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Barriers Affecting Nurses Engagement in Continuing Education Programs in Duhok Governorate: A Cross-Sectional study

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ABSTRACT:

Background: Continuing education is a significant for sustaining nurses' professional competence, improving the safety and quality of patient care, and updating clinical knowledge and skills. However, nurses may face organizational and personal barriers that limit their participation in continuing education program.

Aim: This study aimed to assess the barriers affecting nurses' engagement in continuing education programs and to explore their attitudes toward continuing education in Duhok Governorate.

Methods: A descriptive cross-sectional study was conducted among 182 nurses at Azadi teaching and Hevi pediatric teaching hospitals in Governorate of Duhok from October 2025 to May 2026. participants were chosen using a convenience sampling technique. Data collection was conducted by using self-administered questionnaire consisting of three parts: socio-demographic characteristics, personal and organizational barriers, and attitude toward continuing education. Data were analyzed using SPSS version 23. A p value of <0.05 was measured statistically significant.

Results: The majority of nurses were between 30 and 40 years, female, married, and held diploma degree. Most of them working in the rotating shifts (59.4%) and 64 % had participation in continuing education previously. Difficulty in managing time (66.0%) and organizational barriers mainly shifting schedules and heavy workload (72.0%) were the obstacles. Despite these barriers, nurses held a positive attitude toward continuing education particularly it is importance in updating knowledge and skills (91.8%) and improving care of patients (91.2%).

Conclusion: The study concluded that nurses held a positive attitude toward continuing education but participation was limited by several factors such as heavy workload, time limitation, rotating of shifts and limited opportunities. Enhancing support from organization, accessible continuing education program easily and ensuring designated time for education may improve participation.

1. INTRODUCTION

Continuing education (CE) and continuing professional development are an important aspect of nursing practice, allowing nurses to update practical knowledge and skills and also to sustain professional competences. Requirements of Evidence based practice, Advancement of technology, increase of patient care complexity and changing policies of health care have established lifelong learning obligation as a professional responsibility for nurses worldwide. Engagement in continuing education provide

higher quality of care, patient safety, better informed nurses in clinical decision making and increase job satisfaction or professional fulfillment among nurses (Purvis, 2025; Wehabe et al., 2024).

Nurses play an important role in delivering and represent the largest group of health care services. Therefore, preserving their professional skills through ongoing education is important for gaining results of healthcare like delivering patient care. Many Studies have shown that continuing education programs engagement improve critical thinking, confidences, knowledge and skills of nurses. which indicates that higher quality of care and better organizational performance (Yu et al., 2022; Pool et al., 2021). In addition, continuing education promotes development of leadership skills, facilitates career growth and supports retain staff within organizations of healthcare.

Despite the benefits of involvement in continuing education among nurses remains inadequate in many countries. Researches have revealed that numerous barriers like financial, organizational, educational and personal barriers that prevent nurses from participation in continuing professional development activities. Barriers have encountered frequently include shortages of staff, limitation of financial resources, heavy workload, obligation of families or responsibilities, restricted access of educational materials, lack of time, and inadequate encouragement from institutions (Shahhosseini & Hamzehgardeshi, 2014; Wehabe et al., 2024). These obstacles influence nurses negatively from improving their knowledge and skills addressing current healthcare demands.

New researches continuously focus on these barriers across various setting of healthcare. One of study has been conducted in Ethiopia reported that inadequate support from healthcare organizations, pressure of workload, restricted opportunities to arrive educational programs significantly decreased participation of nurses in continuing professional development activities (Wehabe et al., 2024). in the same line, Pavloff et al. (2024) revealed that limitation of staff, isolation from geographical area, and constrained availability of educational resources were the biggest challenges among nurses' lives in rural area. Moreover, rapid progression in healthcare, mainly technology-based healthcare and transformation of digital tools have introduced new educational requirements that necessitate for nurses to deliver high quality of care (Tischendorf et al., 2024).

Continuing education remains the recognized strategies among healthcare organizations to invest in growth of workforce. But the effective implementation of programs related to education depends not only on their accessibility but also on ability of nurses and motivation to participate. Identifying the barriers that effect nurses' engagement is important for designing effective educational programs and supportive organizational policies. Notifying these obstacles can support administrator of healthcare to make a strategy that enhance opportunities for nurses to access continuing education and strengthen professional competency within institution of healthcare (Ait Ali et al., 2023)

In the Kurdistan region of Iraq, particularly in Governorate of Duhok, Nurses face many professional demands as a result of expansion of healthcare system, rising expectation of patients and constant progression in clinical practice. However, there is lack of evidence based about barriers that affecting nurses' participation in continuing education program. Researches have been showed in different countries, their results might not represent the local cultural, organizational and setting of healthcare. Consequently, exploring the barriers that impact nurses' contribution in continuing education program within governorate of Duhok is necessity to deliver evidence based for educational planner, managers of nursing and healthcare policymakers.

Accordingly, the aim of this study to find the barriers that affect nurses' engagement in continuing education in Duhok governorate and to assess factors associated with their participation. The results may contribute to the development of actual strategies that encourage participation in continuing education and increase quality of nursing care in clinical practice and services in healthcare region.

This study aims to assess the barriers affecting nurses' engagement in continuing education programs and to examine the attitude of nurses toward continuing education in Duhok governorate.

2. MATERIALS AND METHODS

2.1 Study Design and Setting

A descriptive cross-sectional study was conducted to evaluate the barriers influencing nurses' involvement in continuing education programs in the Governorate of Duhok, Kurdistan Region of Iraq. The study was conducted at Hevi Pediatric Teaching Hospital and Azadi Teaching Hospital from October 2025 to May 2026.

2.2 Study Population and Sampling

The total number of nurses who participated in the study was 182. The largest number was recruited from Azadi Hospital (150 nurses), and the smallest number from Hevi Hospital (32 nurses). Participants were selected using a convenience sampling technique and were recruited from multiple departments and clinical units within the two hospitals.

2.3 Study Instrument

A structured, self-administered questionnaire was used for data collection, completed by the nurses themselves. The questionnaire was developed following an extensive review of the related literature and consisted of three parts: socio-demographic information of participants, barriers affecting nurses' participation in continuing education programs, and nurses' attitudes toward continuing education. The barriers were classified into institutional and personal barriers. A five-point Likert scale was used to rate participants' responses, ranging from strongly agree (5) to strongly disagree (1).

The questionnaire was reviewed by a panel of six experts in nursing and medical sciences to ensure content validity. A pilot study was conducted prior to data collection to assess the feasibility, reliability, and clarity of the instrument, and necessary modifications were made based on the feedback obtained. Nurses who participated in the pilot study were excluded from the final sample.

2.4 Data Collection Procedure

Data collection was carried out during regular working hours after obtaining permission from the administration of the selected hospitals. Nurses were informed of the study's objectives and purpose, and written informed consent was obtained from each participant prior to completing the questionnaire. Anonymity and confidentiality were guaranteed throughout the study.

2.5 Statistical Analysis

Data were coded and entered into the Statistical Package for Social Sciences (SPSS), version 23, for analysis. Descriptive statistics, including frequencies and percentages, were used to summarize the data. The Chi-square test was used to assess the significance of differences in responses, with a p-value less than 0.05 considered statistically significant.

3. RESULTS AND DISCUSSION

The results of current study showed that most of participants were between aged 30 and 34 years old (33.5%), followed by group of age 25 to 29 years (28.0%), which is indicating that nursing staff mostly consists of young professionals in the early stages of their careers. This trend aligns with a current study representing that most of participants in hospitals are under 35 years old and are the most engaged group in activities of continuing professional development (Labraj et al., 2022). Female represented 54.4% of the sample, slightly exceeding the 45.6% of the male in the sample. This distribution reflects worldwide trends, where nursing is widely as a female-dominated profession globally (World Health Organization, 2025). Over than half of the nurses were married (55.5%), These results agree with previous research indicating that married nurses found the common within settings of hospital and commonly encounter family commitments that influence their contribution in continuing education (Alshammari & Alenezi, 2023; Labrague et al., 2022). Regarding background of nurses' education, the majority of nurses held a diploma in nursing (52.2%), whereas (37.9%) had bachelor's degree in nursing. This distribution of educational qualification reflects designs noticed in numerous countries of Middle Eastern, where nurses with qualification of diploma degree still continue a significant part of the clinical workforce despite the rise in university level of nursing education. (World Health Organization, 2025). The highest proportion of nurses worked in the medical wards of hospitals (36.8%), with the next main group after medical wards as working in the emergency department (25.8%), which is constant with prior hospital-based studies representing that these units need a huge number of nurses due to higher volume of patients and pressure of work (Labrague et al., 2022). So, majority of participants (59.4%) were working in the rotating shift, this preparation in critical care environment which has been associated with decreased chances of continuing professional development because of incompatible schedules, high demands of work and fatigue (Jang, 2022). Regarding experience of clinical practice, one-third of nurses had 4 to 6 years of experience (28.6%) and (28.0%) had 7 to 10 years of clinical experience, demonstrating that the workers mainly comprise of nurses with moderate levels of qualified tenure. This distribution is comparable to current worldwide results amongst hospital nursing staff (Labrague et al., 2022). Most of the respondents were nurses' staff (91.2%), while supervisors and head of nurses represented only a small proportion. This distribution mirrors the organizational structure of hospitals, where staff nurses consider the largest segment of the nursing workforce in charge for patients care directly (World Health Organization, 2025).

The current research reveals that 64 % of nurse previously participated in continuing education (CE) programs while 36% never did. This indicates that a large percentage of nurses know the importance of professional development however a considerable proportion still has not participated in CE activities, indicating opportunities to improve their activity. This result is in agreement with the findings of Zarei et al. (2022), who demonstrated that continuing education is viewed by nurses as an important means of improving clinical knowledge, critical thinking, and patient care outcomes. Their study also indicated that ongoing educational activities enhance nurses' confidence and encourage the application of evidence-based practice in clinical settings (Jahromi et al., 2022). Comparable findings were reported by Ríos and Mosca (2022), who observed that nurses were motivated to participate in continuing education because they believed it strengthened their professional knowledge, improved work performance, and created greater opportunities for career development. The authors also highlighted that both individual motivation and support from healthcare organizations were key factors influencing participation in educational programs (Ríos & Mosca, 2022). Nevertheless, the results that 36 % of the participants had never attended continuing education programs suggests that barriers affecting nurses to participation undergo a significant challenge. A study by Pool et al. (2021) stated that shortage of staff, limitation of time, heavy workload, financial costs and lack of adequate managerial support are the main factors restraining nurses' involvement in continuing professional development (Pool et al., 2021). Compared with reports from countries where continuing education is more strongly integrated into healthcare systems, the participation rate observed in the present study appears relatively lower. Younes et al. (2025) found that healthcare professionals showed higher participation in continuing education when institutions actively promoted learning through supportive policies, career incentives, and mandatory licensing requirements. Their findings demonstrate that organizational commitment is an important determinant of participation in continuing education (Younes et al., 2025).

The current study found that 50.86 % of respondents participated in continuing education program occasionally, infrequently attended 34.48%, and only 14.66% attended regularly. These results show that although nurses identify the importance of continuing education, regular contribution remains low. Similar conclusions have been stated in recent studies, where nurses contributed in continuing education intermittently because of shortage of staff, inadequate of managerial support, heavy workload and conflict of scheduling (Yu et al., 2022; Cashin & Wilson, 2023) In the same line, Ait Ali et al. (2023) reported that nurses were interested to progress their knowledge and skills but faced organizational barriers that reduced systematic attendance. A study has been done in Ethiopian found that insufficient institutional funding and workload were main barriers to contribution in continuing professional development (Wehabe et al., 2024). Overall, the results recommend that healthcare organizations should deliver financial support, educational time protection, schedule flexibility and support from managerial to improve regular participation of nurses in continuing educational program, thus enhancing qualified capability and quality of patient care.

The current study demonstrated that time management difficulties represent the most important personal barrier hindering nurses' participation in continuing education, with approximately two-third of respondents reporting that limited time prohibited their attendance. This result is similar with recent studies that identified rotating shifts, inadequate protected learning time and heavy workload are major obstacles to nurses continuing professional development (Pool et al., 2021; Zarei et al., 2022). Similar barriers, including high work stress and shortages of staff have been noted as factors limiting nurses' engagement in continuing education programs World Health Organization (WHO, 2023) which points out that staff shortage and increasing demand of clinical practice which limit healthcare professionals' chances for lifelong learning. Another important barrier which is reported by many participants is family responsibilities. This finding agrees with Zarei et al. (2022), who found that family obligations and balancing professional suggestively reduced nurses' contribution in continuing education activities, particularly among nurses who are married. In contrast, the majority of participants recognized that continuing education plays a beneficial role in career development representing a commonly positive attitude toward lifelong learning despite facing personal obstacles. This result supports the International Council of Nurses (ICN, 2021), which highpoints ongoing professional growth as important for improving quality of patient care, career progression and clinical capability. Lack of motivation and financial constraints were also reported by number of participants, but these less impactful than time related barriers. comparable findings have been observed by Pool et al. (2021) and Zarei et al. (2022), who concluded that organizational encouragement and financial support are a significant factor for rising nurses' engagement in continuing education programs. Conversely. most of participants did not consider personal illness, lack of confidence, or a preference for self-study as factors that limited their participation. These results suggest that practical barriers such as time constraints and family commitments have a greater impact than psychological and health related factors. Pool et al. (2021), found similar findings, revealing that nurses generally

prefer organized continuing education and are more motivated to participate when adequate support from the organization is provided.

The Results of study confirmed that organizational or institutional factors were the main barriers that affecting participation of nurses in continuing education. The commonest barriers were schedule of shifts, heavy workload, less availability of continuing education opportunities, insufficient funding, inadequate of paid leave, lack of proper acknowledgement and difficulties in administration. In contract, the majority of nurses rejected that the content of continuing education was unrelated to clinical practice, demonstrating a positive attitude toward the significance of continuing education program. The finding that lacks of time and heavy workload were major barriers align with the study of Wehabe et al. (2024), who reported that limitation of time, financial constraints and lack of resource regarding continuing professional development that significantly reduced engagement of nurses in professional development. In the same line Mlambo et al. (2021) found that limited time for study, heavy workload, inadequate funding and lack of administrative support were main challenges influencing nurses' involvement in continuing educational development. The current study also found that inadequate of financial support and restricted opportunities of continuing education are important barriers. This finding in the same line with Wehabe et al. (2024), who emphasized that inadequate financial support and limited access of continuing educational resources negatively affected nurses' participation in continuing education. Additionally, nurses stated that administrative barriers and inadequate of organizational acknowledgement affected their continuing education contribution. Previous evidence shows that encouragement from management, positive administrative culture and recognition systems are crucial facilitators for nurses' professional development (Mlambo et al., 2021). On the other hand, most nurses disagreed that the content of continuing education was unrelated to the clinical practice, indicating that nurses appreciate continuing education for increasing skills and knowledges. This results in the same line with Mlambo et al. (2021), who found that nurses perceive continuing professional development as an important element of qualified development and enhanced care of patients

The results showed that nurses generally held a positive attitude toward continuing education. Majority of participants agreed that continuing education enhance their knowledge and skills and improve care of patients. This result is consistent with Wehabe et al. (2024), who noted that nurses recognize continuing education as important for sustaining professional competence and increasing healthcare quality. Likewise, Cashin and Wilson (2023) highlighted that continuing education enhances nurses' knowledge, clinical skills, and evidence-based practice. The majority of participants agreed that workplace incentives, including promotion opportunities and financial rewards, would increase their willingness to contribute in continuing education programs. This aligns with the results of Wehabe et al. (2024), who found that incentives and support from organization play a positive role on nurses' involvement in continuing professional development. Conversely, most of nurses disagreed that online continuing education is as effective as face-to-face learning and did not support making continuing education obligatory for nursing license renewal. These attitudes may reflect concerns regarding the effectiveness of online learning and the additional workload associated with mandatory continuing education. Similar findings were noted by Mlambo et al. (2021), who emphasized that organizational barriers and nurses' learning preferences effect their attitudes toward continuing professional development.

Table 1. Distribution of socio-demographic data of participants

Demographic data	Class	Frequency N=182	Percent (%)
Age	18-24	20	11.0
	25-29	51	28.0
	30-34	61	33.5
	35-39	33	18.1
	40 and above	17	9.3
Gender	Male	83	45.6
	Female	99	54.4
Marital status	Single	77	42.3

	Married	101	55.5
	Divorced	3	1.6
	Widowed	1	.5
Educational level	Nursing school	9	4.9
	Nursing diploma	95	52.2
	Bachelor's degree	69	37.9
	Master degree	9	4.9
Department/unit	Emergency	47	25.8
	Medical	67	36.8
	Surgical	31	17.0
	ICU	20	11.0
	NICU	11	6.0
	Psychiatry	6	3.3
Shift type	Day only	67	36.8
	Night only	7	3.8
	Rotating	108	59.4
Years of clinical Experience	<1 year	5	2.7
	1-3 years	26	14.3
	4-6 years	52	28.6
	7-10 years	51	28.0
	>10 years	48	26.4
Job position	Staff nurse	166	91.2
	Head nurse	14	7.7
	Supervisor	2	1.2

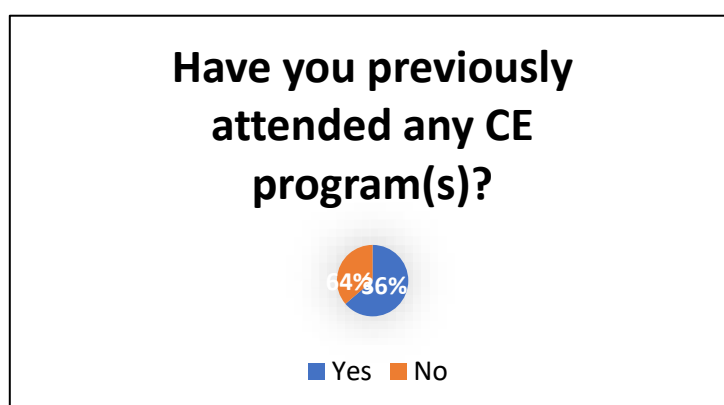


Figure (1): Previous Attendance of Nurses in Continuing Education Programs.

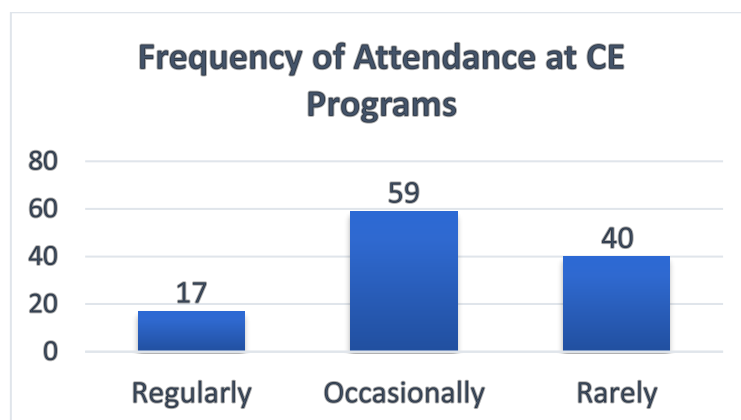


Figure (2): Frequency of Participation in Continuing Education (CE) Programs Among Attending Nurses.

Table (2): Personal Barriers affecting nurses Participation in Continuing Education program

	Frequency n=182 Percent					P value
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	
Family responsibilities limit my ability to attend CE	27 14.8	79 43.4	7 3.8	42 23.1	27 14.8	0.000
I lack motivation or interest in CE programs	34 18.7	56 30.8	19 10.4	48 26.4	25 13.7	0.000
Financial constraints prevent me from joining CE activities	22 12.1	72 39.6	12 6.6	49 26.9	27 14.8	0.000
I feel that CE will not significantly improve my career prospects	26 14.3	82 45.1	15 8.2	41 22.5	18 9.9	0.000
I lack confidence in attending professional courses (e.g., fear of exams/assessment)	81 44.5	83 45.6	7 3.8	8 4.4	3 1.6	0.000
Time management difficulties prevent me from participating	9 4.9	35 19.2	18 9.9	78 42.9	42 23.1	0.000
Health or personal illness limits my participation	39 21.4	121 66.5	3 1.6	17 9.3	2 1.1	0.000
I prefer self-study rather than formal CE programs	25 13.7	63 34.6	27 14.8	40 22.0	27 14.8	0.000

Table (3): Organizational Barriers affecting nurses' engagement in Continuing Education program.

	Frequency n=182 Percent					P value
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	
My workplace supports nurses' participation in CE programs	22 12.1	67 36.8	30 16.5	46 25.3	17 9.3	0.000
My manager/supervisor encourages staff to attend CE	26 14.3	62 34.1	32 17.6	54 29.7	8 4.4	0.000
There are limited CE opportunities available locally	11 6.0	35 19.2	30 16.5	82 45.1	24 13.2	0.000
CE programs are too expensive or lack funding support	13 7.1	35 19.2	13 7.1	66 36.3	55 30.2	0.000
My workload/shift schedule makes it difficult to attend CE	7 3.8	26 14.3	18 9.9	88 48.4	43 23.6	0.000
My workplace does not provide paid time off to attend CE	9 4.9	39 21.4	19 10.4	75 41.4	40 22.2	0.000
There is poor access to online CE resources (internet, devices).	28 15.4	47 25.8	18 9.9	67 36.8	22 12.1	0.000
CE program content is not relevant to my clinical practice	21 11.5	104 57.1	19 10.4	26 14.3	12 6.6	0.000
There is lack of institutional recognition (e.g., credit, promotion) for attending CE	5 2.7	59 32.4	25 13.7	70 38.5	23 12.6	0.000
Administrative/registration procedures for CE are complicated	10 5.5	28 15.4	22 12.1	75 41.2	47 25.8	0.000

Table (4): Attitude of nurses toward continuing educational program

	Frequency n=182 Percent					P value
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	
Continuing education is important for improving patient care	1 0.5	9 4.9	6 3.3	52 28.6	114 62.6	0.000
CE keeps me up to date with new nursing knowledge and skills	0 0.0	5 2.7	10 5.5	85 46.7	82 45.1	0.000
I am interested in participating in more CE programs	18	44	19	56	45	0.000

	9.9	24.2	10.4	30.8	24.7	
I believe CE should be mandatory for nursing license renewal	11 6.0	74 40.7	17 9.3	51 28.0	29 15.9	0.000
I feel satisfied with the quality of CE programs I have attended	1 0.5	17 9.3	64 35.2	85 46.7	15 8.2	0.000
Online CE (virtual courses) is as effective as face-to-face CE for my learning	46 25.3	95 52.2	13 7.1	15 8.2	13 7.1	0.000
I would attend CE if my workplace provided incentives (e.g., pay increase, promotion points)	7 3.8	31 17.0	13 7.1	50 27.5	81 44.5	0.000

4. CONCLUSION

The study concluded that nurses in Duhok Governorate held a positive attitude toward continuing education and recognized its importance for enhancing qualified competence and care of patients. However, nurses' participation in continuing education is mostly constrained by many organizational barriers, such as limited educational opportunities, heavy workload, rotating of shifts, and lack of institutional support. Management of time was the primary personal barrier that affects continuing education. Improving access to continuing education and increasing workplace support are crucial to rise engagement of nurses and professional development.

RECOMMENDATION

The study recommended that institutions of healthcare should offer consistent and available continuing education programs that accommodate nurses' work schedules. Administration of hospitals should reduce stress and workload, offer protected time for training, and provide financial and organizational support to encourage participation. Expanding local continuing education opportunities and recognizing nurses' educational achievements may further improve engagement. Future studies should evaluate the effectiveness of interventions aimed at increasing nurses' participation in continuing education.

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AUTHOR CONTRIBUTIONS

Wadyan Mirza: Conceptualization, Study Design, Writing – Original Draft, Corresponding Author.

Amar Khalid Saber: Methodology, Data Collection.

OmranAzeez Jibraeel: Data Collection, Formal Analysis.

Hajar Farman: Data Curation, Statistical Analysis.

Pelan Ramadhan: Investigation, Writing – Review & Editing.

Sirwan Jameel: Supervision, Writing – Review & Editing.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ETHICS STATEMENT

Ethical approval was obtained from the Scientific Research Ethics Committee of Shekhan College of Health and Medical Technology. Official permissions were also obtained from the General Directorate of Health in Duhok City and the administration of all participating healthcare facilities.

DATA AVAILABILITY STATEMENT

The datasets generated and/or analyzed during the current study are not publicly available due to confidentiality agreements with participating institutions but are available from the corresponding author (Wadyan Mirza, wadyan.mirza@dpu.edu.krd) upon reasonable request.

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