequency of identified problems was related to heuristic of guidance and documentation. The reason for this discrepancy could be attributed to using different procedures. In the present study and previous works, the system was examined by evaluators. However, in the study by Shahid et al. [13], users' views on the identified problems were evaluated by the heuristic evaluation method. In general, users may frequently encounter ambiguities when working with the system. Thus, they require a user manual to easily use training tools. Such information should be easy to search and user-centered and specify the steps required to complete the process. Moreover, its content should not be too long.

This principle in training tools could reduce user confusion and help solve problems that users may encounter while working with the system and, ultimately, save users' time by reducing their unnecessary contact with system administrators.

In this study, the minimum number of problems in WHO-FIC training tools was related to heuristics of helping users recognize, diagnose and recover from errors and flexibility and efficiency of use. Khajouei et al. [14] found that failure to comply with the heuristic of helping users recognize, diagnose and recover from errors was the least frequent problem. Inconsistent with our finding, Sugiarto et al. [40] reported that violating heuristics of helping users recognize, diagnose and recover from errors and flexibility and efficiency of use was the second and third most frequent problems, respectively. In the present study, the low frequency of problems related to these two Nielsen's heuristics may be due to the point that these two heuristics were less identified by

the evaluators in the training tools. Therefore, the evaluators did not evaluate the available tools for these heuristic heuristics. In general, the user interface of training tools should be redesigned in such a way that the data correction process is provided after initial verification by the users. Moreover, the ability to cancel or revise the data entered into the system should be provided. Novice users should be able to work easily with these training tools and expert users should be able to work with the system more quickly through a series of pre-designed shortcuts.

The present study had two limitations. First, the heuristic evaluation method is among the inspection methods, based on which people who are familiar with principles of user interface design (such as Nielsen's principles) examine the systems. Accordingly, this evaluation is performed without involving end-users of systems, including coders who are the end-users of training tools. Therefore, all the system usability problems may not be identified using this method. However, studies have demonstrated this method could identify most of the problems. Second, WHO, as the founder of most of the international classification systems of diseases as well as designer and developer of all WHO-FIC training tools, was not considered in this study. Therefore, designers may use different principles to create a training tool, which limits applying our results to some of these tools. However, most of the identified usability problems are troublesome for users and it is important to fix them.

Overall, this study identified usability problems of WHO-FIC training tools using the heuristic evaluation approach, half of which were of major and catastrophe type. A standard and cost-effective method that did not require a large amount of time was used to evaluate the usability of training tools. Studies have indicated the cost-effectiveness of this method could be maximized if at least three evaluators are involved and, accordingly, this method could identify more than 75% of the existing problems of the system [41].

Although the severity of problems was subjectively determined in this evaluation and each evaluator specified the severity using the three heuristics proposed by Nielsen, the final severity was highly accurate due to the applied calculation method, i.e., obtaining the average of severities assigned by independent evaluators.

Therefore, although a moderate number of usability problems of WHO-FIC training tools were identified by the heuristic evaluation method, it is recommended to evaluate the usability of these training tools by other common methods, including usability inspection as well as usability testing methods in future research. Moreover, these systems are employed by international users and coders who

sometimes do not have the same computer literacy and informatics skills. Therefore, these training tools should be designed in such a way that users only focus on learning the desired educational content and do not get involved in the usability problems of these tools.

CONCLUSION

WHO-FIC training tools had several usability problems, including failure to comply with heuristics of aesthetic and minimalist design, user control and freedom and recognition rather than recall. The evaluators believed that half of the identified problems were of major and catastrophe type. Given the wide range of users of these systems and the importance of these training tools for rapid learning of coding diseases and health-related domains, it is necessary to provide training for people with different levels of ability by solving these problems. Results of this study could help designers and developers of WHO-FIC tools and other similar training systems to identify and correct usability problems. Currently, some WHO-FIC systems are widely used worldwide and newer versions will replace the current ones in the near future. Thus, necessary facilities should be provided for implementing these coding systems in hospitals and other healthcare institutions. Furthermore, necessary measures should be taken for properly training the coders [42]. Therefore, planners and policymakers in different countries can use the results of this study to design more user-friendly coding tools (similar to WHO-FIC tools) tailored to

their own culture and language.

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All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. The study was approved by the Research Ethics Committee of Kerman University of Medical Sciences (Code of Ethics: IR.KMU.REC.1399.283).

AUTHOR'S CONTRIBUTION

All authors contributed to the literature review, design, data collection and analysis, drafting the manuscript, read and approved the final manuscript.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest regarding the publication of this study.

FINANCIAL DISCLOSURE

No financial interests related to the material of this manuscript have been declared.

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