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Research Article

### THE ROLE OF RADIOLOGY AND PHYSICAL THERAPY IN DIAGNOSING AND TREATING FRACTURES IN TRAFFIC ACCIDENT PATIENTS

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**Abstract:** *The aim of the current study is, What are the types of fractures that affect humans in traffic accidents, what is the role of x-rays in diagnosing fractures for patients, treatment methods for those with fractures in traffic accidents., The questionnaire was created electronically via the Google Drive program, and then it was distributed via mobile phone on the social networking program (WhatsApp). Using e-mail for all participants to respond to the questionnaire. 600 questionnaires were distributed to all mobile groups, and 550 questionnaires were received on the researcher's e-mail. (The target group is residents of the Holy City of Mecca, aged 25-60 years).*

**Keywords:** *role, radiology, physical therapy, diagnosing, treating fractures, traffic accident patients.*

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**1-INTRODUCTION:**

A traffic incident, also called a motor car crash, traffic accident, or crash, place when a vehicle collides with another car, a pedestrian, animal, road debris, or other stationary hurdle, such as a tree, pole, or building. Traffic accidents often outcome in injury, disability, passing, and property destroy as well as financial costs to both society and the personals implicated. Land transportation is the most risk situation that people deal with on a daily basis, but the wound numbers resulting from these accidents do not attract media attention like other kinds of less frequent tragedies <sup>(1)</sup>. agents that contribute to accident danger are: vehicle design, operating speed, road design, weather, road environment, driving skills, impairment due to alcohol or medicines, and behavior, especially attacker driving, moonstruck driving, speeding, and street racing. In 2013, 54 million people worldwide were wound from traffic accidents <sup>(2)</sup>. This consequence in 1.4 million passing in 2013, while the number of deaths was 1.1 million in 1990 <sup>(3)</sup>. About 68,000 of these incidents occurred to children under the age of five. Almost all high-income countries have declining death rates, while the majority of low-income countries have reducing death rates due to traffic accidents. Middle-income countries have the highest fatality rate with 20 deaths per 100,000 population, accounting for 80% of all road deaths with 52% of all motor vehicles. While the death rate in Africa is the highest (24.1 per 100,000 population), the lowest is found in Europe (10.3 per 100,000 population) <sup>(4)(5)</sup>.

In outpatient physical therapy settings, neck suffering is a popular condition for which patients seek curing. Although a specific pathoanatomical source cannot be routinely identified in the vast majority of patients with mechanical neck pain, a small number of patients may have a serious underlying medical condition that may be causing the neck pain, which would preclude physical therapy intervention. <sup>(2-7)</sup> Fractures of the cervical spine are one example of a serious underlying medical condition that can reason neck pain. Fractures of the cervical spine should be

considered in the presence of major trauma (ie, motor vehicle accident) or in the presence of small trauma for older individuals. <sup>8,9</sup> In an effort to recognize cervical spine fractures in a timely and accurate manner, patients who have sustained trauma and have the possibility of a cervical spine fracture should routinely receive conventional radiographs initially <sup>(12-14)</sup>. Some cases of missed cervical spine fractures in patients with neck pain following trauma have been reported in the chiropractic literature <sup>(7-11)</sup> These cases involved patients with neck pain following trauma who were seeking chiropractic treatment and whose radiographs taken early after their injury were found to be negative for a fracture. In some of the cases, the chiropractors demand repeat radiographs after the initial checking but before applying treatment, <sup>(7-9)</sup> and the cervical spine fractures were uncovered. In other cases, chiropractic or physical therapy treatment was initiated without repeat radiographs, and the fractures were not detected until later in the course of care. <sup>(10,11)</sup> We were not able to set any reported cases of missed cervical spine fractures in the physical therapy literature. If physical therapists suspect an underlying cervical spine fracture, it would be necessary to require or recommend diagnostic imaging before initiating curing for patients with neck pain following trauma. The purpose of this case report is to describe a patient referred for physical therapy treatment of neck pain who had an underlying hangman's fracture that precluded physical therapy intervention.

**2-MATERIAL AND METHODS:**

The study started in (the holy city of Mecca in Saudi Arabia), began writing the research and then recording the questionnaire in June 2023, and the study ended with data collection in September 2023. The researcher used the descriptive analytical approach that uses a quantitative or qualitative description of the social phenomenon (The role of radiology and physical therapy in diagnosing and treating fractures in traffic accident patients). This kind of study is characterized by analysis, reason, objectivity, and reality, as it is concerned with individuals and societies, as it studies the variables and their effects on

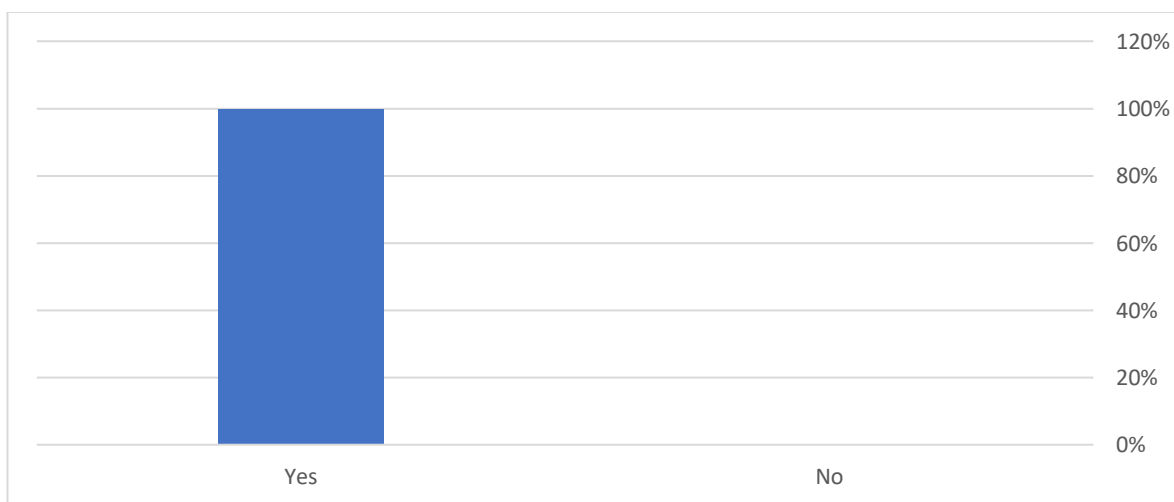
the health of the individual, society, and consumer, the spread of diseases and their relationship to demographic variables such as age, gender, nationality, and marital status. Status, occupation <sup>(15)</sup>, And use the Excel 2010 Office suite histogram to arrange the results using: Frequency tables Percentages <sup>(16)</sup>. A questionnaire is a remarkable and helpful tool for collecting a huge amount of data, however, researchers were not able to personally interview participants on the online survey, due to social distancing regulations at the time to prevent infection between participants and researchers and vice versa (not coronavirus participation completely disappearing from society). He only answered the questionnaire electronically, because the questionnaire consisted of seventeen questions, all of which were closed. The online approach has also been used to generate valid samples in similar studies in Saudi Arabia and elsewhere <sup>(17)</sup>

### 3- RESULTS AND DISCUSSION:

The percentage of approval to participate in the research questionnaire was 100%, and the percentage of ages between 25 and 44 years was equal, 14.3%, and also the same percentage for ages 55-60 years. While the percentage of ages between 45-54 years was 57.1%, the percentage of participating males was 71.4%, and the percentage of participating females was 28.6%. As for their nationalities, they were all 100% Saudi. As for their tasks, they were as follows:

Student: 0%, government employee: 57.1%, private sector employee: 0%, housewife: 28.6%, freelancer: 11.3%, entrepreneur: 0%. As for the situation Educational: Primary 0%, Intermediate 0%, Secondary 15%, University 75%, Diploma 5%, Doctorate 5%. The first question: What are the signs and symptoms of fractures? Choose a paragraph from the following? Severe fracture in the area of injury 0%, swelling, bruising, bluish or pain when pressing on the injury 14.3%, sometimes, presence of some deformities, when the fractured organ is out of place 0%, tingling feeling, Numbness in the affected area: 0%, all of the above: 85.7%. The second question is about what types of fractures are: fixed fractures, open or compound fractures, transverse fractures, oblique fractures, and comminuted fractures? The answer is 100% yes and 0% no. The third question is about whether the location of the fracture differs, whether it is in the upper limbs or the lower limbs. She may be under one goal and perspective in her treatment after the injury? Yes 85.7% and no 14.3%. The fourth question: What methods do doctors use to treat fractures? Fixed splints, splints or braces, popular, external fixation of the fractured part, internal fixation? Yes 85.7% and no 14.3%. The fifth question: Where does the actual role of the physical therapist begin in helping the patient return to his normal functions and lead his life after the fracture? Yes 100% and no 0%. The questions from the sixth to the last question also had the same answer (yes 100%, and no 0%). (figure No.1).

**Figure No.1: Through the opinions and trends of participants on the role of radiology and physical therapy in traffic accidents**



### 4-CONCLUSION:

Radiology is an important in diagnosing fractures (of all types), and thus gives the treating physician a wide opportunity to diagnose the injury. Physical therapy also plays a major role in gradually returning patients to their normal condition through the treatment plan followed with the patient and his psychological rehabilitation.

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#### REFERENCES:

- 1- Peden, Margie; Scurfield, Richard; Sleet, David; et al (2004). World report on road traffic injury prevention. Geneva: World Health Organization. ISBN:9241562609. Archived from the original on 12/12/2021. Viewed on 10/09/2020.
- 2- Gobar Burden of Disease Study 2013, Collaborators (22 August 2015). "Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013." *Lancet*. C. 386 p. 9995: 743–800. DOI:10.1016/s0140-6736(15)60692-4. PMC:4561509. PMID:26063472. {{Refereed journal citation}}: |first1= with a common name (help)
- 3- GBD 2013 Mortality and Causes of Death, Collaborators (17 December 2014). "Global, regional, and national age-sex specific all-cause and cause-specific mortality for 240 causes of death, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013". *Lancet*. C. 385 p. 9963: 117–71. DOI:10.1016/S0140-6736(14)61682-2. PMC:4340604. PMID:25530442. {{Refereed journal citation}}: |first1= with a common name (help)
- 4- Gobar status report on road safety 2013: Supporting a decade of action (in English and Russian). Geneva, Switzerland: world health organization WHO. 2013. ISBN:978-92-4-156456-4. Archived from the original (PDF) on 2021-11-05. Retrieved 2014-10-03.
- 5- Katsaris S (2016) A Kyriakidis. "I retrospective study of pediatric road traffic injuries in Greece: Focus on weekends". *Injury*. C. 47 p. 11: 2598–2599. DOI:10.1016/j.injury.2016.08.021. PMID:27592186.
- 6- Childs JD, Fritz JM, Piva SR, Whitman JM. Proposal of a classification system for patients with neck pain. *J Orthop Sports Phys Ther*. 2004;34:686–696
- 7- Crowther ER. Missed cervical spine fracture: the importance of reviewing radiographs in chiropractic practice. *J Manipulative Physiol Ther*. 1995;18:29–3
- 8- Geubert GM, Ryan TA. Missed diagnosis, manipulative nightmare: a case report and literature review. *Journal of the Neuromusculoskeletal System*. 1995;3:92–96.
- 9- King SW, Hosler BK, King MA, Eiselt EW. Missed cervical spine fracture-dislocations: the importance of clinical and radiographic assessment. *J Manipulative Physiol Ther*. 2002;25:263–269
- 10- Nykolation JW, Cassidy JD, Dupuis P, et al. Missed cervical spine fracture dislocation prior to manipulation: a review of three cases. *JCCA J Can Chiropr Assoc*. 1986;30:69–75
- 11- Regelink G, de Zoete A. A missed Jefferson fracture in chiropractic practice. *J Manipulative Physiol Ther*. 2001;24:210–213.
- 12- Stiell IG, Wells GA, Vandemheen KL, et al. The Canadian C-spine rule for radiography in alert and stable trauma patients. *JAMA*. 2001;286:1841–1848.
- 13- Blackmore CC, Emerson SS, Mann FA, Koepsell TD. Cervical spine imaging in patients with trauma: determination of fracture risk to optimize use. *Radiology*. 1999;211:759–765.
- 14- Mower WR, Hoffman JR, Pollack CV Jr, et al. Use of plain radiography to screen for cervical spine injuries. *Ann Emerg Med*. 2001;38:1–7.
- 15- Alserahy, Hassan Awad, et al (2008), *The thinking and scientific research*, Scientific Publishing Center, King Abdul-Aziz University in Jeddah, the first edition
- 16- Al Zoghbi, Muhammad and AlTalvah, Abas (2000), *Statistical system understanding and analysis of statistical data*, first edition, Jordon-Amman
- 17- Kadasah, N.A.; Chirwa, G.C.; et al. Knowledge, Attitude, and Practice Toward COVID-19 Among the Public in the Kingdom of Saudi Arabia: A Cross-Sectional Study. *Front. Public Health* 2020, 8, 217.