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Original research article

Volunteering in hospitals to deal with emergencies

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Abstract

Introduction: Volunteer activities during emergencies occur both formally and informally. In developed countries, emergencies are managed by professionals and formal volunteers. Spontaneous (informal) volunteers often respond at any stage, and this is known as convergent response. While these volunteers help prevent loss of life and property, their lack of organization and emergency knowledge poses risks, such as safety and responsibility issues. This leads professional responders to hesitate in using them. The implementation of effective integration strategies can significantly aid in emergencies.
Objective: This work focuses on volunteering in ensuring hospital crisis preparedness. The aim is to assess volunteering and identify applicable activities during emergencies, especially in hospitals. A methodical procedure for selecting suitable volunteers was developed using multi-criteria evaluation methods.
Methods: A systematic procedure for selecting volunteers was developed based on the implementation of multi-criteria evaluation methods. The implementation of multi-criteria decision-making methods offers an objective selection tool. Sequential steps are directed towards the selection of volunteers who will be competent in performing selected activities of healthcare personnel in hospitals during crisis preparedness. A step-by-step, organized, and targeted process is elaborated in individual, interconnected steps.
Results: The study defines a criteria model for selecting hospital volunteers during emergencies, including Professional Qualification, Length of Practice in Healthcare Fields, Volunteering Costs, and Driver's License Category B.

Keywords: Emergencies; Hospital; MEVYDO; Multi-criteria evaluation of options; TOPSIS; Volunteers

Introduction

The aim of this article is to present the proposed methodology for selecting volunteers for hospitals during emergency situations (MEVYDO). The main result of this study is the establishment of criteria and a systematic selection of volunteers. The proposed MEVYDO methodology enables an objective evaluation of candidates using multi-criteria decision-making and includes key criteria such as Professional Qualification (Professional Eligibility, Health Eligibility, Criminal Integrity); Length of Practice in Healthcare Fields; Volunteering Costs; and Category B Driver's License (see supplementary material).

In recent years, volunteering has received considerable attention. A literature review shows that the convergence of volunteers is inevitably associated with the occurrence of extraordinary events and presents a challenge for developing strategies for their utilization (Avenell, 2013; De Bruycker et al., 1983; Katsube, 2013; Leng, 2015; Mackwani, 2015; Takao, 2001; Voorhees, 2008; Waldman et al., 2018). Various research works focus on analyzing the activities of volunteers (Orloff, 2011; Twigg and Mosel, 2017).

This positive trend is particularly evident in volunteering focused on supporting hospitals. The system for utilizing and integrating volunteers into the current healthcare systems in the Czech Republic has been developed in the form of the Healthcare Volunteering Methodology (Štverka Kořínková et al., 2023). Although this document offers a comprehensive approach to the volunteer process in hospitals, there is still room for improving selected aspects of the volunteer process. The presented normative selection of volunteers is a newly developed topic that aims to streamline the volunteer selection process in hospitals during extraordinary events, thereby appropriately complementing the mentioned methodology.

An overview of the use of multi-criteria evaluation methods in healthcare provides a broader context and highlights the importance of these methods, which have long been proven and established in various healthcare systems. These experiences strengthen the article's argument, as they confirm that the proposed methodological approach is not merely theoretical but based on real application. Through successful implementations, we increase the credibility of our methodology while also providing a solid foundation for the claim that multi-criteria evaluation can significantly contribute to the effective selection of volunteers for hospitals during emergency

situations. The proposed research topic is novel, as there are few or no studies on selecting volunteers to ensure crisis preparedness in Czech hospitals. However, foreign studies highlight the potential of multicriteria decision-making methods in healthcare. The PROMETHEE II method was applied in emergency departments to reduce overcrowding and waiting times, demonstrating its effectiveness in resource management (Amaral and Costa, 2014). Managing healthcare waste, which includes hazardous materials, is critical. The TOPSIS methodology, combined with the Analytic Hierarchy Process (AHP), was used to select logistics providers for medical waste management, enhancing efficiency and safety (Buyukozkan and Gocer, 2016). Fire safety in hospitals is vital due to the complexity of evacuating patients. The Failure Mode and Effect Analysis (FMEA) with multi-criteria decision-making methods assessed fire risks in hospitals, identifying and evaluating fire management methods (Omidvari et al., 2020). Patient satisfaction with hospital services was evaluated using the Interval-Valued Fuzzy Modified TOPSIS method to determine the best orthopaedic hospitals (Bhalaji et al., 2021). For COVID-19 treatment options, the fuzzy PROMETHEE and VIKOR methods assessed various treatments, with plasma exchange being the most preferred (Yildirim et al., 2021). During the COVID-19 pandemic, emergency care centres and transport vehicles were evaluated using the PROMETHEE method, considering operational and preventive criteria (Hosseini et al., 2022). The optimal location for a pandemic hospital was determined using the Analytic Hierarchy Process (AHP) with 27 criteria (Ağaç and Şimşir, 2022).

Materials and methods

The proposed MEVYDO methodology represents a normative model of volunteer selection using the multi-criteria evaluation method. It provides a structured and objective approach to assessing and selecting volunteers, taking into account key aspects for hospital crisis preparedness. Implementing this model will improve the use of volunteers and ensure a quality and rapid response to emergencies. The model is based on empirical data and expert opinions gathered through the Delphi method, ensuring it is empirically grounded, valid, and practically applicable.

The group of experts provided diverse perspectives and experiences to achieve a comprehensive view on the issue of volunteer selection for hospitals during extraordinary events. The following criteria were considered when selecting expert members: expertise and experience (members had professional knowledge and practical experience in the areas of volunteering, healthcare, and crisis management); relevance to the topic (experts had direct relevance to the study topic: they worked in hospitals, were involved in crisis management, and had experience with volunteer work during extraordinary events); diversity and representation (for diversification, the expert group included a doctor, head nurse, ward nurse, hospital emergency preparedness officer, expert in crisis management outside healthcare, and expert in the field of volunteering); readiness and engagement (members were willing to actively participate in the entire study process). Responses obtained from respondents were evaluated based on the degree of agreement or disagreement with the assessed statement. Response values were provided on a Likert scale (yes – rather yes – no). The selection of criteria determining the set of requirements for volunteer selection was evaluated as the simple sum of votes given to each statement, and for each statement, the average of the obtained responses was calculated, serving to assess the average degree of agreement. Based on these results, criteria for defining and evaluating the normative model for volunteer selection were established.

Criterion No. 1 (K1): Professional Qualification (Qualification for the performance of healthcare and other professional work)
Criterion No. 1 (K1.1) Professional Eligibility
Evaluation: Aspirational level = 1 (Binary criterion:
0 – the variant does not meet the professional eligibility;
1 – the variant meets the professional eligibility)

Criterion No. 1 (K1.2) Health Eligibility
Evaluation: Aspirational level = 1 (Binary criterion:
0 – the variant does not meet the professional eligibility;
1 – the variant meets the professional eligibility)

Criterion No. 1 (K1.3) Criminal Integrity
Evaluation: Aspirational level = 1 (Binary criterion:
0 – the variant does not meet the professional eligibility;
1 – the variant meets the professional eligibility)

Criterion No. 2 (K2): Length of Practice in Healthcare Fields
Evaluation: Aspirational level = is not defined. Maximization criterion (years)

Criterion No. 3 (K3): Volunteering Costs
Evaluation: Aspirational level = 3000 (Volunteering costs are evaluated in units [CZK/person]). The lower the value, the higher the level of the variant.

Criterion No. 4 (K4): Driver's License Category B
Evaluation: Aspirational level = 1 (Binary criterion: 0 – the variant does not have a driving license; 1 – the variant has a driving license)

To determine preferences among criteria, this work uses aspirational levels and weights. Aspirational levels classify variants as acceptable or unacceptable based on predefined thresholds. If aspirational levels are not set, criteria are evaluated using weights determined by pairwise comparisons through the Saaty method.

The Saaty method involves pairwise comparisons to assess preference relationships between criteria, arranging criteria in a matrix, assigning points to express preferences, and ensuring matrix consistency via the Consistency Index.

Weights are estimated by summing each row's elements and normalizing geometric means. The Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) is used for final evaluations, assessing alternatives based on their distance from ideal and worst-case scenarios. Input data include criterion values and weights, with criteria assumed to be maximized or converted if minimized.

The next part of the work focuses on the evaluation of the proposed MEVYDO methodology. The methodological approach for comparing the MEVYDO and Ministry of Health of the Czech Republic (MoH CR) methodologies was based on the definition of the objective and comparison criteria. The aim was to compare the MEVYDO and MoH CR methodologies based on the following criteria:
- Complexity of criteria: analyze which criteria are included.
- Weighting of criteria: analyze how the preferences for the criteria are determined.

- Use of sophisticated decision-making methods: assess the use of advanced decision-making methods versus basic methods without advanced decision tools.
- Flexibility and adaptability: evaluate the adaptability of the methodology to the specific requirements of hospitals.
- Accuracy and efficiency of selection: examine how the methodology enables the precise selection of candidates based on the given range of criteria.

The evaluation is presented in Table 2, which provides an overview of the evaluation of the MEVYDO and MoH CR methodologies.

Results

In the results section of the chapter, the proposed MEVYDO methodology is applied to 20 volunteers and subsequently compared with the existing methodology of the Ministry of Health of the Czech Republic.

Implementation of the MEVYDO methodology in practice

The systematic procedure for selecting volunteers is developed based on the implementation of multi-criteria evaluation methods. Sequential steps are directed towards the selection of volunteers who will be competent in performing selected activities of healthcare personnel in hospitals during crisis preparedness. A step-by-step, organized, and targeted process is elaborated in individual, interconnected steps (Table 1). A detailed description of the implementation of the MEVYDO methodology can be found in the supplementary material.

Table 1. MEVYDO methodology	
MEVYDO	
Step No. 1	Establishment and Definition of Criteria for Volunteer Selection
	Criterion No. 1 (K1): Professional Qualification • Criterion No. 1 (K1.1): Professional Eligibility • Criterion No. 1 (K1.2): Health Eligibility • Criterion No. 1 (K1.3): Criminal Integrity Criterion No. 2 (K2): Length of Practice in Healthcare Fields Criterion No. 3 (K3): Volunteering Costs Criterion No. 4 (K4): Driver's License Category B
Step No. 2	Filtering volunteers based on aspiration level
Step No. 3	Conversion of Criteria of the Same Type
Step No. 4	Expression of Criterion Preferences • Setting criteria weights using the Pairwise Comparison Method: Saaty's Method • The calculation of the normalization of the determined weights
Step No. 5	Evaluation of variants • Transformation of the criterion matrix into a normalized form • Calculation of the Weighted Criterion Matrix • Determination of the Ideal and Basal Variants • Calculation of the Distance from the Ideal Variant • Calculation of the Distance from the Basal Variant • Calculation of the Relative Indicator of Distances of Variants from the Basal Variant

Comparison of the results of the application of the MEVYDO methodology and the Ministry of Health of the Czech Republic methodology

Results of the MEVYDO methodology
After applying the MEVYDO methodology, which evaluates volunteers based on the following criteria: (K1) Professional Qualification (K1.1: Professional Eligibility, K1.2: Health Eligibility, K1.3: Criminal Integrity), (K2) Length of Practice in Healthcare Fields, (K3) Volunteering Costs, and (K4) Driver's License Category B, the evaluation of the volunteers was as follows. Based on failure to meet the set aspirational levels of the criteria, the following volunteers were excluded from further evaluation (see supplementary material): Volunteer 2, who did not meet professional eligibility (K1.1) nor possess a Category B driver's license (K4); Volunteer 4, who also lacked a Category B driver's license (K4); Volunteer 8, who was missing both professional eligibility (K1.1) and a Category B driver's license (K4); Volunteer 15, who lacked professional eligibility (K1.1); and Volunteer 19, who did not have a Category B driver's license (K4).

Those who met the criteria were included in the next round of evaluation using the TOPSIS method. The highest score was achieved by Volunteer 20 with a value of 0.793, followed by Volunteer 12 with a value of 0.727, and Volunteer 5 with a value of 0.701. In the following positions were Volunteer 16 (0.683) and Volunteer 14 (0.554). Next were Volunteer 3 and Volunteer 10, both with a value of 0.517. Mid-ranked were Volunteer 7 (0.458), Volunteer 17 (0.400), Volunteer 9 (0.389), and Volunteer 6 (0.356). Volunteers 18 (0.364) and Volunteer 1 (0.344) had values slightly above 0.3. The lowest scores were achieved by Volunteer 11 (0.227) and Volunteer 13 (0.000).

Results of the Ministry of Health of the Czech Republic methodology
After applying the MoH CR methodology ¬– which evaluates volunteers based on the criteria: K1: age, K2: health eligibility, and K3: criminal integrity – it was confirmed that all candidates met the set criteria. Since all the volunteers fulfilled all three key requirements, this selection is considered final. Therefore, all the listed candidates are deemed eligible according to the MoH CR methodology and meet all the necessary conditions for the next stages of volunteer work.

Partial conclusions
Partial conclusions from the comparison of the MEVYDO and MoH CR methodologies reveal fundamental differences in the approach to evaluating volunteers. The MEVYDO methodology emphasizes a broader range of criteria, including Professional Qualification (Professional Eligibility, Health Eligibility, Criminal Integrity), Length of Practice in Healthcare Fields, Volunteering Costs, and Driver's License Category B. This more comprehensive approach resulted in a selection of volunteers that excluded those who did not meet certain criteria, such as professional eligibility or possession of a Category B driver's license. Only those who met all the criteria proceeded to further evaluation using the TOPSIS method, where their ratings varied based on achieved values.

On the other hand, the MoH CR methodology uses simpler criteria – Age, Health Eligibility, and Criminal Integrity. As a result, all volunteers passed the evaluation as they met all the basic criteria.

These differences indicate that while the MoH CR methodology ensures minimal requirements for volunteer eligibility, the MEVYDO methodology aims for a deeper selection and

assessment of volunteers with regard to specific requirements that may be important for performing volunteer work in hos-

pitals during emergency situations. Table 2 provides a clear comparison of both methodologies.

Table 2. Comparison of the MEVYDO methodology and the Ministry of Health of the Czech Republic methodology		
Criteria	MEVYDO	Ministry of Health of the Czech Republic
Complexity of criteria	Considers a wide range of criteria: Criterion No. 1 (K1): Professional Qualification • Criterion No. 1 (K1.1): Professional Eligibility • Criterion No. 1 (K1.2): Health Eligibility • Criterion No. 1 (K1.3): Criminal Integrity Criterion No. 2 (K2): Length of Practice in Healthcare Fields Criterion No. 3 (K3): Volunteering Costs Criterion No. 4 (K4): Driver's License Category B Provides a broader perspective on the candidate.	Focuses on three basic criteria: Criterion No. 1 (K1): Age (at least 15 years of age) Criterion No. 2 (K2): Health Eligibility Criterion No. 1 (K3): Criminal Integrity It does not cover specific requirements that may be relevant in emergencies or for specialized tasks. The selection process is simpler and based on minimum requirements.
	Approach to age: Age is indirectly included in Criterion K1.1: Professional Eligibility. To meet this criterion, the volunteer must be over 15 years old.	*Approach to age:* Age is an explicit criterion, with candidates selected based on meeting the age threshold (15+ years).
Weighting of criteria	Uses weighted evaluation using Saaty's pairwise comparison. Each criterion can be assigned a different level of importance (weight), allowing the evaluation to be tailored to specific needs and priorities.	Criteria are not weighted; all are considered equally important, which can be simpler but less flexible.
Use of sophisticated decision-making methods	Uses the advanced TOPSIS method, which evaluates candidates based on their proximity to the ideal candidate. This allows for complex and numerical assessment, providing a detailed analysis and ranking of candidates based on multiple criteria.	Does not utilize advanced methods; the selection is based solely on meeting the criteria without detailed analysis.
Flexibility and adaptability	Flexible setting of aspirations and weighting of criteria allows customization of the selection process to meet the specific needs of the organization. Criteria can be adjusted or expanded based on the specific requirements of the role or situation.	Less flexible, focused on meeting basic legal requirements without options for adjustments based on specific roles or situations.
Accuracy and efficiency of selection	Allows for a more precise selection based on a wider range of criteria and weighting. Identifies the most suitable candidates for the role.	Evaluation based on simple criteria may be sufficient for basic screening but may not be as accurate when specific skills are needed. Simpler selection based on meeting legal requirements results in a less differentiated choice of candidates.

Partial conclusion

The comparison of the MEVYDO and MoH CR methodologies reveals significant differences in the approach to evaluating volunteers:

Complexity of criteria: The MEVYDO methodology focuses on a broad range of criteria, including not only basic requirements but also specialized aspects such as professional qualification, length of practice, and a driver's license. In contrast, the MoH CR methodology focuses only on basic criteria (age, health eligibility, and criminal integrity), making it simpler but less comprehensive. Age is indirectly included in the MEVYDO methodology within professional qualifications, while the MoH CR methodology explicitly assesses age as a separate criterion, requiring a minimum age of 15 years.

Weighting of criteria: MEVYDO allows for the weighting of criteria, which ensures flexibility and customization of the evaluation to meet the organization's specific needs. The MoH CR methodology does not involve weighting and considers all criteria equally important, which simplifies the process but reduces flexibility.

Use of sophisticated methods: MEVYDO employs the advanced TOPSIS method, which enables detailed and numerical assessment of candidates. The MoH CR methodology is limit-

ed to basic evaluation without advanced methods, which may restrict detailed analysis.

Flexibility and adaptability: MEVYDO offers flexible settings and adjustments to criteria, allowing for better responses to specific needs. The MoH CR methodology is less flexible and focuses on meeting basic legal requirements without the possibility of adjustments.

Accuracy and efficiency of selection: MEVYDO provides more accurate selection due to a broader spectrum of criteria and the possibility of weighting them. Conversely, the MoH CR methodology offers a simpler and less differentiated selection, which may be sufficient for basic screening but might not be ideal for situations requiring specific skills.

Overall, the MEVYDO methodology is more complex and detailed, allowing for more precise and targeted volunteer selection, while the MoH CR methodology provides a simpler and quicker approach based on basic legal requirements.

Discussion

The use of volunteers is a key element in building the capacity and preparedness of the healthcare system for emergen-

cy situations. International studies on volunteering suggest that volunteers enable the expansion of services in hospitals (Connors, 2011) and improve services by supporting staff and adding value to the care provided (Jones, 2004). Volunteers contribute to cost savings, positively impact the quality of care and patient satisfaction, and alleviate some of the workload from staff (Hotchkiss et al., 2009). In their study, Pirani et al. (2022) examine the challenges of managing volunteers during the COVID-19 pandemic in Iran. They recommend implementing effective strategies for managing, recruiting, and organizing volunteers. They emphasize the importance of the volunteer selection process, which includes preparing a database of volunteer information, planning needs assessments, creating a mechanism for recruitment and organization, and ensuring effective monitoring and tracking of their activities. These steps can contribute to better utilization of volunteer capacity and effective management in crisis situations.

The implementation of the MEVYDO methodology aligns with the recommendations of Pirani et al. (2022) and represents a systematic approach to volunteer selection, including the preparation of a database of information, planning needs assessments (requirements), and creating a mechanism for effective recruitment and organization.

The proposed MEVYDO methodology is advantageous compared to the existing MoH CR methodology for several reasons.

Comprehensive multi-criteria evaluation: MEVYDO takes into account a wide range of criteria, including not only basic requirements such as health eligibility and criminal integrity but also other important aspects like professional qualification, length of experience, volunteer costs, and a driver's license. This comprehensive approach provides a more thorough assessment of each candidate's suitability. Jannat et al. (2021) consider detailed assessment of volunteer suitability based on their abilities as a key factor in the hospital's response to emergencies.

Criteria for evaluation were identified based on a Delphi study conducted with an expert group. This empirical foundation ensures that the selected criteria are not only relevant but also based on professional consensus (Methodology). In contrast, the MoH CR methodology considers only basic criteria (health eligibility, criminal integrity, and age), which may lead to a simpler but less differentiated selection of candidates.

Criteria weighting: The MEVYDO methodology employs weighting methods, such as Saaty's method, which allows for the establishment of the relative importance of each criterion and thus reflects the priorities of the hospital. The MoH CR methodology does not offer this flexibility, as all criteria are considered equally important, which may not always align with the specific needs of a given selection.

Use of sophisticated decision-making methods: MEVYDO utilizes multi-criteria decision-making methods, specifically the TOPSIS method, which allows for the evaluation of candidates based on their distance from the ideal and worst possible outcomes. This method provides a more sophisticated way to compare candidates, considering not only the results achieved but also how close or far they are from the ideal candidate. The MoH CR methodology uses a simpler selection process that does not involve complex calculations or multi-level evaluations, which may lead to less precise results in selecting the best candidate.

Flexibility and adaptability: The MEVYDO methodology allows for adjustments based on current needs, such as modifying aspirations (minimum requirements) for individual criteria or changing the weights of criteria according to context.

This means it can be used for different types of volunteers and situations. MoH CR is less flexible and more focused on meeting basic legal requirements, which may be sufficient for basic volunteer positions but inadequate for more complex needs that require a broader range of skills and experience.

Greater accuracy in selection: By evaluating multiple criteria and their weighting, MEVYDO enables a more detailed differentiation of candidates who meet the basic conditions but have various other strengths, such as professional expertise (field education), experience, or low costs. This increases the chance of selecting the most suitable volunteer. MoH CR, with its focus on a few criteria, cannot distinguish between candidates as finely, which may lead to less precise selection. Alexander's (2010) study emphasizes that education is crucial for enhancing volunteer effectiveness and satisfaction. The study notes that the influence of education and training is fundamental for improving volunteer profiles, increasing job satisfaction, and ensuring better effectiveness of the emergency services they provide. Thus considering criteria such as education and qualifications appears to be an important aspect in selecting volunteers, as their professional education and prior experience can significantly contribute to higher quality and efficiency of the services provided.

Additional strengths of the proposed MEVYDO methodology include:

High level of systematics and objectivity: MEVYDO introduces a structured and systematic approach to the selection process, ensuring that evaluations are conducted based on carefully defined criteria and weighting. This minimizes subjective influences and ensures an objective assessment of all candidates.

Transparency: Clearly defined criteria and their weighting make the process understandable and the results easily justifiable. Transparency is crucial for the legitimacy of decisions, ensuring that all stakeholders understand how decisions were made and which factors were considered.

Selection optimization: The TOPSIS method, which identifies candidates based on their similarity to the ideal solution, increases the likelihood that selected volunteers will best meet the specific needs of the hospital during emergency situations. TOPSIS provides detailed and quantitative evaluations that help select candidates who best align with the requirements and expectations.

On the other hand, the use of the MEVYDO methodology may present several risks that need to be considered and managed to minimize negative impacts on the decision-making process and overall effectiveness. Implementing sophisticated decision-making methods can be complex and time-consuming. Streamlining and simplifying methodological steps, along with the use of advanced software tools, can significantly enhance calculations and analysis, contributing to accelerating the entire process and mitigating potential issues.

For the selection of volunteers, online forms can be effectively utilized to simplify information gathering and administrative processes. Recommended tools include Google Forms, Microsoft Forms, JotForm, and Typeform, which facilitate easy creation and management of forms. Forms should be published on the hospital's website in the volunteer section, on the hospital's social media platforms (e.g., Facebook, LinkedIn, Twitter), through email campaigns to the contact database and collaborating organizations, and in partnership with local non-profit organizations and volunteer centers to reach potential applicants. Responses will be collected automatically through the form platforms, which will ensure re-

al-time data collection. The data can be exported to spreadsheets, such as Google Sheets or Microsoft Excel, and analyzed using analytical tools for sorting and evaluating responses. The analysis process involves filtering responses to remove incomplete or irrelevant applications and assessing responses based on established criteria. The pre-selection of candidates includes automated emails to confirm receipt of applications and personal emails for further communication. Automated responses inform candidates about the acceptance of their application and the next steps, while invitations are sent to selected candidates. The evaluation and selection of candidates involve analyzing form responses (Microsoft Excel provides tools for structured analysis and evaluation using multi-criteria decision-making methods).

For these methods to function correctly, it is crucial to have high-quality and detailed data about the volunteers. If the data on candidates is incomplete, outdated, or incorrect, it may lead to erroneous conclusions. To minimize this risk, it is essential to ensure reliable and up-to-date data by implementing mechanisms for data verification and conducting regular audits of data sources. Regular data collection and evaluation of volunteers' contributions and impact on the hospital are important to ensure that they are optimally utilized and their work is properly recognized (Hotchkiss et al., 2009). Subjective judgments can lead to biased results, especially when using Saaty's method for pairwise comparison of criteria or when determining the ideal and least suitable solution in TOPSIS. Although both methods are designed to be as objective as possible, decision-making is still influenced by the human factor. Azman's study highlights the impact of subjective decisions on the results of multi-criteria decision-making processes. From these findings, he recommends using methodologies that can improve the accuracy of subjective weight assignments, such as multi-level evaluation or consensus among multiple experts (Azman et al., 2023). The MEVYDO methodology uses Saaty's method to identify and evaluate criteria based on expert consensus from a Delphi study, thereby mitigating potential subjectivity.

The methodology assumes that the structure of the decision-making process will remain the same throughout the decision-making period. However, in the dynamic environment of emergency situations, conditions can change rapidly. Regular revision and updating of criteria and their weights, as well as the implementation of mechanisms for quick adaptation to new circumstances, can help mitigate this risk.

Limitations
The presented work focuses exclusively on the initial step of volunteer selection, which serves to differentiate candidates based on fundamental eligibility criteria. These criteria establish the minimum requirements that applicants must meet to be considered suitable for volunteering in a healthcare facility. The article does not aim to address the comprehensive volunteer selection process, which includes multiple stages of filtering (e.g., interviews, training, probation periods). The potential omission of additional filtering stages in volunteer selection poses a risk that applicants may be incorrectly assigned to roles that do not align with their actual abilities, skills, experience, or expectations. This can lead to inefficiencies, reduced volunteer satisfaction, and lower quality of services provided.

Conclusion

The selection of volunteers is a critical element of volunteer management and requires a clearly defined program and methodology. To ensure that volunteer selection is as effective as possible, it is important to establish clear requirements and criteria that will serve as the foundation for selecting and utilizing volunteers. Implementing multi-criteria evaluation methods, such as Saaty's method and the TOPSIS (Technique for Order Preference by Similarity to Ideal Solution) method, contributes to systematic and objective decision-making in volunteer selection, thereby enhancing the effectiveness of their involvement in hospitals during emergencies.

The proposed methodological approach for selecting volunteers will be validated through empirical testing in the form of pilot testing. The developed selection model will be applied to a smaller group of volunteers in a real environment, and the efficiency of the selection process will be monitored. Simultaneously, feedback from users, volunteer coordinators, and the volunteers who have gone through the selection process will be evaluated.

Ethical aspects and conflict of interest
The authors have no conflict of interest to declare.

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