

EVALUATION OF PERMANENT INFIRMITIES CASES EXAMINED AT FORENSIC MEDICINE AND CLINICAL TOXICOLOGY DEPARTMENT, FACULTY OF MEDICINE, MENOUFIA UNIVERSITY

Fatma Shaban Kandeel¹, Rasha Mamdoh Azab²

^{1,2} Forensic Medicine and Clinical Toxicology department, Faculty of Medicine, Menoufia University, Egypt.

Corresponding author: Rasha Mmdouh Azab; **Mail:** drrashammmdoh@gmail.com

Submit Date 09-12-2023

Revise Date 15-03-2024

Accept Date 18-03-2024.

ABSTRACT

Impairment or disability is an important legal and medical issue. Road traffic accidents, torture, assaults and occupational adversity are the main causes for permanent infirmity occurrence, but traffic accidents are the most frequent cause. **Aim:** This work aimed to study the pattern of permanent infirmities cases examined at Forensic Medicine and Clinical Toxicology Department, Faculty of Medicine, Menoufia University. **Patients & methods:** This study was conducted on all cases examined at forensic medicine and clinical toxicology department, faculty of medicine, Menoufia university for obtaining final reports with final diagnosis of definite permanent infirmities over two years (2021 (a retrospective part) and 2022 (a prospective part)). Permissions were obtained from the Ethics Committee of Menoufia University Hospital and from the head of forensic medicine and clinical toxicology. **Results:** This study was conducted on 264 cases. Most of them Males were (72%), in the age group 18- 40 years, from rural regions, had basic level of education, manual workers and most cases were occurred accidentally. Most injuries were caused by blunt instruments (63.3%), followed by sharp instrument (34.8%). Regarding circumstances, road traffic accidents (RTA) were the most common (48.9%) followed by assault (35.2%). **Recommendations:** Attention should be applied to application of strict regulations and laws. In addition, the study recommends enhancement and maintenance of roads and safety measures should be applied to workplaces and manual workers, especially those involved in construction industry should use safety equipment.

Key words: Permanent, Infirmity, Cases, Menoufia, University.

INTRODUCTION

Impairment, infirmity, or disability are exchangeable words. It is difficult to discriminate between these words and is a significant medical and legal issue (WHO, 2011).

Infirmity may be permanent or may occur for a transient time (temporary). Temporary infirmity is suggested when the advance of the damage did not gain at its final percent of improvement within 6 months. On the other hand, infirmity is said to be permanent when irreversible impairment (functional affection) or loss of an organ was left that that leaves an individual unable to perform daily tasks (Egyptian Penal Code, 2003; Abd El-Hady et al., 2013).

Road traffic accidents, torture, assaults and occupational adversity are the main causes for permanent infirmity occurrence, although crashes are the most common cause (Singh et al., 2014). Permanent disability constitutes a challenging medicolegal health problem in

most countries, as it destroys life of the victims (Cocchiarella, 2018).

There are no reliable statistics available regarding the prevalence of disability in Egypt. According to the Egyptian surveys conducted in 2006 and 2017, 1.8% and 10.7% of the population, respectively, were disabled (State Information Service [SIS], 2017; El-Saadani and Metwally, 2019).

Disability is said to be permanent when the clinical manifestations indicate establishment of the medical condition (maximal medical improvement). (Ingerman and Horwitz, 2018).

Aim:

This study aimed to study the pattern of permanent infirmities patients examined at Forensic Medicine and Clinical Toxicology Department, Faculty of Medicine, Menoufia University over two years (2021 and 2022).

SUBJECTS AND METHODS

This study was conducted on all cases examined at forensic medicine and clinical toxicology department, faculty of medicine,

Menoufia university for obtaining final reports with final diagnosis of definite permanent infirmities over two years (2021 (a retrospective part) and 2022 (a prospective part)).

Required data were obtained from history, clinical examination and required investigations, including demographic data (age, sex, occupation, residence, marital status and educational level), medico-legal informations including circumstances (road traffic accidents, assault, occupational hazard or fall), manner of injury (accidental, suicidal or homicidal), type of injurious agent (blunt instrument, sharp instrument, firearm weapon or physical injury), scene of injury (street, work, field, home or others), the relation of the offender to the victim in case of assault (known person or stranger), affected body part with the infirmity (extremities, head and face, abdomen, spinal cord and genital organs). All injured cases of RTA, violence and other accidents were referred to the Ministry of Justice to assess the infirmity percentage by medicolegal experts as followed.

Permissions were obtained from the Ethics Committee of Menoufia University Hospital and from the head of forensic medicine and clinical toxicology department. Written consents were obtained from patients or their guardians regarding to the prospective part and patient's personal data were kept unnamed for securing confidentiality. Collection and analysis of information was done through IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp).

RESULTS

This study was conducted on 264 cases. The majority of them (53.4%) were in the age group 18- 40 years, followed by 41-60 years (31.1%) and those > 60 years (8.3%) while 7.2% of cases were below 18 years. Males were around three times greater than females, accounting for 72% of cases. The majority were from rural regions (75.4%). Regarding marital status, 51.1% of cases were single followed by married (48.1%) and the least were non-married cases (divorced and widows) (0.8%). Most of the patients (58.7%) had basic level of education, while 31.8% were secondary educated, 6.4% were illiterate and 3% were highly educated. Manual workers constituted the highest percentage of cases

involved in the study (43.6%) followed by housewives, employers, others, and students (15.6%, 14.4%, 10.6% and 8.3% respectively). The least were farmers (7.6%) (**Table 1**).

Most injuries were caused by blunt instruments (63.3%), followed by sharp instrument (34.8%), physical injuries (1.1%) and the least were caused by firearm weapons (0.8%). Regarding circumstances, road traffic accidents (RTA) were the most common (48.9%) followed by assault (35.2%), then occupational hazards (15.2%) and the least were falls (0.8%). Regarding manner of injury, most cases occurred accidentally (64.8%) while 35.2% were homicidal and there were no suicidal cases. Concerning the scene of injury, most of them occurred in the street (66.3%), followed by work, field, home, and other places (10.2%, 9.8%, 9.5% and 4.2% respectively) (**Table 2**).

Impairment of movement was the commonest infirmity (50.8%), followed by amputation, visual impairment, neurological deficit, splenectomy, impaired hearing, paraplegia and skull bone defect (20.8%, 8.7%, 8%, 7.2%, 1.9%, 1.5% and 0.8% respectively). The least was sexual organ dysfunction in only one case (0.4%).

Extremities were the most affected body part with infirmity (71.6%) followed by head and face (19.3%), abdomen (7.2%), spinal cord (1.5%) and the least affected parts were genital organs (0.4%) (**Table 3**).

There was no significant relation regarding sex in different age groups (**Table 4**).

There was a significant relation regarding type of instruments and manner of injury (p value <0.05) where 81.3% of accidental cases were caused by blunt instrument and 64.5% of homicidal cases were committed using sharp instrument (**Table 5**).

There was a significant relation regarding types of disability and circumstances (p value <0.05). The highest percentage of cases with amputation resulted from occupational hazards (60%). Most cases affected by visual affection were due to assault (73.9%). Most cases of brain or spinal cord affection and splenectomy were caused by road traffic accidents (68% and 63.2% respectively) (**Table 6**).

Table (1): distribution of permanent infirmity cases regarding sociodemographic data (n=264)

		N	%
Age	below18	19	7.2
	18-40	141	53.4
	41-60	82	31.1
	>60	22	8.3
	Total	264	100
Sex	male	190	72.0
	female	74	28.0
	Total	264	100
Residence	rural	199	75.4
	urban	65	24.6
	Total	264	100
Marital status	single	135	51.1
	married	127	48.1
	Non-married (divorced and widows)	2	0.8
Education	Total	264	100
	Illiterate	17	6.4
	Basic	155	58.7
	Secondary	84	31.8
	Highly educated	8	3.0
Occupation	Total	264	100
	Manual workers	115	43.6
	Students	22	8.3
	Employers	38	14.4
	Farmers	20	7.6
	Housewives	41	15.6
	Others	28	10.6
Total	264	100	

Table (2): Distribution of permanent infirmity cases regarding to type of instrument, circumstances, manner of injury, scene where injury was occurred (n=264)

		N	%
Type of instruments	Blunt instrument	167	63.3
	Sharp instrument	92	34.8
	Physical injury	3	1.1
	Firearm injury	2	0.8
	Total	264	100.0
Circumstances	RTA	129	48.9
	Assault	93	35.2
	Occupational hazard	40	15.2
Manner of injury	falls	2	0.8
	Total	264	100
	Accidental	171	64.8
	Homicidal	93	35.2
Scene where injury was occurred	Total	264	100
	Street	175	66.3
	Home	25	9.5
	Work	27	10.2
	Field	26	9.8
	Other places	11	4.2
	Total	264	100

Table (3): Distribution of permanent infirmity cases regarding to type of resulted infirmity, affected body part (n=264)

		N	%
Type of resulted infirmity	Impairment of movement due to different causes	134	50.8
	Amputation	55	20.8
	Visual impairment	23	8.7
	Neurological deficit	21	8.0
	Spleneectomy	19	7.2
	Impaired hearing	5	1.9
	Paraplegia	4	1.5
	Skull bone defect	2	0.8
	Sexual organ dysfunction	1	0.4
	Total	264	100.0
Affected body part with infirmity	extremities	189	71.6
	head and face	51	19.3
	abdomen	19	7.2
	spinal cord	4	1.5
	genital organs	1	0.4
	Total	264	100.0

Table (4): Chi Square Statistical analysis of permanent infirmity cases regarding sex and different age groups (n=264)

			Sex		Total	X ²	P value
			Male	Female			
Age	Below18	N	12	7	19	5.897	0.117
		%	6.3	9.5	7.2		
	18-40	N	106	35	141		
		%	55.8	47.3	53.4		
	41-60	N	53	29	82		
		%	27.9	39.2	31.1		
	>60	N	19	3	22		
		%	10.0	4.1	8.3		
Total		N	190	74	264		
		%	100	100	100		

Table (5): Distribution of permanent infirmity cases regarding to type of instruments and manner of injury.

			Manner of injury		Total	X ²	P value
			accidental	homicidal			
Type of instrument	Blunt	N	139	28	167	70.4	<0.001*
		%	81.3	30.1	63.3		
	Sharp	N	32	60	92		
		%	18.7	64.5	34.8		
	Physical injury	N	0	3	3		
		%	0.0	3.2	1.1		
Firearm	N	0	2	2			
	%	0.0	2.2	0.8			
Total		N	171	93	264		
		%	100	100	100		

Table 6: Distribution of permanent infirmity cases regarding to types of disability and circumstances.

Types of disability		Circumstances				Total	X2	P value
		RTA	Assault	Occupation hazard	Falls			
Impairment of movement	N	74	57	3	0	134		
	%	55.2	42.5	2.2	0.0	100		
Amputation	N	22	0	33	0	55		
	%	40.0	0.0	60.0	0.0	100		
Visual impairment	N	3	17	3	0	23		
	%	13.0	73.9	13.0	0.0	100	143.8	<0.001*
Brain and spinal cord affection	N	17	6	0	2	25		
	%	68.0	24.0	0.0	8.0	100		
Splenectomy	N	12	7	0	0	19		
	%	63.2	36.8	0.0	0.0	100		
Others	N	1	6	1	0	8		
	%	12.5	75.0	12.5	0.0	100		
Total	N	129	93	40	2	264		
	%	48.9	35.2	15.2	0.8	100		

**Figure (1):** photo of male patient 28 years old with below elbow traumatic amputation of right upper limb due to occupational hazard (running machine).**Figure (2):** photo of male patient 42 years old with traumatic amputation of left upper limb at level below shoulder joint due to running machine.



Figure (3): photo of male patient 41 years old with cut wound of the penis due to running machine.

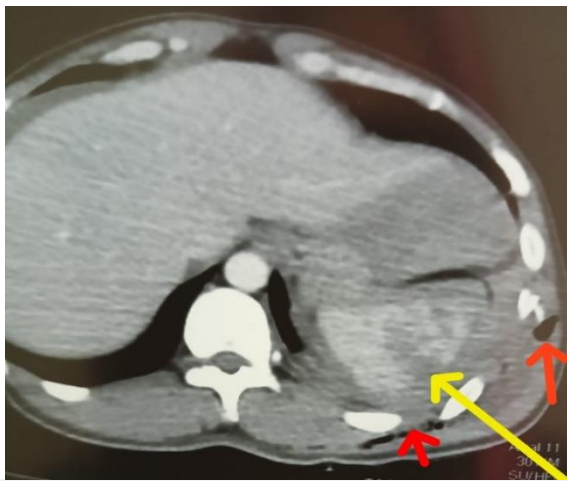


Figure 4 A

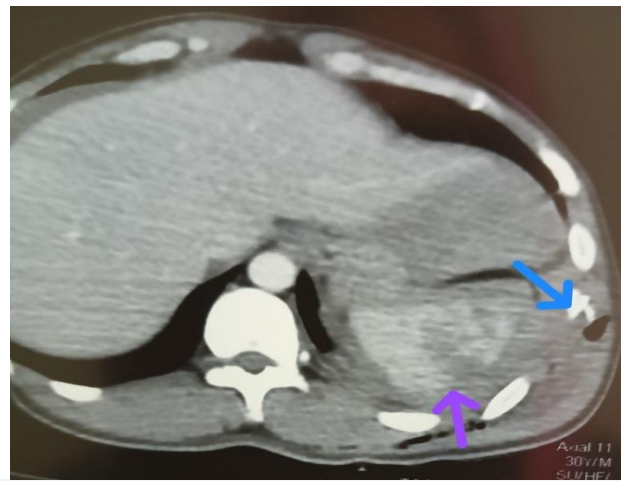


Figure 4 B

Figure (4a&b): Photos of abdominal computed Tomography (CT) of 30 years old male with splenic lacerations (yellow arrow), perisplenic collection (violet arrow) ,fracture rib (blue arrow) and surgical emphysema (red arrows) due to road traffic accident.

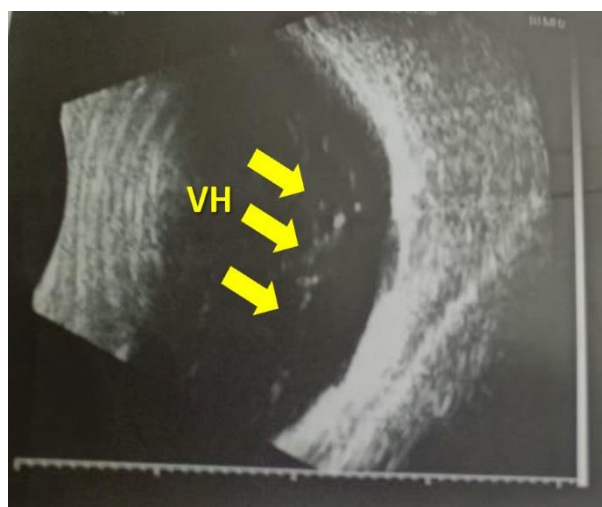


Figure (5): Photo of ocular ultrasonography of right eye of male patient 36 years old with history of assault, showed vitreous hemorrhage.

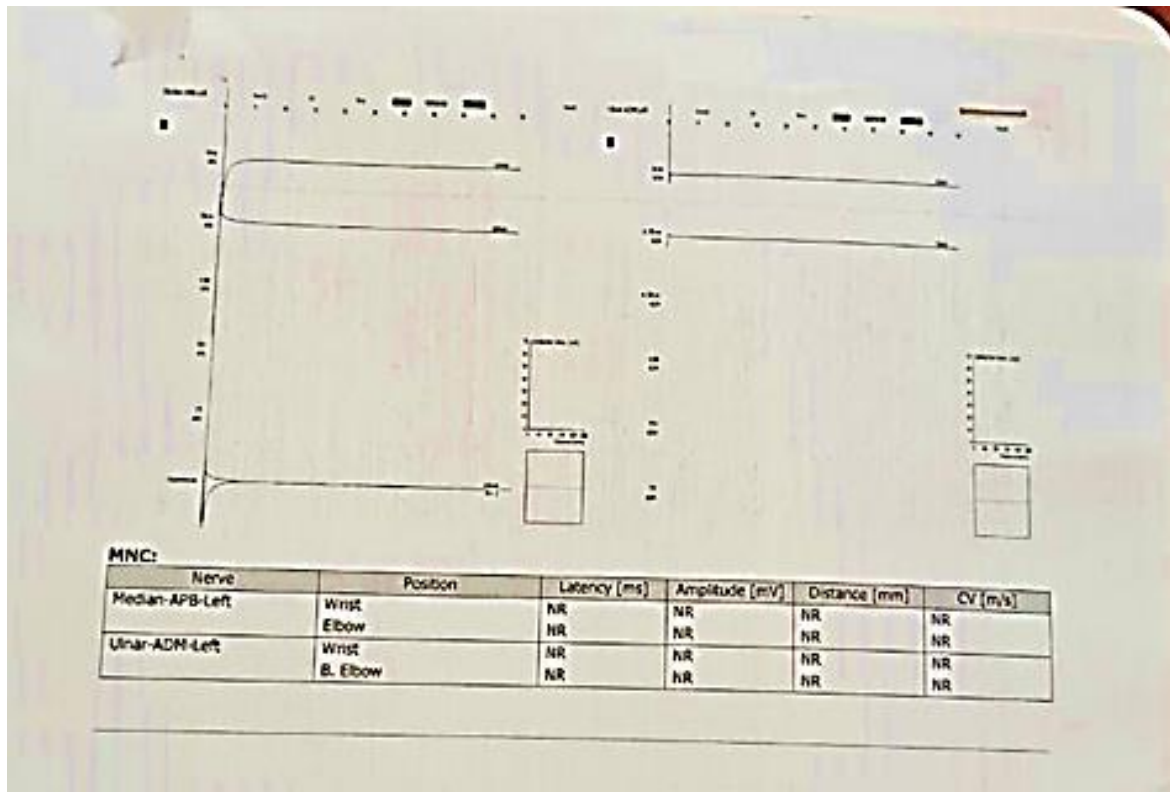


Figure (6): Photo of nerve conduction study (NCS) of male patient 32 years old with history of assault, showed electrophysiological evidence of left median and ulnar nerves severe axonal injury at wrist .

DISCUSSION

Permanent infirmity is a significant legal and medical concern. It is defined as an irreversible functional restriction (loss function of an organ) or irreversible deficiency (loss of a functioning organ) caused by physical or mental injury that keeps a person from going about everyday tasks (Kearney, et al., 2004).

This study was conducted on all cases with final diagnosis of definite permanent infirmities over two years. The highest percentage of infirmity occurred in the age between 18- 40 years. This result was in agreement with Abd El-Hady et al. (2013) and Hafez et al. (2020). This result can be explained by the fact that this age group is the age of maximum activities and are more likely to be exposed to workplace dangers, accidents, and fights. (Martino and Chappell, 2006).

The current study's findings, however, disagreed with a 2009 World Health Organization (WHO) research that found that those over 60 years had the greatest prevalence rate of impairment. This could be clarified through the fact that compared to Egyptian society, developed nations have significantly

older populations (United Nations (UN), 2015).

Regarding sex, most cases were males (72% versus 28% females). Kirsten (2004) and Hwait et al. (2020) found in their studies that males outnumbered females. This could be explained by the higher exposure of men to environmental hazards, RTAs, violence, and more likely to work in factories and construction industries with risky running machines, making them more prone to injury. There was no significant difference between both sexes in different age groups, as both sexes in different age groups are exposed to different dangers of accidents, environment and violence.

Most cases in the current study were from rural areas. This finding may be due to the rural nature of Menoufia governorate and its population. In addition, rural areas have low cultural quality, medical facilities and poor environmental and occupational safety standards leading to trauma and the resulting disability (Banks et al., (2017), Zhang, et al., (2023). These findings agreed with Sweilum (2002), Nour El-Din (2004), Zanaty (2005),

Abd El-Hady et al. (2013), Hafez et al., (2020) and Zhang, et al., (2023).

Manual workers constituted the greatest percentage of cases involved in the study. This reflects the hazards that the manual workers are facing during their work and high incidence of trauma. Near results were found by Hafez et al., (2020), Hwait, et al.,(2020). However, Abd El-Hady et al. (2013) mentioned that farmers constituted the highest percentage of the patients included in their study.

The majority of injuries were caused by blunt instruments, followed by sharp instrument and the least caused by firearm. Blunt instruments were the leading cause for most injuries as they are more prevalent than sharp or firearm weapons which are illegal with strict regulations in Egypt (World Health Organization (WHO), 2015). Also, Girgis et al., (2017) discovered that the most prevalent injuries were blunt injuries. While, in contrast, Cemalovic et al., (2016) reported that sharp injuries were the highest prevalent especially between workers.

Although the sharp instrument's legal ban in Egypt, most of homicidal cases were committed using sharp instrument, while, the majority of accidental cases were caused by blunt instrument. Park & Son, 2018 reported that sharp instruments were the most commonly used weapons in homicides; this reflected that the motive of homicidal assaults was to cause harm, maybe even death. Zanaty, 2005, Shalabi, 2006 and Abd-El-Hady et al., 2013 found nearly the same results.

Regarding circumstances, road traffic accidents (RTA) had the highest prevalence followed by assault then occupational hazard and the least were falls. In agreement with the present study are the findings of Ghaleb et al. (2018) and Hafez et al., (2020) who found that road traffic accidents (RTAs) were the most leading cause of permanent infirmity cases included in their study. Worldwide, traffic-related accidents were a leading cause of disability and fatalities (World Health Organization 2013; Kandeel & Elagamy, 2018). The issue is getting worse in developing countries as World Health Organization (2018) declared that 93% of the world's fatalities on the roads occur in low- and middle-income countries (World Health Organization 2018). Road traffic accidents (RTA) constitute a significant global public

health problem because of their increasing occurrence, disabilities, fatalities, and negative social and economic effects (Hassan et al., 2022).

The high prevalence of RTAs in Egypt may be caused by a number of factors, including substandard infrastructure and low road quality. Regular road maintenance errors and an overloaded route with trucks, cars, motorcycles, and crosswalks might also be problems. (Fouda et al 2017). In addition, illegal risky driving like speeding, driving under the influence of drugs, not using a seat belt or child safety seat may be attributed to high incidence of RTAs in Egypt (Saleh & El-Sayed, 2023).

Accidental cases constituted most included cases followed by homicidal cases as most cases were due to RTAs. In contrast to the current work, Abd-El-Hady et al., (2013) and Hwait, et al., (2020) declared that homicidal cases were responsible for most of infirmity cases included in their study as their studies were done in medicolegal authority with different patient's selection where most accidental cases usually seek medical advice at different hospitals and usually didn't complete their complaints and gave up their rights (Skokry, 2016).

Concerning the scene, most cases occurred in the street followed by work. As the majority of these cases resulted from assault and traffic accidents and they are usually happened on the street. Zanaty (2005) and Hafez et al., (2020) found the same results.

Regarding type of permanent infirmity, impairment of movement was the most resulted infirmity, followed by amputation, and the least was erectile dysfunction. This was in agreement with Ghaleb et al. (2018) and Hafez et al., (2020). This can be clarified through that most of the injuries were caused by car accidents, assault and occupational hazards which affects mostly musculoskeletal system. Moreover, Hwait, et al., (2020) showed that, skeletal disabilities were the highest prevalent and the loss of internal organs and affection for sexual organs were the least common. This was agreed by those recorded by World Health Organization (WHO, 2011) that found that skeletal impairment was the most prevalent disability.

In addition, the present study revealed that there is a significant relationship between the types of disability and the leading cause.

Meanwhile, RTAs were the most leading cause of limitation of movement, brain and spinal cord affection and splenectomy. This suggests the danger of RTAs in Egypt that may lead to any type of trauma, polytrauma, disabilities, and even death.

However amputations were mostly caused by occupational hazards especially among manual workers and farmers mostly caused by rotating machines in factories and wheat threshing machines in fields. The threshing machine is one of the agricultural devices used to boost production, particularly in grain cultivation which separates wheat or grain from chaff and hay. When the time comes to collect the product, this machine frequently causes injuries especially to the upper extremities (Işık et al., 2012). Preventing upper extremities due to agricultural machines can be achieved through applying different safety measures. Keeping the part of the machine that causes the accidents under a protective shield, proper use of personal protective equipment, and adjusting the working hours of farming personnel, especially in the hottest months of the year, could be helpful in avoiding accidents brought on by farming equipment (Ozgenel, 2008).

In contrast, Saini, et al., (2021) reported in their study that accidents are the most prevalent cause of amputation. The growing incidence of amputation in developing nations is reason for worry because of the substantial morbidity and mortality that go along with traumatic amputations. Amputations cause severe functional disabilities with social problems and society overburden (Saini, et al., 2021).

In Egypt, disability affects about 10% of the population and is a major cause of suffering for over 25% of the population (disabled individuals and their relatives) (Metwally et al., 2023). These disabilities are driven by many causes either medical or traumatic, and their risk factors. If no control measures are implemented, disability rates point to a rise in the next years (Salama, 2012).

CONCLUSION

It can be concluded that most cases of permanent infirmity during the period of this

study were males, in the age group 18- 40 years, from rural regions, had basic level of education, manual workers and most cases were occurred accidentally. Most injuries were caused by blunt instruments. RTA was the most common circumstances followed by assault. Impairment of movement was the most resulted in infirmity and extremities were the most affected body parts.

RECOMMENDATIONS

Attention should be applied to application of strict regulations and laws. In addition, the study recommends enhancement and maintenance of roads and vehicles to decrease RTAs and use of protective measures as seat belt and head helmet to prevent severe injuries. Safety measures should be applied to workplaces and manual workers specially those involved in construction industry should use safety equipment.

REFERENCES

- Abd El-Hady, R.H., Thabet, R.H.; Ghandour, N.M. and Mandor, A.M. (2013):** Medico-legal aspects of permanent infirmities as a sequel of different types of injuries (a retrospective study in Assiut Governorate, Egypt). *Ain Shams J. Foren. Med. Clin. Toxicol.*, 20: 92-98.
- Banks, L. M.;Kuper, H., and Polack, S. (2017).** Poverty and disability in low-and middle-income countries: A systematic review. *PloS one*, 12(12), e0189996.
- Cemalovic N.; Rosic S., and Toromanovic N., (2016):** Analysis of the causes of occupational injuries and application of preventive measures. *Journal of the Academy of Medical science of Bosnia and Herzegovina*, 28(1):51–52.
- Cocchiarella L., (2018):** Disability assessment and determination in the United States. *American Medical Association*. [Online] Available at: <https://www.uptodate.com>. [Accessed 15th December 2019].
- Egyptian Penal Code (2003):** Article 240. Cairo: Egyptian Government. [Online] Available at: <https://www.refworld.org> [Accessed 15th March 2018].
- El-Saadani S. and Metwally S., (2019):** The quality of life of youth with disabilities in Egypt with special focus on educational achievement. *The Economic Research Forum (ERF)*. [Online] Available at:

- <https://www.erf.org.eg>. [Accessed 15th March 2020].
- Fouda E.; Youssef M, Emile S et al., (2017):** Pattern of major injuries after motorcycle accidents in Egypt: The Mansoura Emergency Hospital experience. *Trauma*, 19(1):39-45.
- Ghaleb, S.S.; Elwahab, H.D.A.; Shehab, A.M. and Hassan S.A.M. (2018):** Medico-legal aspects of disabilities due to orthopedic injuries and compensations in Egypt. *J. Foren. Leg. Med.*, 58: 34-40. doi: 10.1016/j.jflm.2018.04.008.
- Girgis N.; Zanaty A.; El Agmy S. and Soha A., (2017):** Patterns of facial trauma in menoufia university hospital. *Menoufia Medical Journal*, 30(4):1186-1192.
- Hafez, A. S.; Elgendy, I. S.; Zamzam, I. S.; Hassan, N. A.; Mohammed, N. E., and Madboly, A. G. (2020).** A Prospective Study of Medico-Legal Aspects of Permanent Infirmity Cases Examined at Forensic Medicine Authority-Cairo Department, Egypt. *The Egyptian Journal of Forensic Sciences and Applied Toxicology*, 20(1), 65-80.
- Hassan, R.; Abdel-Rahim, A.; and Hadhoud, R. (2022):** Study of Road Traffic Accidents Cases admitted to Ain Shams University Hospitals during Years 2017 and 2018. *Ain Shams Journal of Forensic Medicine and Clinical Toxicology*, 38(1), 1-10.
- Hwait, M.; Ramadan, M., and Abd Elfatah, A. (2020):** Permanent Disability between Current Medicolegal System and Reality (A Retrospective Study in Menoufyia Medicolegal Authority, Egypt). *Ain Shams Journal of Forensic Medicine and Clinical Toxicology*, 35(2), 23-33.
- Ingerman and Horwitz (2018):** Maximum Medical Improvement. [Online] Available at: <https://www.ihlaw.com>. [Accessed 16th December 2019].
- Işık, D.; Ceylan, M.F.; Tekin, H.; Karadaş, S.; Güner, S., and Canbaz, Y. (2012):** "Upper extremity injuries due to threshing machine.": 5-60.
- Kandeel, F. S., and Elagamy, S. E. (2018):** A prospective study on road traffic accident cases arrived at Menoufia university hospital over one year. *The Egyptian Journal of Forensic Sciences and Applied Toxicology*, 18(2), 99-118.
- Kearney, Penelope M., and Julie Pryor. (2004):** "The international classification of functioning, disability and health (ICF) and nursing." *Journal of advanced nursing* 46.2: 162-170.
- Kirsten N., (2004):** Gender differences in physical disability among an elderly cohort. *Journal of Public Health*, 94(8): 1406–1411.
- Martino V. and Chappell D., (2006):** Violence at work. 3rd ed. International Labor Organization (ILO), Geneva. 117-215.
- Metwally, A. M.; Aboulghate, A.; Elshaarawy, G. A.; Abdallah, A. M.; Abdel Raouf, E. R., El-Din, E. M. S., and ElRifay, A. S. (2023):** Prevalence and risk factors of disabilities among Egyptian preschool children: a community-based population study. *BMC psychiatry*, 23(1), 689.
- Nour El-Din F. (2004):** Medico-legal study on Head Injury and its Outcome in Menoufiya Governorate. Thesis for MD. Menoufiya University, Faculty of Medicine.
- Ozgenel, G. Y.; Akin, S.; Ozbek, S.; Kahveci, R., and Ozcan, M. (2008):** Severe hand injuries in children related to farm tractors: a report of 70 cases. *Ulus Travma Acil Cerrahi Derg*, 14(4), 299-302.
- Park, J., & Son, H. (2018).** Weapon use in Korean homicide: differences between homicides involving sharp and blunt instruments. *Journal of forensic sciences*, 63(4), 1134-1137.
- Saini, U. C.; Hooda, A.; Aggarwal, S., and Dhillon, M. S. (2021):** Patient profiles of below knee-amputation following road traffic accidents—An observational study from a level 1 trauma centre in India. *Journal of clinical orthopaedics and trauma*, 12(1), 83-87.
- Salama, R. (2012):** Caregiver burden from caring for impaired elderly: a cross-sectional study in rural Lower Egypt. *Italian Journal of Public Health*, 9(4).
- Saleh, A., and El-Sayed, A. (2023):** The Medicolegal aspects of road traffic accidents (RTAs) and evidence of Tau protein as a prognostic factor. *Ain Shams Journal of Forensic Medicine and Clinical Toxicology*, 40(1), 15-21.

- Shalabi R.; Al Amr Y., and khoujah E., (2006):** Vascular injuries of the upper extremity. *Journal Vascular Brasileiro*, 5(4):271-276.
- Shokry D., (2016):** Methods of Ascertainment of personal damage in Egypt. Cited In: *Personal Injury and Damage Ascertainment under Civil Law: State-of-the-Art International Guidelines* by Ferrara D. Springer, Cham,321-334.
- Singh, R.; Singh, H.K.; Gupta, S.C. and Kumar, Y. (2014):** Pattern, severity and circumstances of injuries sustained in road traffic accidents: A tertiary care hospital-based study. *Ind. J. Com. Med.*, 39 (1): 30-34. doi: 10.4103/0970-0218.126353.
- State Information Service (2017):** Care for people with disabilities. [Online] Available at Available at: <http://www.sis.gov.eg>. [Accessed 16th October 2016].
- Sweilum O (2002):** Medico-legal aspects of cases of abdominal injury to Menoufiya University Hospital. Thesis for MD, Menoufiya University, Faculty of Medicine.
- United Nations (UN, 2015):** Ageing and disability. UN. [Online] Available at: <https://www.un.org>. [Accessed 16th June 2018]
- World Health Organization (2013):** Global Status Report on Road Safety 2013, Geneva. World Health Organization, World report on road traffic injury prevention, Geneva, 2014. <http://whqlibdoc.who.int/publications/>.
- World Health Organization (2018):** Global status report on road safety 2018: Summary (No. WHO/NMH/NVI/18.20). World Health Organization.
- World Health Organization (2011):** World Report on Disability. [Online] Available at: <https://www.who.int/> [Accessed 16th January 2018]
- World Health Organization (2015):** Disability and health factsheets. [Online] Available at: <http://www.who.int/> [Accessed 16th January 2018].
- Zanaty, A.W.; Badawy, S.M., and Kamel S.M. (2005):** Medico-legal study of permanent infirmity in injured cases referred to Menoufiya University Hospital. M.D. Thesis. Faculty of Medicine, Menoufiya University.
- Zhang, S.; Wang, W.; Wei, M.; Luo, Y.; Long, W.; Li, L., and Jin, B. (2023).** Forensic characteristics of 4866 violent injury cases in Sichuan Province, China. *Scientific reports*, 13(1), 5959.

الملخص العربي

تقييم حالات العاهات المستديمة التي تم فحصها في قسم الطب الشرعي والسموم الإكلينيكية بكلية الطب جامعة المنوفية

فاطمة شعبان قنديل¹، رشا ممدوح عزب²

²1 قسم الطب الشرعي و السموم الكلينيكيه- كلية الطب -جامعه المنوفيه

تعد الإعاقة مسألة قانونية وطبية مهمة، كما تعد حوادث المرور على الطرق والاعتداءات والإصابات المهنية من الأسباب الرئيسية لحدوث العجز الدائم، ولكن حوادث المرور هي السبب الأكثر شيوعاً.

الهدف من الدراسة: يهدف هذا العمل إلى هو تقييم نمط حالات العجز الدائم التي تم فحصها بقسم الطب الشرعي والسموم الإكلينيكية بكلية الطب جامعة المنوفية خلال عامين.

المرضي وطرق البحث: أجريت هذه الدراسة على جميع الحالات التي تم فحصها بقسم الطب الشرعي والسموم بكلية الطب جامعة المنوفية للحصول على التقارير النهائية مع التشخيص النهائي للعاهات الدائمة المحددة على مدى عامين 2021 (جزء استرجاعي) و 2022 (جزء استباقي). وقد تم الحصول على الإذن من لجنة الأخلاقيات بمستشفى جامعة المنوفية ومن رئيس الطب الشرعي والسموم الإكلينيكيه.

النتائج: أجريت هذه الدراسة على 264 حالة. معظمهم من الذكور (72%)، في الفئة العمرية 18-40 سنة، معظمهم من المناطق الريفية، معظمهم حاصلين على مستوى تعليم أساسي، ويعملون بأعمال يدوية وأغلب الحالات حدثت بشكل عرضي. معظم الإصابات كانت بألات راضه (63.3%)، تليها أدوات حادة (34.8%). وفيما يتعلق بالظروف، كانت حوادث المرور هي الأكثر شيوعاً (48.9%) يليها الاعتداء (35.2%). وقد كان ضعف الحركة هو أكثر حالات العجز الناتجة (50.8%)، يليه بتر الأطراف.

ويوصى بالاهتمام بتطبيق اللوائح والقوانين الصارمة. بالإضافة إلى تعزيز وصيانة الطرق ويجب تطبيق تدابير السلامة في أماكن العمل ويجب على العمال اليدويين وخاصة المشاركين في صناعة البناء استخدام معدات السلامة.