

RECOMMENDATIONS

- Basic principle of preventive medicine and public health is that removal of an environmental source of injury or disease, so we suggest more restrictions of firearms availability and more effort in the criminal justice system with its threat of punishment as a deterrent to acts of violence.
- Our emergency rooms should be more active and more advanced, better supplied , equipped and staffed. This will help in decreasing the severity of injury and decrease morbidity & mortality.
- Addressing the root causes of violence such as poverty, unemployment, and substance abuse will reduce the incidence of gunshot injuries in our environment
- Establishment of efficient emergency health care services for pre-hospital care and effective ambulance system for rapid transport of injured victims to hospital will reduce morbidity and mortality associated with these injuries
- The blood bank should always be supplied with sufficient amounts of blood to be ready to accept and manage the critical cases.
- The main difference between the surgical team work and the forensic medicine duty is that the later is interested in finding the truth of the environment of the crime, the type of the weapon, the distance of shooting.....etc., while the first in saving life, nevertheless, both will work to support the society and save the people. The forensic medicine advice in such cases will be as the surgeon should follow his patient who dies.

REFERENCES

1. Alon B., Galit N., Moshe S., et al. Treating Civilian Gunshot Wounds to the Extremities in a Level 1 Trauma Center: Our Experience and Recommendations. *IMAJ*. 2009; 11: 546-551.
2. Saidi HS, Nyakiamo J, Faya S. Gunshot injuries as seen at the Aga Khan Hospital, Nairobi, Kenya. *East Afr Med J*. 2002; 79:188-192.
3. Mohammed A.Z., Edino S.T., Ochicha O., Umar A.B. Epidemiology of gunshot injuries in Kano, Nigeria. *Nigerian Journal of Surgical Research* 2005;7(3):296-299.
4. Chalya P.L., Mchembe M., et al. Gunshot injuries: A Tanzanian experience in a Teaching hospital in the Lake Zone. *East and Central African Journal of Surgery* 2011; 16 (1): 19-25.
5. Annual Summary of Births, Marriages, Divorces and Deaths: United States 1993. Monthly Vital Statistics Report. Hyattsville, Md: US Public Health Service. DHHS publication (PFS) 1194; 42: 95-1120.
6. Wintemute G. J. Trauma in Transition: Trends in Death from Firearms from Motor Vehicle Injuries. Sacramento, Calif: Violence Prevention Research Program 1995.
7. Max W, Rice DP. Shooting in the dark: estimating the cost of firearm injuries. *Health Aff (Millwood)* 1993; 12:171-185.
8. William R. N., Stephen T. H., et al. Prediction of Major Vascular Injury in Patients with Gunshot Wounds to the Neck. *AJNR Am J Neuroradiol* 1996; 17:161-167.
9. Faris D. A. abdominal missile injuries. *World Journal of Colorectal Surgery* 2010; 2 (1). 1-14.
10. Shepherd R. Forensic Medicine. 12th ed. London: Arnold 2003; 79-86.
11. Vincent J. D.. Gunshot wounds: practical aspects of firearms, ballistics and forensic techniques. New York: Elsevier;1985.
12. Ilkka M. Ballistic Trauma in Finland. Academic dissertation. University of Helsinki 2006; 9.
13. Ronald F. B., Peter A. M., Joshua S. V. Epidemiology of trauma: Military experience. *Annals of Emergency Medicine* 1986; 15 (12): 1384-1388.
14. Kochanek KD, Xu J, Murphy SL, et al. National Vital Statistics Reports. Deaths, Preliminary Data for 2009. Hyattsville, Md: US Department of Health & Human Services 2001.
15. Harman PK, Trinkle JK. Injury to the Heart. In: *Trauma* 1991; 2.

16. Meredith JW, Trunkey DD. Thoracic Gunshot Wounds. In: Ordog GJ, editor. Management of Gunshot Wounds. New York: Elsevier Science Publishing, 1988.
17. Naughton MJ, Brissie RM, Bessey PQ, McEachern MM, Donald JM, Laws HL. Demography of Penetrating Cardiac Trauma. *Annals of Surgery* 1989;209(6):676-683.
18. Eleni P., Delia-Marina A., David M., Maria S. Burden of fatal injuries in the european union. Department of Epidemiology, Medical School, Centre for Research and Prevention of Injuries. Greece 2005. 1-63.
19. Ojo E., Ibrahim A., et al. Gunshot Injuries In A North Eastern Nigerian Tertiary Hospital. *The Internet Journal of Surgery* 2007; 16 (2).
20. Yasser S. S, Nabeel G. H, Ahmed S. A, Ahmed S. S. Medico-legal Study of Shockwave Damage by High Velocity Missiles in Firearm Injuries. *J Fac Med Baghdad* 2011.53 (4): 401-405.
21. Hollerman JJ. Gunshot wounds. *Amer Fam Physician* .1988; 37 (5): 231-46.
22. Max W, Rice DP. Shooting in the dark: estimating the cost of firearm injuries. *Health Aff (Millwood)* 1993; 12:171–185.
23. Polk DE, Giessen BC. A new serial number marking system applicable to firearms identification. *J Forensic Sci.* 1975; 20:501-506.
24. Pun KM, Gallusser A. Macroscopic observation of the morphological characteristics of the ammunition gun powder. *Forensic Sci Int.* 2007; 175:179-185.
25. Russell MA, Atkinson RD, Klatt EC, Noguchi TT. Safety in bullet recovery procedures: a study of the Black Talon bullet. *Am J Forensic Med Pathol.* 1995;16:120-123.
26. Suneson A, Hansson HA, Seeman T. Pressure Wave Injuries to the Nervous System Caused by High Energy Missile extremity Impact: Part II. Distant Effects on the Central Nervous System. A Light and Electron Microscopic Study on Pigs. *The Journal of Trauma* 1990; 30 (3): 295–306.
27. D. Dufour, S. K. Jensen, M. Owen-Smith, et al. Surgery for victims of war. *International Committee of the Red Cross* 1998; Third edition.27-124
28. Rashid B. A., Wani M. A., Kirmani A.R., Raina T.H, Alam S. Craniocerebral missile injuries in civilian kashmir – india plaies cranio-cerebrales par balles durant la guerre civile au cachemire. *AJNS* 2010; 29 (2): 13-28.
29. French r.W, Callender G.R. Ballistic characteristics of wounding agents. In J.C.Beyer (eds.) : wound Ballistics. Washington, DC, Office of the Surgeon General, Department of the Army , 1972: pp 91-141.
30. Fackler M.L, Malinowski J.A. The wound profile : a visual method for quantifying gunshot wound components . *J Trauma* 1885;25:522-9.

31. FRETAG E. Autopsy findings in head injuries from firearms. *Arch Pathol* 1963;76, 215-225.
32. Byrnes D.P; Crockard H.A; Gordon D.S; Gleadhill C.A. Penetrating craniocerebral missile injuries in the civil disturbances in Northern Ireland. *Br J Surg* 61 1974;169-176.
33. Grahm T.W, Williams F.C, Harrington T, Spetzler R.F. Civilian gunshot wounds to the head : A prospective study . *Neurosurgery* 1990; 27:696-700.
34. Raimondi A.J. Samuelson G.H. Craniocerebral gunshot wounds in civilian practice. *J Neurosurg* 1970; 32:647-653.
35. Suddaby I, Weir B, Forsyth C. The management of .22 caliber gunshot wounds of the brain . A review of 49 cases . *Can J Neurol Sci* 1987;14 :268-272.
36. Tan YH, Zhou SX, Liu YQ, Liu BL, Li ZY. Small-vessel pathology and anastomosis following maxillofacial firearm wounds: an experimental study. *J Oral Maxillofac Surg* 1991; 49:348–352.
37. Rocca A, Paoli JR, Leonetti G, Lenziani E, de Montera AM. [Gunshot injuries of the face. Clinical observations in 21 cases]. *Ann Chir Plast Esthet* 1998; 43:125–131
38. Micha P, Yoav L, Omri E, Amir K. Treatment Protocol for High Velocity/High Energy Gunshot Injuries to the Face. *Craniofac Trauma Reconstruction* 2012; 5:31–40.
39. M. Isa Kara, Hidayet B. P., Sinan A. Penetrated Shotgun Pellets: A Case Report. *Eur J Dent*. 2008 January; 2: 59–62.
40. Allen B. T. Eye injuries associated with terrorist bombings. Chapter 24 . *Walter Reed Army Medical Center, Washington* 2009; 412-429.
41. Shuttleworth GN, Galloway P, Sparrow JM, Lane C. Ocular air gun injuries: a one-year surveillance study in the UK and Eire (BOSU). 2001-2002. *Eye (Lond)* 2009; 23(6):1370-1376.
42. McGwin G J., Hall T. A., Xie A., Owsley C. Gun-related eye injury in the United States, 1993-2002. *Ophthalmic Epidemiol* 2006;13(1):15-21.
43. Robertson DM et al. Retinopathy from a Green Laser Pointer. *Archives of Ophthalmology* 2005;123:629.
44. L. K. Kochhar, V. K. Shukul, R. Sharma. Gun shot wound neck. *Indian Journal of Otolaryngology and Head and Neck Surgery* 2004; 56 (1): 49-52.
45. Rao PM, Ivatury RR, Sharma P, Vonzons AT, Nassoura Z, Stahl WM. Cervical vascular injuries: a trauma center experience. *Surgery* 1993;111:527–531.
46. Swan KG, Swan RC. Principles of ballistics applicable to the treatment of gunshot wounds. *Surg Clin North Am* 1991; 71:221–229.

47. Roden DM, Pomerantz RA. Penetrating injuries to the neck: a safe, selective approach to management. *Am Surg* 1993; 59:750–753.
48. Motamedi MH. Primary management of maxillofacial hard and soft tissue gunshot and shrapnel injuries. *J Oral Maxillofac Surg.* 2003; 61:1390–1398.
49. Hollier L, Grantcharova EP, Kattash M. Facial gunshot wounds: a 4-year experience. *J Oral Maxillofac Surg.* 2001; 59:277–282.
50. Wang D-W, Wang Z-S, Yin X-G, et al. Histologic and ultrastructural changes of the spinal cord after high velocity missile injury to the back. *J Trauma* 1996; 40(3): 590-593.
51. N Buxton. The military medical management of missile injury to the spine: A review of the literature and proposal of guidelines. *J R Army Med Corps* 2001; 147: 168-172.
52. Teitelbaum GP, Yee CA, vanHorn DD, Kim HS, Colletti PM. Metallic ballistic fragments: MR imaging safety and artifacts. *Radiology* 1990; 175(3): 855-859.
53. Mattox K, Pickard LM, Allen MK. Emergency thoracotomy for injury. *Injury* 1986; 17:327-31.
54. Jozo K., Krunoslav Š., Borislav H. Surgical treatment of patients with penetrating chest injuries sustained in war. *Medicinski Glasnik* 2012; 56-60
55. Čečka F., et al. Gun-shot injuries to the abdomen involving the pancreas. *Acta Chir Orthop Traumatol Cech* 2012; 79(5):455-8.
56. Degiannis, E, Glapa, M. Management of pancreatic trauma. *International Journal of the care of the Injured* 2008; 39: 21-29.
57. Jordan A.W., Timothy C. F. Injuries to the stomach, small bowel, colon, and rectum. *ACS Surgery: Principles and Practice* 2005; 7:1-8.
58. Gonzalez RP, Falimirski ME, Holevar MR. Further evaluation of colostomy in penetrating colon injury 2000; 66:342.
59. Stewart RM, Fabian TC, Croce MA, et al. Is resection with primary anastomosis following destructive colon wounds always safe. *Am J Surg* 1994; 168:316.
60. D M Ogwang. High velocity missile injuries of the liver. *East and Central African Journal of Surgery*; 4(2): 13-16.
61. Christian B., Sivakumar G. An overview of liver trauma. *MSJA* 2011; 3 (1):5-10.
62. Carlin, A. M., et al. Factors Affecting the Outcome of Patients With Splenic Trauma. *American Surgeon* 2002; 68 (3): 232-239.
63. Krige J. E., et al. The management of complex pancreatic Injuries. *SAJS* 2005; 43 (3): 92-102.

64. Pile JC; Evaluating postoperative fever: a focused approach. *Cleve Clin J Med.* 2006; 73 (1):562-5666.
65. Thomas D, Wee M, Clyburn P, et al. Blood transfusion and the anaesthetist: management of massive haemorrhage. *Anaesthesia* 2010; 65(11):1153-1161.
66. Kujath P., et al. Complicated skin, skin structure and soft tissue infections - are we threatened by multi-resistant pathogens, *European Journal of Medical Research* 2010; 15:544-553.
67. Guo S, Dipietro LA. Factors affecting wound healing. *J Dent Res* 2010; 89(3):219-29.
68. Amin AN, Lin J, Thompson S, et al. Inpatient and outpatient occurrence of deep vein thrombosis and pulmonary embolism and thromboprophylaxis following selected at-risk surgeries. *Ann Pharmacother* 2011; 45(9):1045-1052.
69. Baldini G, Bagry H, Aprikian A, et al. Postoperative urinary retention: anesthetic and perioperative considerations. *Anesthesiology* 2009; 110(5):1139-1157.
70. Kheterpal S, Tremper KK, Englesbe MJ, et al. Predictors of postoperative acute renal failure after noncardiac surgery in patients with previously normal renal function. *Anesthesiology.* 2007;107(6):892-902.
71. Lubawski J, Saclarides T. Postoperative ileus: strategies for reduction. *Ther Clin Risk Manag* 2008; 4(5):913-917.
72. Bowyer GW, Rossiter ND. Management of gunshot wounds of the limbs. *J Bone Joint Surg* 1997; 79-B: 1031-1036.
73. Pappas P. J., Paul B. Haser, Edwin P. T., et al. Outcome of complex venous reconstructions in patients with trauma. *Journal of vascular surgery* 1997; 25 (2): 398-404.
74. Singh C P, Brig G M, et al. Missile Injuries of Brain - an Experience in Northern Sector. *MJAFI* 2003; 59 : 290-297.
75. Khan M A., Riaz H, Shuja H. K, Muhammad U. Open Fractures Caused By High Velocity. Missiles: The Outcome of Treatment of 39 Fractures Followed for 1-3 years. *JPMA* 1997; 47:274-278.
76. Lone R A, Mehmood A W, Zahur H, et al. Missile cardiac injuries: review of 16 years' experience. *Turkish Journal of Trauma & Emergency Surgery* 2009;15(4):353-356.
77. Oluyemi F. Epidemiology of Penetrating Eye Injury in Ibadan: A 10-Year Hospital-Based Review. *Middle East Afr J Ophthalmol* 2011; 18(2): 159–163.
78. Wani M L, Abdul Gani A, Nabi L, et al. Profile of missile-induced cardiovascular injuries in Kashmir, India. *J Emerg Trauma Shock* 2011; 4(2): 173–177.

79. Odai C D, Azodo C C, Obuekwe O N. Demographic characteristics of orofacial gunshot injury victims. *International Journal of Biomedical and Health Sciences* 2011; 7 (2): 73-80.
80. Izci Y, Kayali H, Daneyemez M, Koksel T. Comparison of clinical outcomes between anteroposterior and lateral penetrating craniocerebral gunshot wounds. *Emerg Med J* 2005; 22:409-415.
81. Abdel-Hady H, Abdel-Moneim M, Abdel-Aal M. Firearm injuries and fatalities. A preliminary study report in Assiut Governorate, Egypt in year 2006. *Zagazig J Forensic Med Toxicol* 2008; 6(1):97–118.
82. Maklad A, El-Mehy L, Mohdy M. A medico-legal study of firearm injuries in El-Monofia Governorate. *Ain Shams J Forensic Med Clin Toxicol* 2004; 2:1–19.
83. Gamal Eldin A, El-Ghamry H, Ghaleb S, Ahmed T. Study of cases of firearms fatalities in El-Fayoum Governorate during 7 years period (2000–2006) retrospective study. *Beni Sueif Univ Med J* 2008; 1(1):70–92.
84. Saleh SM. A preliminary study of firearm injury and death in Qena Governorate, Egypt in year 2008. *Ain Shams J Forensic Med Clin Toxicol* 2010;XIV:99–112.
85. Ayoade B.A., Salami B.A., et al. Abdominal Injuries in Olabisi Onabanjo University Teaching Hospital Sagamu, Nigeria: Pattern and Outcome. *Nigerian Journal of Orthopaedics And Trauma* December 2006; 5(2):45 - 49.
86. Ogwang D M, High velocity missile injuries of the liver. *East and Central African Journal of Surgery* 1998; 4 (2): 13-16.
87. Sajid H, Tanvir A K, Iman H D. Epidemiology of gunshot injuries in district sialkot. *JSZMC* 2013; 4 (4): 504-508.
88. Abrar A. W., Altaf U. R., et al. Missile injury to the pediatric brain in conflict zones. *J Neurosurg Pediatrics* 2011; 7: 276-281.
89. Khan M B, Rajesh K, Furqan B I, Affan B I, Muhammad E B. Civilian Craniocerebral Gunshot Injuries in a Developing Country: Presentation, Injury Characteristics, Prognostic Indicators, and Complications. *ScienceDirect* 2013; 9 (2): 1-26.
90. Tae-Won K, Jung-Kil L, Kyung-Sub M, et al. Penetrating Gunshot Injuries to the Brain. *J Korean Neurosurg Soc* 2007; 41: 16-21.
91. Harjinder S B. Missile Injuries of the Anterior Skull Base. *Skull Base* 2004; 14(1): 1–8.
92. Anglin D, Range H, et al. Intracranial Hemorrhage Associated with Tangential Gunshot Wounds to the Head. *Academic Emergency Medicine* 1998; 5 (7): 672–678.
93. Aigoro N, Abass G. Epidemiology Of Gunshot Injuries In Abeokuta, Southwest Nigeria. *The Internet Journal of Orthopedic Surgery* 2013; 20 (1).

94. Mohammed A. Z., Edino S.T., Ochicha O., Umar A.B.. Epidemiology of gunshot injuries in Kano, Nigeria. *Nigerian Journal of Surgical Research* 2005; 7 (3): 296-299.
95. Udosen A.M., Etiuma A.U., Ugare G.A., Bassey O.O.. Gunshot injuries in Calabar, Nigeria: an indication of increasing societal violence and police brutality. *African Health Sciences* 2006; 6 (3): 170-172.
96. Inchien C. Pattern of civilian gunshot wounds in Durban, South Africa. *European Journal of Trauma and Emergency Surgery* 2011; 37(1): 37-40.
97. Petkov AI, Eftimov T, Kutin P. Decompressive osteoplastic craniectomy in patients with civil craniocerebral gunshot injuries. *Balkan Military Medical Review* 2008;11: 1-10.
98. Ogunlusi J D, Oginni L M, et al. Gunshot Injuries In A Nigerian Hospital. *Nigerian Journal of Orthopaedics And Trauma* December 2006; 5(2):34 - 37.
99. Kalemoglu M, Yildirim I, Keskin O, Eryilmaz M, Ersanli D. The gunshot injuries in emergency surgery. *Balkan Military Medical Review* 2006; 2: 56-58.
100. Katchy AU. Gunshot injuries in Enugu: the challenges of our time. *Nig J Med* 1999; 2: 69-73.
101. Chinnery GE, Krige JE, Kotze UK, Navsaria P, Nicol A. Surgical management and outcome of civilian gunshot injuries to the pancreas. *Br J Surg* 2012; 1:140-148.
102. Izci Y, Kayali H , Daneyemez M , Koksel T . Comparison of clinical outcomes between anteroposterior and lateral penetrating craniocerebral gunshot wounds. *Emerg Med J* 2005; 22:409-413.
103. Chalya P.L., Mchembe M., Mabula J.B., Kanumba E. S., Gilyoma J.M.. Gunshot injuries: A Tanzanian experience in a Teaching hospital in the Lake Zone. *East and Central African Journal of Surgery* 2011; 1 (1): 19-25.
104. Nathoo N, Chite SH, Edwards PJ, van Dellen JR. Civilian infratentorial gunshot injuries: outcome analysis of 26 patients. *Surg Neurol* 2002; 58(3-4): 225-232.
105. Grahm TW, Williams FC, Harrington T, Spetzler RF. Civilian gunshot wounds to the head: a prospective study. *Neurosurgery* 1990;27(5):696-700.

الملخص

إن الإصابات النارية نوعا خاص من الإصابات التي تزداد في جميع أنحاء العالم، وتسهم بشكل كبير في ارتفاع معدلات الأعتلال والوفاة. إصابات الطلق الناري تفرض عبئا مستمرا على موارد المجتمع والمستشفيات في جميع أنحاء العالم. القذائف التي تنطلق بسرعة تتجاوز ٢٥٠٠ قدم في الثانية تعتبر قذائف عالية السرعة. ولذلك هذه الدراسة هي دراسة استعادية لوصف وتحليل نمط الأعتلال والوفاة بين ضحايا الإصابات النارية، وإدارة الحالات والتقييم الطبي بقسم طوارئ الجراحة بالمستشفى الرئيسي الجامعي بالاسكندرية خلال فترة ستة أشهر ابتداء من ٢٥ يناير إلى ٢٥ يوليو ٢٠١١. خلال هذه الفترة تم دراسة ٥٠٧ ضحية الذين يشكلون حالات الدراسة.

تم استخراج البيانات، بما في ذلك البيانات الشخصية للمرضى، استقرار الدورة الدموية، الفحص الطبي، موقع الإصابة، الفحوصات، إدارة الحالات، والنتيجة. تم إدخال البيانات وتحليلها من خلال مايكروسوفت إكسل.

كانت مجموعة من ٥٠٧ حالة مصابين بطلق نارى، ٤٩١ من الذكور و ١٦ من الإناث وكانت الفئة العمرية الأكثر شيوعا هي العقد الثالث من العمر. وكانت ٩٠٪ من المرضى مستقرين من حيث الدورة الدموية. وكانت الأطراف هي المكان الأكثر شيوعا (٤٣٪) الذى تأثر بالإصابة وكان الفخذ أكثر مكان شوه فيه علامات إيجابية في الأشعة السينية. ٤٢٥ (٨٤٪) مريض أخرجوا بأعتلال، ١٣٪ أخرجوا معالجين وكان معدل الوفاة ٣٪.

ضحايا الطلق الناري أخرجوا بأعتلال سواء كان أعتلالا كبيرا مع فقدان وظيفة العضو أو أعتلال بسيط معا لأحتفاظ بوظيفة العضو. ولذلك، هناك حاجة للحد من الإصابات النارية وهو أمر غير ممكن من دون معالجة الأسباب الجذرية وجلب مثل هذه التغييرات التي قد تقلل الوفيات والإعاقات والتكلفة على المجتمع.

أنماط الاعتلال والوفاة بين ضحايا القذائف النارية المستقبلين بقسم طوارئ
الجراحة أثناء ثورة ٢٥ يناير المصرية

رسالة علمية

مقدمة لكلية الطب - جامعة الإسكندرية
إيفاءً جزئياً لشروط الحصول على درجة

الماجستير في طب الطوارئ

مقدمة من

منى على حسين خطاب

بكالوريوس الطب والجراحة - الإسكندرية

كلية الطب
جامعة الإسكندرية
٢٠١٥

أنماط الاعتلال والوفاة بين ضحايا القذائف النارية المستقبلين بقسم طوارئ
الجراحة أثناء ثورة ٢٥ يناير المصرية

مقدمة من

منى على حسين خطاب

بكالوريوس الطب والجراحة- الإسكندرية

للحصول على درجة

الماجستير فى طب الطوارئ

موافقون

.....

.....

.....

.....

لجنة المناقشة والحكم على الرسالة

أ.د/ حبشى عبد الباسط الحمادى

أستاذ الجراحة

كلية الطب

جامعة الإسكندرية

أ.د/ محمد عبدالقادر أبوالسعود

أستاذ جراحة الرأس والعنق و الغدد الصماء

كلية الطب

جامعة الإسكندرية

أ.د/ عمرو صادق عبدالمجيد صادق

أستاذ الجراحة العامة و الكبد

معهد الكبد القومى

جامعة المنوفية

أ.د/ جلال محمد أبو النجاه

أستاذ الجراحة

كلية الطب

جامعة الإسكندرية

التاريخ:

السادة المشرفون

.....

أ.د/ حبشى عبد الباسط الحمادى

أستاذ الجراحة

كلية الطب

جامعة الإسكندرية

.....

أ.د/ جلال محمد أبو النجاه

أستاذ الجراحة

كلية الطب

جامعة الإسكندرية

المشرفان المشاركان

.....

أ.م.د/ وليد عبد الحليم ابو الوفا

أستاذ مساعد الجراحة

كلية الطب

جامعة الإسكندرية

وذلك لخبرته فى مجال الجراحة

.....

أ.م.د/ هايدى مصطفى مجاهد

أستاذ مساعد الطب الشرعى و السموم

كلية الطب

جامعة الإسكندرية

وذلك لخبرتها فى الطب الشرعى