The future of quality and accreditation surveys: Digital transformation and artificial intelligence

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Abstract
Accreditation is documented and reported by the external evaluation organization that the health facility provides services at certain standards. While on-site survey practices are being carried out by external evaluation organizations, there has been a trend toward new survey approaches using digital technologies as a result of the research carried out to ensure efficiency in surveys as well as improved effectiveness. With the emergence of the Covid-19 epidemic, external evaluation organization in all sectors has been forced to work remotely and adopt digital technology. Shared remote survey experience results reported its benefits as also some problems. The increase in the adaptation of digital technologies in quality and accreditation surveys showed that the use of technology in the survey structure will develop further in the future. Can artificial intelligence technologies be the next digital technology that will be adapted to surveys? In addition to the benefits of using artificial intelligence technologies, there are potential problems to consider and some requirements for using them. External evaluation organizations must be prepared to develop their organizational capacity to ensure that quality and accreditation surveys are responsive to changing industry needs and must make the necessary investments to make the data, which is the most important source of digital technologies, accessible and usable.

Key words: quality surveys, accreditation surveys, artificial intelligence, healthcare

Introduction
Quality is one of the most important factors that determine the health facility preference of patients in healthcare where global competition conditions are difficult [1]. While ensuring quality has become a necessity in order to gain competitive advantage, accreditation has become an important tool.
Accreditation is documented and reported by the external evaluation organization (EEO) that the health facility provides services at certain standards. The continuity of accreditation is ensured by the surveys carried out by the EEO at regular intervals [2].

Searching for new digital technology in quality and accreditation surveys

While on-site survey practices are being carried out by EEO, there has been a trend towards new survey approaches using information technologies as a result of the researches carried out to ensure efficiency in surveys as well as improved effectiveness. The model in which remote accreditation surveys are carried out using eye-tracking technology was introduced at the 36th ISQua international conference in 2019. It has been adopted as a technology that enables the collection of survey evidence with eye-tracking [3].

With the emergence of the COVID-19 epidemic, EEO in all sectors has been forced to work remotely and adopt digital technologies (DTs), whether they are ready or not, due to travel restrictions and many countries closing their borders. This situation has led to the search for alternative methods that can be applied quickly instead of the usual on-site surveys. Remote surveys have found their place as the best alternative [4, 5].

Shared remote survey experience results reported that the benefits of remote surveys are reduced survey fees and travel costs, enlargement of the available surveyor pool, enabling a wider scope of survey compared to on-site surveys in terms of time limitation and improvement in document review and the use of technology builds evidence and strengthens reporting. However, some problems may be encountered during the remote survey. Technological glitches may occur during the survey. It is necessary to be prepared for problems such as internet problems, the links of online meeting programs may not work, audio transmission may not be clear, technical support may be needed and video, picture and document transmission problems may occur [4–7]. Many EEOs have published guidance documents for surveyors and institutions to be surveyed to take pre-survey action against these problems [8, 9].

What could be the next technology in the future of quality and accreditation surveys?

The increase in the adaptation of DTs in quality and accreditation surveys (QAS) is a sign that the use of technology in the survey structure will develop further in the future. What will be the next DT that can be adapted to surveys will be in line with the developments in health services sectorally. The rapid development of DTs and the increase in data collection and storage capacity in healthcare have supported the development of artificial intelligence (AI) technology in healthcare [9]. After Industry 4.0, the use of AI technologies as a decision support tool has increased in healthcare services. AI is often used in diagnosis, medical prediction and creates many innovation opportunities [10, 11]. When evaluated in terms of survey practices, AI-based technologies have found use in survey activities in different sectors, especially in financial audits.

On-site survey activities are based on manual practices by way of sampling, while AI-based technologies can analyse more information than humans can and automatically survey big databases. AI-based surveys simplify the surveying process, reduce surveyor workload and costs and increase its quality due to more data processing and evidence generation. In document-based surveys, it identifies inconsistencies and outliers in a shorter time than surveyors, anticipates increasing risks and provides surveyors with warnings about high-risk areas [12–15]. In addition, with the use of a database of previous survey findings, judgements regarding the previously vetted and scored findings will be transferred to subsequent surveys. These advantages of AI technologies-adapted surveys will contribute to increasing the accuracy and consistency of survey findings. Strengthening the survey structure will support the EEO in terms of survey, time and resource efficiency.

However, there are some concerns regarding the use of AI technology. One of the most frequently discussed topics is prejudice and discrimination. Data bias issues can arise when the data used does not reflect the target audience or when insufficient data are used to train AI models. Even if the data used in training is OK, an algorithm may still exhibit bias due to inconclusive correlations. As it may be due to bias, the inability of the AI model to recognize visual data or misrecognition may lead to the wrong decision. Despite technically correct decision-making, inaccuracies can occur where the model and outcome are misrepresentations of real-world equivalents. The use of the findings obtained in surveys in AI models by protecting data security and data privacy, and the restriction of transparency due to the nature of machine learning may cause ethical problems [16, 17]. It is difficult today to predict how socio-technical systems, including healthcare facilities and surveyors, will be affected by the use of AI technologies in surveys, and research is needed on this issue.

In order for the EEO to be ready for AI-based DTs, organizational capacity, strengths and weaknesses of the institution should be evaluated. The data to be used, the quality of data, the size of databases and the risks that the use of technology will bring should be determined. If the database is not of suitable size and/or accessible, the work to be done on the structuring of the data will be very costly and difficult. EEO should be prepared against such risks [18]. Problems experienced in on-site, remote surveys practices should be identified and studies should be carried out to develop AI technology to create solutions to these problems.

Surveys made by using or planned to be made by using DTs presents many opportunities, and it is obvious that its use will increase gradually but, time to time, it will be seen whether it can completely replace on-site surveys. When considering the question of whether on-site or remote survey should be preferred, possible risks must be evaluated. Whatever DT is used in the remote survey method, it is a significant risk for all parties that critical aspects of the standards required are overlooked and that a survey is less effective than on-site survey. Even in remote surveys, the responsibility of the surveyors to provide a high-quality comprehensive survey remains, but there is a risk that the survey process will come out of the surveyor’s control if an effective way is not found in sample selection or tracking. In addition to the lack of competent human resources or sufficient technological infrastructure during remote surveys, the risks related to the
impartiality, security, validity and confidentiality of data and ethical issues can adversely affect the effectiveness of the survey. Especially in institutions to be surveyed for the first time and in organizations that violate accreditation rules or legal and regulatory requirements, the risk of not evaluating the conditions correctly may affect the survey result positively or negatively.

In conclusion, EEOs must be prepared to build their organizational capacity to follow DTs and ensure that QAS are responsive to changing industry needs. While determining the survey method, the risks that may arise should be considered in all aspects. EEOs must invest to make the data, which is the most important source of DTs, accessible and usable.

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