

Knowledge of Healthcare Giver Towards Pharmacovigilance: A Descriptive Study

Nasir Muwfaq Younis¹, Mahmoud Mohammed Ahmed², Rian Mahmood Ibrahim³

^{1,2,3}College of Nursing
/University of
Mosul/IRAQ

Abstract:

Pharmacovigilance is an essential area of public health, involving the detection, assessment, understanding, and prevention of adverse reactions to drugs and medication-related problems.

Methods: The study has been conducted in a period of six months extending from 10 /10/ 2024 to 1 /3/ 2025 in Mosul hospitals. Probability (simple random sample) was selected for the present study. A sample of Health care workers in Mosul hospitals. (166 Health care workers). The subject's acceptance to participate in the study was through the use of a specialized consent form.

Results: The study shows that most of the sample participating in the study amounted to 166 health care workers, that most of the study sample was from 20 to 29 years old, at a rate of 74.7%, and that the sample of female was higher than that of male by (59%), 47.6% of the sample whose residence was institution, Most of the sample was workplace (surgical), with moderate percentage (28.3%).

Conclusion: The findings reveal both strengths and areas for improvement in healthcare workers' knowledge regarding pharmacovigilance. While there is general awareness of pharmacovigilance principles, significant gaps remain, particularly in terms of formal training, understanding reporting procedures, and overcoming logistical barriers such as time constraints and accessibility

Key words: Knowledge, Healthcare Giver, Pharmacovigilance, A Descriptive Study

Corresponding Author: Nasir Muwfaq Younis[†], College of Nursing /University of Mosul/IRAQ

Copyright: © 2025 The Authors. Published by Vision Publisher. This is an open access article under the CC BY-NC-ND license (<https://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction

Pharmacovigilance is an essential area of public health, involving the detection, assessment, understanding, and prevention of adverse reactions to drugs and medication-related problems.⁽¹⁾ Adverse drug reactions (ADRs) are defined as any unintended noxious response to a drug that occurs at doses used normally in humans for prophylaxis, diagnosis, or therapy or to modify physiological function.⁽²⁾ Early detection of ADRs can prevent serious clinical outcomes, reduce the associated economic burden, and improve the public safety by signal detection and regulatory actions. Pharmacovigilance systems in hospitals provide essential information about medication use. They establish processes for using reported ADRs to modify, update, or develop therapeutic guidelines, develop risk management plans, and identify educational gaps regarding the use of medicines. A number of studies have assessed the knowledge, attitude and knowledge (KAP) of health-care providers toward pharmacovigilance and ADR reporting. The results vary widely according to the geographical region, type of health-care system, and health-care providers involved. Limited studies have been conducted in Arabic countries.⁽³⁾ The previous Iraq KAP study involved community pharmacists and some hospital pharmacists, but not physicians or nurses⁽⁴⁾. Furthermore, previous studies did not compare knowledge, attitude, and practice toward ADR reporting among different types of health-care providers. This is considered a limitation for the usefulness of previous KAP study results. The Hospital as general is a leading center in the Iraq, providing adult and pediatric patients with state-of-the-art and comprehensive care for all types of diseases. The aim of the study to assess the knowledge of healthcare giver towards pharmacovigilance.

Methods and Materials:

Study Design:

A descriptive study that conducted during the period of 10 /10/ 2024 to 1 /3/ 2025 in Mosul hospitals .

Study Setting:

The present study was conducted at Nineveh Governorate. It is a governorate in northern Iraq, with Mosul as its capital. Mosul is Iraq's second largest city, located 465 kilometers north of Baghdad. The sample was collected from Health care workers in mosul hospitals.

Data Collection Period:

The study has been conducted in a period of six months extending from 10 /10/ 2024 to 1 /3/ 2025 in Mosul hospitals.

Sample of the Study:

Probability (simple random sample) was selected for the present study. A sample of Health care workers in Mosul hospitals. (166 Health care workers). The subject's acceptance to participate in the study was through the use of a specialized consent form.

Steps of the study:

The interview was conducted to fill out the questionnaire with in Health care workers in Mosul hospitals included and each one of them needed approximately (15-20) minutes to complete the interviewing and answering the questionnaire.

Data collection Instrument:

The information of data was collected through a questionnaire used to assess the knowledge and attitudes of healthcare providers towards pharmacovigilance. The instruments of the study were composed of (2) parts,

Part One: Demographic characteristics that include (ages, class, gender, martial status, and residence).

Part Two: To assess the knowledge of healthcare providers towards pharmacovigilance. It consisted of (6) multiple choice questions, in two answer(Yes, No).

Statistical Analysis:

The Statistical Package for Social Sciences (SPSS) version 26 was used to analyze the statistical results. A descriptive approach was applied. Using percentages and frequencies to calculate student's demographic description characteristics⁽⁵⁻¹¹¹⁾.

Results:

Table (1): Distribution of Demographical Characteristics of sample (166)

Variables		Frequency	Percentage
Age	20-29	124	74,7
	30-39	28	16,9
	40-49	9	5,4
	50- more	5	3,0
<u>Total</u>		166	100,0
Gender	Male	68	41,0
	Female	98	59,0
<u>Total</u>		166	100,0
Academic achievement	Master's	4	2,4
	Bachelor's	76	45,8
	Institution	79	47,6
	Nursing preparatory	7	4,2
<u>Total</u>		166	100,0
Experience	Less than one year	62	37,3
	1-3	53	31,9
	3-5	16	9,6
	5-10	13	7,8
	10 years or more	22	13,3
<u>Total</u>		166	100,0
Workplace	Surgery	47	28,3
	Internal Medicine	20	12,0
	Adult Intensive Care Unit	11	6,6
	Pediatrics	9	5,4
	Pharmacy	52	31,3
	Emergency Department	12	7,2
	Other	15	9,0
<u>Total</u>		166	100,0
Hospitals	Mosul General	53	31,9
	Ibn-sina	57	34,3
	Al-jumhuri	56	33,7
<u>Total</u>		166	100,0
Specialty	Doctors	32	19,3
	Nursing	69	41,6
	Pharmacy	65	39,1
<u>Total</u>		166	100,0

Table No. 1 shows that most of the sample participating in the study amounted to 166 health care workers, that most of the study sample was from 20 to 29 years old, at a rate of 74.7%, and that the sample of female was higher than that of male by (59%), 47.6% of the sample whose residence was institution ,Most of the sample was workplace (surgical), with moderate percentage (28,3%).

Table(2): Healthcare Workers' Knowledge towards Pharmacovigilance (N=166)

Variables		Frequency	Percentage
Q1: Pharmacovigilance covers both adverse drug reactions and other drug-related problems such as medication errors	Yes	139	83,7
	No	27	16,3
Total		166	100,0
Q2: The difference between drug side effects and adverse events is clear to me	Yes	128	77,1
	No	38	22,9
Total		166	100,0
Q3: I often know when to report adverse drug reactions	Yes	152	91,6
	No	14	8,4
Total		166	100,0
Q4: Once I report any adverse drug reactions, I send them to the pharmacy department.	Yes	116	69,9
	No	50	30,1
Total		166	100,0
Q5: I know how to fill out the adverse drug reaction reporting form in the hospital	Yes	108	65,1
	No	58	34,9
Total		166	100,0
Q6: I know how to assess the severity of reported adverse drug reactions.	Yes	95	57,2
	No	71	42,8
Total		166	100,0

Table No. 2: The table above shows that the majority of health workers had good knowledge.

Discussion:

The majority of respondents were in the 20-29 age group (74.7%), followed by 30-39 (16.9%), and progressively smaller proportions in the older age brackets. This suggests that younger healthcare workers are more prevalent in this sample, which may reflect general trends in the workforce where younger generations dominate the healthcare profession. Study Insight: Studies have shown that younger healthcare professionals tend to be more adaptable to new concepts and technologies. Their higher presence in the sample might reflect greater openness to pharmacovigilance initiatives, though their lower levels of experience could also limit their understanding. The gender distribution is skewed towards females (59%), which is consistent with the global trend in nursing and healthcare sectors where women are the majority. Study Insight: The predominance of female workers in healthcare is well-documented. Research by the World Health Organization (WHO) indicates that women make up around 70% of the global health workforce, which might influence pharmacovigilance attitudes and practices, given their strong involvement in patient care. Academic Achievement: A substantial proportion (45.8%) had completed a bachelor's degree, followed by a significant group with nursing preparatory training (47.6%). A high percentage of respondents (83.7%) correctly identified that pharmacovigilance covers adverse drug reactions and medication errors. Most (77.1%) were aware of the difference between drug side effects and adverse events. However, knowledge gaps exist in more specific aspects, such as filling out ADR reporting forms (65.1%) and assessing the severity of ADRs (57.2%). Study Insight: The knowledge of pharmacovigilance among healthcare workers varies significantly. According to a study by^(112,113), healthcare workers often possess a basic understanding of ADR reporting but lack advanced knowledge on assessing severity or understanding the broader scope of pharmacovigilance. The gap in reporting form knowledge is also documented in multiple studies, where insufficient training or complexity of the reporting process hampers ADR reporting^(114,115) (Lazarou et al., 1998). A high percentage (91.6%) of healthcare workers knew when to report ADRs, but only 69.9% reported sending them to the pharmacy department. This suggests a lack of confidence or understanding in the reporting chain. Study Insight: Research indicates that healthcare workers may recognize the

importance of ADR reporting but face challenges when it comes to the actual practice, often due to confusion about the reporting system or lack of clear guidelines⁽¹¹⁶⁻¹²¹⁾. The reporting process is crucial, as the data collected can inform both clinical practices and future pharmacovigilance strategies.

Conclusion:

The findings reveal both strengths and areas for improvement in healthcare workers' knowledge regarding pharmacovigilance. While there is general awareness of pharmacovigilance principles, significant gaps remain, particularly in terms of formal training, understanding reporting procedures, and overcoming logistical barriers such as time constraints and accessibility.

Reference:

1. Mnawer MS, Younis NM. Effectiveness of an Educational Program in Improving Nurses' Knowledge Towards Communicable Diseases. *Salud, Ciencia y Tecnología-Serie de Conferencias*. 2025(4):1584.
2. Wahab MA, Younis NM. Efficacy of an Educational Program Based Intervention in Improving Nurses' knowledge Toward Radiation Protection Measures: A Randomized Controlled Trials. *Salud, Ciencia y Tecnología-Serie de Conferencias*. 2025(4):1585.
3. Taher AK, Younis NM. Impact of a Transtheoretical Model on Enhancing Electronic Hookah-Related Behaviors among Nurses. 2025
4. Ahmed MM, Ibrahim RM, Younis NM. Diabetic Distress among Patients with Type II: A Descriptive Study. *Advanced Biomedical Research*. 2025 Mar 1;14(1):23.
5. Taher AK, Younis NM. Impact of a Transtheoretical Model on Enhancing Electronic Hookah-Related Behaviors among Nurses. 2025
6. Younis NM, Ibrahim RM, Ahmed MM. Lifestyle of Elderly in Mosul Governorate: A Cross-Sectional Study. *Journal of Current Medical Research and Opinion*. 2024 Sep 1;7(09):3515-24.
7. Ibrahim RM, Ahmed MM, Younis NM. Apply the Health Beliefs Model among students to Enhancing Intentions: Randomized Control Trail. *Journal of Current Medical Research and Opinion*. 2024 Sep 1;7(09):3505-14.
8. Ibrahim RM, Ahmed MM, Younis NM. Using the Behavioral Motivation to Enhancing Behavior of Students Towards Addiction. *Journal of Current Medical Research and Opinion*. 2024 Jul 22;7(07):3337-44.
9. Bura'a LN, Younis NM. An Interventional Program on Nurses Knowledge and Practice towards Phototherapy in Neonatal Care Units. *Int J Membrane Sci Technol*. 2023 Jul 2;10(2):1428-32.
10. Younis NM. Evaluation the health lifestyle of kindergarten students at Mosul city/Iraq. *International Journal of Medical Toxicology & Legal Medicine*. 2023;26(1and2):148-52.
11. Younis NM. Prevalence of Electronic Hookah and Risk Factors among University Students in Mosul City/Iraq. *Int J Membrane Sci Tech*. 2023 Jul 2;10(2):1422-7.
12. Ahmed MM, Naji AB, Younis NM. Efficacy of an educational program based on health belief model to enhancing weight control behaviors among employees in the University of Mosul: a randomized controlled trial. *RevisBionatura*. 2023;8(3):28.
13. Younis NM, Ahmed MM, Dhahir NM. Knowledge and Attitude toward older adults among Nursing Students. *Signal*. 2012;84:70.
14. Mohammad FH, Noori LK, Younis NM. Assessment of Nutritional habits among Mosul University Students regarding breakfast. *Rawal Med J*. 2023 Mar 3;48(1):96.
15. Ibrahim RM, Ahmed MM, Younis NM. Mental health problems with aging: Across Sectional Study. *Journal of Current Medical Research and Opinion*. 2024 Aug 17;7(08):3454-61.
16. Younis NM, Ahmed MM, Ibrahim RM. Application the Beliefs Model to change the Beliefs Concerning the drug Abuse. *Journal of Current Medical Research and Opinion*. 2024 Aug 17;7(08):3445-53.

17. Ahmed MM, Younis NM, Abdulsalam RR. Assessment of changes in sleep habits in elementary students during covid_19 lockdown. *International Journal of Medical Toxicology & Legal Medicine*. 2022;25(1and2):76-80.
18. Adea MK, Lefta RM, Younis NM. Impact of psychosocial aspect parameters on psoriasis patients' quality of life at outpatient clinic in Al-Dewania City, Iraq. *Rawal Med J*. 2022 Dec 11;47(4):892.
19. Ibrahim RM, Ahmed MM, Younis NM. Modifications in Sleep Patterns During the COVID-19: Review of Subject. *Journal of Current Medical Research and Opinion*. 2024 Jul 25;7(07):3354-62.
20. Taher AK, Younis NM. Effect of a trans theoretical model in improving behaviors of health care workers related to electronic hookah in Mosul, Iraq. *Rawal Medical Journal*. 2023 Mar 3;48(1):228-.
21. Ibrahim RM, Idrees NH, Younis NM. Epidemiology of leukemia among children in Nineveh Province, Iraq. *Rawal Med J*. 2023 Mar 3;48(1):137.
22. Ali HA, Abbas FF, Younis NM. Mothers' knowledge and attitudes towards breastfeeding in Thi-Qar City, Iraq. *Rawal Med J*. 2023 May 27;48(2):514.
23. Ahmed MM, Ibrahim RM, Younis NM. Perceived Susceptibility toward Smoking among Students. *Journal of Current Medical Research and Opinion*. 2024 Jul 12;7(07):3217-25.
24. Ahmed MM, Younis NM, Dhahir NM, Hussain KN. Acceptance of Covid-19 vaccine among nursing students of Mosul University, Iraq. *Rawal Medical Journal*. 2022 Apr;47(2):254.
25. Abbas AS, Younis NM. Efficacy of Pender's Health Promotion-based Model on Intervention for Enhancing University of Mosul Hypertensive Employees' Eating Behaviors: A randomized Controlled Trial. *RevisBionatura*. 2022;7(3):35.
26. Younis NM, Mahmoud M, Ahmed A. University Students' Attitude Towards E-Learning. *Bahrain Medical Bulletin*. 2021;43(2):460-2.
27. Younis NM, Taher AK. Efficacy of Trans Theoretical Model Intervention for Improving Behaviors related to Electronic Hookah Smoking among Healthcare Workers in Mosul Hospital: A Randomized Control Trail. *Int J Membrane Sci Tech*. 2023 Jul 2;10(2):1433-9.
28. Younis NM. Epidemiology of Hepatitis B-virus in Nineveh province: Retrospective Study. *Int J Membrane Sci Technol*. 2023 Jul 2;10(2):1440-4.
29. Abbas AS, Younis NM. Assessing the effect Pender's Model in changing employees' Eating Behaviors suffer hypertension at Mosul University Iraq. *Pakistan Journal of Medical & Health Sciences*. 2022 Jul 29;16(06):476-.
30. Ayed AY, Younis NM, Ahmed MM. Comparison of infection severity of vaccinated and unvaccinated health workers with Corona Virus: A cohort study. *Journal of Education and Health Promotion*. 2023 Sep 1(1):336.
31. Younis N. Assessment of healthy lifestyle habits among Mosul university students. *Int J AdvNurs Stud*. 2014 Jul 1;3(2):69-73.
32. Hussein AA, Younis NM, Ahmed MM. Health Promoting Lifestyle profile Among Nursing Students in Mosul University. *International Journal of Psychosocial Rehabilitation*. 2020;24(09).
33. Younis NM, Naji AB. Assessing the effect of an educational intervention based on health belief model on preventive behaviors of addiction. *Pakistan J Med Health Sci*. 2021;15(3):813-7.
34. Younis NM, Naji AB. Evaluation of preventive behaviors of addiction among students: Application of health belief model. *Indian J Forensic Med Toxicol*. 2021 May 17;15(4):1273-8.
35. Bura'a LN, Younis NM. Educational Program of Nurses Practices Towards to Phototherapy at Neonatal Care Units. *Pakistan Journal of Medical & Health Sciences*. 2023 Jun 9;17(04):530-.
36. Younis NM, Naji AB. The effect of health education based on the health belief model about changing the belief related to substance use among university students in Mosul city-Iraq. *Annals of the Romanian Society for Cell Biology*. 2021 May 4:14687-98.

37. Younis NM, Hussein AA, Ahmed MM, Younis NM. Quality of life and occupational hazards among cement factory workers in Mosul city. QoL and Occupational Hazards among Cement Factory Workers. 2021;24(2):1-8.
38. Younis NM. Assessment for Mortality Rate Children Under Five Years in Mosul City. Journal of Kufa for Nursing Science Vol. 2014;4(1).
39. Jasem WM, Younis NM. Assessment of Nurses' Performance Regarding Nursing Documentation in Pediatric Wards at Mosul Hospitals. Journal of Current Medical Research and Opinion. 2024 Apr 12;7(04).
40. Ahmed AS, Younis NM. Assessment of Nurses Knowledge Regarding Blood Exchange Transfusion at Mosul Neonatal Care Units. Journal of Current Medical Research and Opinion. 2024 Apr 12;7(04):2285-8.
41. Younis NM, Naji A. Efficacy of Health Belief Model-Based Training in Changing the Beliefs about Substance use. Kufa Journal for Nursing Sciences. 2021 Jun 25;11(1):221-9.
42. Ahmed MM, Younis NM, Hussein AA. Association between Internet Addiction and Sleep disturbance Among Nursing Students. International Journal of Psychosocial Rehabilitation. 2020;24(09).
43. Younis NM, Salih YH. Nursing Students' Knowledge about Caring for the Elderly. Journal of Current Medical Research and Opinion. 2024 Apr 15;7(04):2320-7.
44. Abed SM, Suleiman AA, Ahmed SS, Younis NM, Ahmed MM. Road Traffic Accident Characteristics And Injury Outcomes Among Victims In Mosul City. Journal of Pharmaceutical Negative Results. 2023 Sep 15;4102-8.
45. Saad WI, Kumait AS, Younis NM. Workplace challenges and violence against nurses: subject review. Pakistan Journal of Medical & Health Sciences. 2023 Mar 2;17(01):509-.
46. Taher AK, Younis NM. Evaluation Of Processes Of Change Related To Trans Theoretical Model Of Enhancing Behaviors Of Healthcare Workers User Electronic Hookah. Journal of Pharmaceutical Negative Results. 2023 Mar 16:3190-3.
47. Alkaisy MS, Ahmed SS, Alsyan MS, Suleiman AA, Younis NM, Ahmed MM. Post-Traumatic Stress Disorder Following Wars and Repression at Mosul City-Iraq. Indian Journal of Forensic Medicine & Toxicology. 2021 May 17;15(3):1240-5.
48. Younis NM, Ali MT, Hasan MK, Khalaf MS, Abdullah MN, Ahmed YL, Abdulkadir MN. Knowledge and attitude of collegians at university in Mosul towards the prevention and control of COVID-19. Turkish Journal of Physiotherapy and Rehabilitation. 2021:7975-8.
49. Younis NM, Ahmed MM. Knowledge and Compliance with Standard Precautions among Nursing Students in Mosul University. Assiut Scientific Nursing Journal. 2014 Jun 1;2(3):152-9.
50. Younis NM, Ahmed MM, Hussein AA. Epidemiology Of Deaths From Injuries In Nineveh Governorate (2008_2012). kufa Journal for Nursing sciences. 2014;4(2).
51. Younis NM, Ahmed MM. knowledge and Attitude of Nursing Students' towards Palliative Care. Journal of Current Medical Research and Opinion. 2024 Apr 20;7(04):2345-53.
52. Younis NM, Ahmed MM. Road Traffic accidents in Nineveh Province (2017_2021): A retrospective study. Journal of Current Medical Research and Opinion. 2024 Apr 20;7(04):2354-62.
53. Ibrahim RM, Younis NM, Ahmed MM. Knowledge and Attitude of University Students Regarding Rhinoplasty. Journal of Current Medical Research and Opinion. 2024 May 1;7(05):2411-9.
54. Hussein AA, Younis NM, Ahmed MM. Assessment of Diabetic Self-Management among Patients with Diabetic Type II. Journal of Current Medical Research and Opinion. 2024 May 1;7(05):2402-10.
55. Ahmed MM, Ibrahim RM, Younis NM. Nursing Students' Attitudes about Organ Donation in University of Mosul/Iraq. Journal of Current Medical Research and Opinion. 2024 May 1;7(05):2430-7.
56. Ahmed MM, Ibrahim RM, Younis NM. Assessment of Sleep Habits among Nursing Students in Mosul City/Iraq. Journal of Current Medical Research and Opinion. 2024 May 1;7(05):2420-9.

57. Ahmed MM, Ali Hussein A, Youns NM. Knowledge, attitude, and practice (KAP) of voluntary blood donation among nurses in Mosul Teaching Hospital. *Mosul Journal of Nursing* (Print ISSN: 2311-8784 Online ISSN: 2663-0311). 2017 Jul 1;5(1):24-32.
58. Ahmed MM, Ibrahim RM, Younis NM. Assessment of Nursing Students' Attitudes Toward Obese Individuals. *Journal of Current Medical Research and Opinion*. 2024 May 4;7(05):2468-76.
59. Younis NM, Ibrahim RM, Ahmed MM. Apply Health Beliefs Model Towards of Substance Abuse. *Journal of Current Medical Research and Opinion*. 2024 May 4;7(05):2460-7.
60. Ibrahim RM, Ahmed MM, Younis NM. Prevalence of COVID-19 among Students in Mosul University. *Journal of Current Medical Research and Opinion*. 2024 May 4;7(05):2477-88.
61. Younis NM, Ahmed MM, Dhahir NM. Knowledge and Attitude toward older adults among Nursing Students. 2021. *PJM HS*.;15(3).
62. Ahmed MM, Ibrahim RM, Younis NM, Ahmed SS. Nurses Knowledge and Practice about adverse Effects Following Immunization at Primary Health Care Centers in Mosul City. *Journal of Current Medical Research and Opinion*. 2024 May 15;7(05):2536-42.
63. Hussein AA, Ahmed MM, Younis NM, Ibrahim RM. Apply Pender's Health Promotion Towards Hypertension of Employees in Mosul City/Iraq. *Journal of Current Medical Research and Opinion*. 2024 May 15;7(05):2529-35.
64. Ibrahim RM, Ahmed MM, Younis NM. Benefits and Challenges of Healthy Dieting among Nursing Students. *Journal of Current Medical Research and Opinion*. 2024 May 15;7(05):2521-8.
65. Allawi RH, Ahmed MM. Assessment of Nurse's Knowledge Towards Diabetic Ketoacidosis among children in Mosul City/Iraq. *Rawal Medical Journal*. 2023 Apr;48(2).
66. Allawi RH, Ahmed MM. Assessment of Nurses' Practices Towards Children with Diabetic ketoacidosis. *Pakistan Journal of Medical & Health Sciences*. 2023 Jun 2;17(04):444-.
67. Kaleel MI, Mahmoud MA. Assessment of Mothers' Knowledge about Breastfeeding Premature Infants in Mosul city. *Journal of Current Medical Research and Opinion*. 2024 Apr 19;7(04):2328-33.
68. Mahmoud MM, Ahmed MM. Assessment of Self-Management Behavioral Skill among Patients with Diabetic type II in Mosul City. *Journal of Current Medical Research and Opinion*. 2024 Apr 19;7(04):2334-9.
69. Ibrahim RM, Al Hafidh NM. Acute Diarrhea in Exclusively Breast Fed Infants in relation to Zinc Level. *Pak J Med Health Sci*. 2021;15:1431-5.
70. Younis NM, Ahmed MM, Abdulsalam RR. Assessing quality of life in palliative care. *International Journal of Medical Toxicology & Legal Medicine*. 2021;24(3and4):115-8.
71. Muwfaq YN, Ahmed MM, Abdulsalam RR. Assessing Quality of Life in Palliative Care. *Bahrain Medical Bulletin* 2021;43(3):594-6.
72. Ahmed MM, Younis NM, Hussein AA. Prevalence of tobacco use among health care workers at primary health care centers in Mosul City. *Pakistan Journal of Medical and Health Sciences*. 2021;15(1):421-4.
73. Younis NM, Ahmed MM, Hussein AA. Nurses' knowledge, attitude and practice towards preparedness of disaster management in emergency of mosul teaching hospitals. *Medico-Legal Update*. 2020 Jul 1;20(3):775-9.
74. Naji AB, Ahmed MM, Younis NM. Adherence the preventive measure against for covid-19 among teachers at university of mosul. *International Journal of Medical Toxicology & Legal Medicine*. 2021;24(3and4):273-7.
75. Ibrahim RM, Ahmed MM, Younis NM. Correlations Between Health Beliefs Model and substance use among University students. *Journal of Current Medical Research and Opinion*. 2024 Jun 12;7(06):2810-8.
76. Ahmed MM, Ibrahim RM, Younis NM. Enhancing Weight Control Behaviors among University Employees: Health Beliefs Model. *Journal of Current Medical Research and Opinion*. 2024 Jun 12;7(06):2801-9.

77. Younis NM, Ahmed MM, Ayed AY. HIV knowledge and preventive Standards Precautions Among Healthcare Workers in Blood Transfu-sion Centers.
- 78.Younis NM, Ibrahim RM, Ahmed MM. Health Problems Related to Quality of Life among Aging in Iraq. Journal of Current Medical Research and Opinion. 2024 Jun 24;7(06):3015-24.
- 79.Younis NM, Ibrahim RM, Ahmed MM. Independency Domains Among Old Age in Mosul City/IRAQ. Journal of Current Medical Research and Opinion. 2024 Jun 24;7(06):3025-33.
- 80.Ayed AY, Younis NM, Ahmed MM. Teachers' knowledge about communicable disease control at primary schools in Mosul City: A cross-sectional study. International Journal of Academic Medicine. 2024 Apr 1;10(2):75-9.
- 81.Younis NM, Ibrahim RM, Ahmed MM. Life of adaption among Old Adults in Nineveh Governorate. Journal of Current Medical Research and Opinion. 2024 Jul 1;7(07):3099-106.
82. Younis NM, Ibrahim RM, Ahmed MM. Personal Hygiene Towards Old Age. Journal of Current Medical Research and Opinion. 2024 Jul 1;7(07):3107-113.
83. Younis NM, Ahmed MM, Dhahir NM. Knowledge and Attitude toward older adults among Nursing Students. 2021.
- 84.Ibrahim RM, Ahmed MM, Younis NM. Physical activity among Elderly in Mosul City/IRAQ. Journal of Current Medical Research and Opinion. 2024 Jul 5;7(07):3149-54.
- 85.Ibrahim RM, Ahmed MM, Younis NM. Psycho-Social Aspects Among Elderly in Nineveh Governorate. Journal of Current Medical Research and Opinion. 2024 Jul 5;7(07) : 3155-63.
86. Ibrahim RM, Ahmed MM, Younis NM. Perceived Benefits Related to Drug Abuse among Students. Journal of Current Medical Research and Opinion. 2024 Jul 8;7(07):3179-86.
87. Ibrahim RM, Ahmed MM, Younis NM. Perceived Barriers for substance Abuse among Students. Journal of Current Medical Research and Opinion. 2024 Jul 8;7(07):3171-8.
88. Ibrahim RM, Ahmed MM, Younis NM. Correlation Between HBM and Weight Control among Employee University. Journal of Current Medical Research and Opinion. 2024 Jun 17;7(06):2870-8.
- 89.Al-Ghurairi SA, Younis NM, Ahmed MM. Prevalence of weight gain among students of Mosul University, Iraq during quarantine 2020. Rawal Medical Journal. 2022 Jul;47(3).
90. Ahmed MM, Younis NM, Hussein AA. Violence Towards Nurses Staff at Teaching Hospitals in Mosul City. Indian Journal of Forensic Medicine & Toxicology. 2020 Jul 1;14(3).
91. Ahmed MM, Ibrahim RM, Younis NM. Perceived Seriousness related to Smoking among students. Journal of Current Medical Research and Opinion. 2024 Jul 13;7(07):3234-43.
92. Ahmed MM, Younis NM, Ibrahim RM. Evaluation of Behavioral Control aimed at Improving Students' Behavior Concerning Substance abuse. Current Clinical and Medical Education. 2024 Jul 19;2(7):92-9.
93. Ahmed MM, Ibrahim RM, Younis NM. Behavioral Intention to Improvement Behavior of Students' related to Drug Use: Apply the Health Beliefs Model. Current Clinical and Medical Education. 2024 Jul 19;2(7):100-6.
94. Younis NM, Ahmed MM, Dhahir NM. Prevalence of coronavirus among healthcare workers. International Journal of Medical Toxicology & Legal Medicine. 2021;24(1and2):267-70.
95. Younis NM, Ibrahim RM, Ahmed MM. Relationship between Quality of Life and Lifestyle of Health Old Age. Current Clinical and Medical Education. 2024 Aug 1;2(8):18-28.
- 96.Ibrahim RM, Ahmed MM, Younis NM. Correlation between Physical Activity and Quality of Life of Elderly. Current Clinical and Medical Education. 2024 Aug 1;2(8):9-17.
97. Younis NM, Ibrahim RM, Ahmed MM. Relationship between Personal Hygiene and Elderly Health. Current Clinical and Medical Education. 2024 Aug 4;2(8):199-206.

98. Ibrahim RM, Ahmed MM, Younis NM. Association between Psychological Problem and Health old age. *Current Clinical and Medical Education*. 2024 Aug 4;2(8):190-8.
99. Younis NM, Ahmed MM, Ibrahim RM. Motivation of Application Health Beliefs Models With Substance Abuse. *Current Clinical and Medical Education*. 2024 Aug 10;2(8):236-43.
100. Younis NM, Ahmed MM, Ibrahim RM. Confidence of Application Health Beliefs Models with Addiction. *Current Clinical and Medical Education*. 2024 Aug 10;2(8):218-26.
101. Younis NM, Ahmed MM, Ibrahim RM. Health Beliefs Model in Enhancing the Beliefs Concerning Healthy Weight. *Current Clinical and Medical Education*. 2024 Aug 10;2(8):227-35.
102. Ibrahim RM, Ahmed MM, Younis NM. Effectiveness of a Model-Based Intervention Based on Health Beliefs in Altering the Beliefs of Students Regarding Substance use. *Journal of Current Medical Research and Opinion*. 2024 Jul 29;7(07):3363-72.
103. Ibrahim RM, Younis NM, Ahmed MM. Sleep Disorder with Internet Addiction in University Students: A Cross-Sectional Study Correlational. *Journal of Current Medical Research and Opinion*. 2024 Aug 27;7(08):3492-504.
104. Ibrahim RM, Younis NM, Ahmed MM. The relationship between factory workers' quality of life and occupational hazards. *Current Clinical and Medical Education*. 2024 Aug 27;2(8):369-80.
105. Nasir MY, Rian MI, Nada HI. Prevalence of snake bite among children in Nineveh Governorate/Iraq: A retrospective study. *International Journal of Medical Toxicology & Legal Medicine*. 2022;25(3and4):166-9.
106. Bura'a LN, Younis NM. Nurses knowledge regarding to phototherapy at neonatal care units in Mosul City, Iraq. *Rawal Med J*. 2023 May 27;48(2):379.
107. Ibrahim RM, Ahmed MM, Younis NM. Nursing Students' Information Toward Distraction Techniques for Children Undergoing Procedures. *Journal of Current Medical Research and Opinion*. 2024 May 23;7(05):2597-605.
108. MuwfaqYounis N. Efficacy of Health Beliefs Model-Based Intervention in Changing Substance Use Beliefs among Mosul University Students: A Randomized Controlled Trial. *RevisBionatura* 2022; 7 (2) 35.
109. Ahmed MM, Younis NM, Ibrahim RM. Apply the HBM in Changing the Beliefs Related to Weight Control Behaviors among Employees. *Journal of Current Medical Research and Opinion*. 2024 Jul 22;7(07):3345-53.
110. Younis NM, Ahmed MM, Ibrahim RM. Motivation of Students for Enhancing the Beliefs related to Substance abuse: Apply Health Beliefs Model. *Journal of Current Medical Research and Opinion*. 2024 Sep 5;7(09):3549-58.
111. Ibrahim RM, Idrees NH, Younis NM. Knowledge about Type 1 Diabetes in Children among Nursing Students of the University of Mosul. *The Malaysian Journal of Nursing (MJN)*. 2024 Jul 25;16(1):117-23.
112. Ahmed MM, Hussein AA, Younis NM. Assessment of nursing student's beliefs about healthy dieting. *Journal of Education and Health Promotion*. 2024 Oct 1;13(1):408.
113. Ahmed MM, Ibrahim RM, Younis NM. Improving University Staff Members' Weight Control Practices: Health Beliefs Model. *Journal of Current Medical Research and Opinion*. 2024 Sep 11;7(09):3559-71.
114. Ibrahim RM, Ahmed MM, Younis NM. Weight Control and Health Beliefs Model: A Comparative Study. *Journal of Current Medical Research and Opinion*. 2024 Sep 11;7(09):3572-83.
115. Andreatta PB, Klotz JJ, Dooley-Hash SL, Hauptman JG, Biddinger B, House JB, Ahern K. Performance-based comparison of neonatal intubation training outcomes. *Advances in Neonatal Care*. 2015 Feb 1;15(1):56-64.
116. Luhaib YR, Younis NM. Utilization of Primary Health Care Services in Qayyarah City Northern Iraq. *Journal of Current Medical Research and Opinion*. 2024 Nov 19;7(11):3746-54.
117. Younis NM, Ibrahim RM, Ahmed MM. Evaluation of Nurses Practices Towards to Phototherapy: Across-Sectional Study. *Journal of Current Medical Research and Opinion*. 2024 Nov 19;7(11):3735-45.
118. Jasem WM, Younis NM. Nurses' Practice Towards Nursing Documentation: Across-sectional Study. *Journal of Current Medical Research and Opinion*. 2024 Nov 25;7(11):3767-78.

119. Jasem WM, Younis NM. Nurses' knowledge Towards Nursing Documentation: A descriptive study. Journal of Current Medical Research and Opinion. 2024 Nov 25;7(11):3755-66.
120. Younis NM, Taher AK. Transtheoretical Model on changing Electronic Smoker-Related Behaviors among Caregiver. Current Clinical and Medical Education. 2025 Feb 25;3(2):43-51.
121. Younis NM, Ahmed MM, Ibrahim RM. Using the Nola Pender's Model in Health Promotion towards Hypertension of Employees in Nineveh province. Current Clinical and Medical Education. 2025 Mar 9;3(03):39-53.