

# Criminal Responsibility For Negligence In Dental Implants In Jordanian Legislation Preparation

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## Abstract

The background of the study is the dental profession, like any profession, which contains the so-called error and we cannot suggest that there are no medical errors in the dental profession, so this study combines the dentist's error in the dental implant procedure as one of the examples of medical errors, negligence and legal responsibility. This study combines dentistry on the one hand and the law on the other hand, therefore may turn to legal medicine in the field of dentistry, especially in dental implants in Jordanian legislation, and laying the foundations for the correct therapeutic medical procedure in the specialty of dental implants.

Type of studies reviewed: Medical studies specialized in dental implants and focus on medical error in legal studies and the Jordanian Medical Liability Law of 2018 and some other Arab laws

The Results: The existence of medical errors as a result of medical procedures that violate the principles of Dental profession in form of negligence should be

exposed to criminal responsibility. The dentist's professional obligations encompass carelessness, insufficient precautionary measures, or failure to adhere to laws, rules, and directions, both prior to, during, and subsequent to the dental implant operation.

Keywords Error in diagnosis, Medical Liability, Medical Error, Medical Negligence, Medical Procedures, Dental Implants.

### **Methods:**

The researcher followed the analytical approach by analyzing the rules of the Jordanian Medical Liability Law of 2018 and the extent of their application to the criminal responsibility of the (dentist) doctor with regard to the allocation of dental implants and clarifying its forms of medical errors represented by negligence and analyzing them, as well as, highlighting Arabic country's medical laws.

### **Introduction**

Dental implants are defined as implants that have several functions, which are placed inside the mucous membranes, or inside the jawbones, to be supported by fixed or removable dental prostheses.

In the event that a person loses teeth, it is not difficult to find the appropriate solution for him/her; to practice his/her normal life in terms of the function of the teeth, or the cosmetic form of the teeth, and because it is considered one of the common operations in dentistry; dental implants require important procedures for their success from pre-surgery procedures, surgery or dental fixtures supported by implants, and there are several ways to perform implants, including immediate implants, immediate loading implants or traditional implants. There exists a multiplicity of stages, with the initial stage being as follows:

#### **1. Stages of dental implants.**

##### **1.1 Medical examination: Pre-dental implant surgery**

(A) The medical examination stage takes place at the first visit to the doctor after obtaining his/her consent to perform dental implant surgery, because

the transplant process must be carried out within certain controls and conditions, and to reduce medical risks, the doctor must take the patient's medical history.

- (B) People for whom dental implants are contra-indication, in the event that the doctor performs dental implants for them, the doctor's error may be considered a serious medical error that exposes the perpetrator to criminal medical responsibility, because it is one of the principles of the profession and it is self-evident for any doctor.

In law case no. 153 of 2015 - East Amman Magistrate Court issued on 29-10-2017, which stipulates that (a patient went to a dentist to make implants for the lower jaw of the interior teeth and after the implant procedure, she suffered from severe pain in around the implants and numbness in the lips of the lower jaw, so the patient went to the dentist who performed the implant for checkup, the doctor told her that these symptoms are normal and there is no fear, so she went to another doctor and did a panoramic x-ray, and after diagnosis, the other doctor found a failure in the implants and the presence of implants inside the nerve canal in the lower jaw, which led to numbness in the lower jaw and lower lip, then the patient submitted the complaint to the syndicate, whom issued a report stating the existence of a medical error in dental implants by the first doctor and then the syndicate referred to the doctor to complete the medical procedure, the doctor's work ended to put the implants and remove the failed implants, and the other dentist wrote a report stating the patient's condition before the medical procedure, which is performing the implant for her.

Although there is no issuance of criminal case in this matter, but the case in general is valid for the existence of the medical error as the court decided to oblige the defendant, the dentist, to pay the value of the claim of 1720 JD to the plaintiff, who was the subject of medical error.

#### **RADIOGRAPHIC ASSESSMENT:1.2**

The implantation of implants depends on the thickness of the bone and the appropriate places to that are suitable for implanting. the circumference and thickness

of the mucous membrane or gums of the mouth that can hide the real dimensions of the basic skeleton, the need to conduct radiological examination falls among the matters of diagnosis and treatment, (2-3)

Therefore, the responsibility of the doctor comes according to the operation stages, if the dentist violates in the first stage, it is considered negligence or lack of precaution and also falls within the category of error by not observing laws and regulations. This is stipulated in the Jordanian Medical Liability Law, which means that the doctor must use one of the allowed means on the patient according to his health status or the type of medical procedure (4), which means the dentist should use one of the allowed and the appropriate means for the medical condition and therefore may lead to serious or minor medical complications or even risks.

If we look at the types of radiology, we find with regard to dental implants that there are types that the doctor must request in the first choice because of their importance and accuracy.

### **1.2.1 Computerized Tomography (CT) Computed Tomography (CT) or CBCT**

Three-dimensional imaging, which creates clear schematic sections of the bone, distinguishes between soft tissues and bone tissue clearly, and reformulates the image to create a cross-sectional or longitudinal section to define the location of future implant.

#### **(1) Opg or Panorama Rays:**

Two-dimensional panoramic X-rays, to measure the height & width of the bones, and bone density, in the event that the patient's multiple implants are not correct to rely on them to know the limits of the three-dimensional implant, it is in the second option because of its low importance, as the responsibility lies on the doctor in the absence of this image as a preliminary diagnosis of the implant and the absence of a CBCT image (5).

#### **(2) Conventional radiographs, conversely, periapical radiographs**

Used to see the area magnified, as one of the disadvantages of this image is that it does not give the

real dimensions, it is not used to plan for implants, but is used to see the teeth closely in other medical treatments, including endodontic treatment, the traditional x-ray image may be taken before dental implants, and if this is done, the dentist's procedure is incorrect and incomplete, and therefore this procedure is one of the forms of medical error represented in the form of negligence in taking precaution and caution as possible, The doctor may use this radiograph in the post-transplant stage to complete the medical procedure fully and as a preventive measure(6).

Therefore, in the pre-implant stage and when planning the dental implant stage, the seriousness of any operation in terms of the aesthetic appearance of the mouth and teeth must be studied, as aesthetic modification factors are determined by cosmetic risk assessment.

If the risk level is low, such as the healthy medical condition of the person, the patient is cooperative, the aesthetic expectations of the patients are low, non-smoker, the lip line is low, the shape of the teeth is rectangular, the gingival biotype is thick, the anatomical shape of the bone is not lacking, the anatomical shape of the soft tissues is intact, and the adjacent teeth are intact, all these factors do not significantly affect the cosmetic shape of the mouth and teeth, unlike the factors that we will be mentioned, which affect the cosmetic shape of the mouth and teeth, aesthetic factors, and the level of risk is high. In the presence of health diseases, such as diabetes, the aesthetic expectations of patients are very high, smoking more than 10 cigarettes a day, the lip line is high, the shape of the teeth is triangular, the biotype of the gingiva is thin, the anatomical shape of the bone is vertically resorption, the anatomical shape of the soft tissues is thin, and the adjacent teeth are not healthy or have been restored (7). The doctor must study the case to see the factors that affect the aesthetic appearance of the mouth and teeth, and the researcher sees the bottom line, in the event of a high risk, the rate of pathological complications rises, and therefore medical responsibility decreases, but in the event of low risk, the percentage of pathological complications increases, and therefore the medical responsibility falls on the doctor because there are no

pathological symptoms that raise the rate of implant failure.

### **1.3: Third: Surgical Procedure for implant**

#### **1.3.1: Conventional implants:**

Or it is called a long-term implant placement.(8) Choosing the time for dental prosthesis above the implant, important in determining the medical responsibility of the doctor, for example (implant procedures and immediate loading) in terms of times differ from (traditional implant), in the traditional implant, moving to the installation stage at least 3 to 4 months, is one of the contraindication depending on the status of the upper or the lower jaw, and in the event that the doctor moved to the second stage the 3 to 4 months of the end of the above mentioned time span, then he is making a professional mistake, because the implant will fail, because the traditional implant depends on the integration stage Osseo integration, which is one of the most important stages in which the doctor determines the failure or success of the implant(9).

The procedures and controls of this traditional implant and medical responsibility for immediate implants are examples of medical errors that made the patient suffer from the loss in the interior teeth, so patient underwent dental implants and temporary fixtures, but the doctor before the lapse of the specified period for the bone healing period, which is from 3 to 4 months at least, took the next step, which is to perform fixed installations supported by the implant, here the error is a lack of precaution and negligence and also by not observing the laws and regulations according to the Medical Liability Law in The text of Article 7 \C, which means that the doctor must use tools and devices according to scientific and technical rules, as the text of the article is not limited only to diagnostic methods, as diagnosis is a medical procedure.

The steps of the basic dental implant process that affect the responsibility of the doctor can be determined if their application is ignored or overlooked as follows:

- |                                    |                                  |
|------------------------------------|----------------------------------|
| (1) Local anesthesia,              | (4) Bone drilling                |
| (2) Incision,                      | (5) Implant placement.           |
| (3) Lifting or opening the gingiva | (6) Close the incision or wound. |

- (7) Suture it if necessary. (9) Prosthetic stage or prosthodontics  
(8) Postoperative care. (10-11)

The sequence of these steps is important, as it is one of the basic things, and one of the scientific assets that the doctor must adhere to, but the criterion in determining whether the doctor has overlooked one of them is the patient's condition during the operation, but it is possible to divide some steps, and the error in these steps may be serious and others are simple.

### **3.2.1 Implant immediate loading.**

The dental fixtures for implants with immediate installation take place are either few days after implantation or a week, whether they are temporary fixtures or permanent fixtures or can be converted to the treatment of traditional implants if necessary, where the doctor must explain all treatment procedures to the patient according to the Medical Liability Law in the text of Article 7, while the traditional dental prosthodontics take place three months or more after the implant, while the installation above the implants with immediate installation is directly done after days or a week, and is not considered a medical error, because these types of implants are different, they do not depend entirely on the healing between the bone and the implant, it is logical that this does not happen within days, but they depend on the connection of the implant with the bone mechanically, so it depends on the number of implants(12).

### **4.1 The stage of prosthodontics:**

**1.4.1:Conventional Fixed Bridges:** Traditional bridges have proven their effectiveness and durability, they also have high success rates, with the presence of the cosmetic shape of the teeth, the zircon bridges that are glued with adhesive are different, because they need mastery at work, or sufficient experience, and among the disadvantages that can occur: are de-bonding or not sticking the bridge, or sticking it wrongly, so the dentist must take the necessary precautions in that, and these defects They appear as a maximum within a month of installation, and among the reasons for dismantling the compositions that are attached to the resin material: It is a defect in the process of gluing the bridge in the clinic,

because it leads to a defect in the basic process, due to the presence of oral fluids and not isolating the area sufficiently, to prevent liquids from reaching the adhesive, or because the adhesive does not reach the end of its final setting. (13-14-15-16-17). informing the patient and obtaining his consent for any medical procedure is necessary and important, and one of the possible complications that occur and be reported is the removal of screws - in most cases- that connect the implant to dental prostheses (18-19)

**2.4.1: Removable Partial Implant Dentures:** Removable partial dentures are solutions for patients with partial or complete loss of teeth, but one of the disadvantages of removable partial dentures is to cause inflammation in the supporting tissues of the teeth, as it can cause movement of some teeth or loss or decay, or resorption in the bone on which the partial movable dentures are based, , , and are also used as a permanent solution over the implants, and fixed in cases in which people are not allowed to make fixed dental prostheses for them, and their uses also include using them as temporary prostheses until the final installation over the implants in certain cases. (20-21-22)

The removable prosthesis is not a cosmetic solution, but it is a temporary solution, as cosmetic solutions are for fixed dental prostheses in the first option, and they are better than mobile dentures, whether they are fixed with implants or not. If the position of the mouth, teeth and bone allows fixed dental prostheses supported by implants, the dentist performs this procedure, and if it is other than these things, the doctor resorts to a less aesthetic solution, which is movable dental prosthodontics, and the doctor's responsibility in this case is to provide adequate care to the patient, but in the first case, certain conditions must be met that we will be mentioned later to differentiate between the doctor's responsibility in terms of care or achieve the result. (23)

**1.4.3: Temporary prostheses:** used to maintain the occlusion of the teeth, and to improve the aesthetic appearance of patients missing the front teeth, and between the first stage and the stage of fixed prostheses, the doctor must plan and determine the type of



temporary prostheses before the surgery for implants (24-25).

In the event that the doctor neglected the patient by not given him the temporary installations, it affects the future results of the implant, and therefore this affects the moral or psychological aspect of the patient leading to change in his external appearance, as doctor did not take the necessary care for the patient in his backwardness or laxity. One of the functions of temporary prostheses is also that doctor help to heal the gums and soft tissues, as these fixtures are similar to the final fixtures that will be installed after the completion of the specified period after planting, and it is possible to install on them a movable kit supported by implants or a permanent fixed bridge or by screws (26).

### **1.5: Immediate implant loading**

At the present time, immediate installations are made for implants supported, in order to reduce the treatment time for patients, the concept of implants with immediate loading does not include the idea of healing or bone integration after the transplant, and the patient does not have or needs to use temporary fixtures, which makes the chewing, speech and comfort more difficult, but rather takes into account the psychological, functional and cosmetic state of the teeth, in the first stage the implant depends on the ability to bind to the bone mechanically and then the bone integration occurs, in implants with immediate composition, The dentist increases the number of implants to increase mechanical stability, so the pressure on the rest of the implants decreases and help to heal the bone, and this is unlike traditional implants that depend on bone healing, so we do the second stage, which is fixed installations, and there are people who are forbidden to perform the transplant process with immediate installation for them, such as the presence of bruxism or dental instrument, because this leads to wrongly pressure the implants, which leads to early failure, if the doctor does this work, this procedure may be considered a serious mistake, because it violates the principles of the profession. (28)

Implants with immediate installation also involve an aspect of risk because of the difference in length and size from traditional implants, which puts the possibility of

nerve injury or a breach in the sinuses, and the chance of implant failure in these places is great if the angle is not correct from the beginning and not to repeat the procedure again as well, the site of the implant is in the cortical bone, while in traditional implants, the chance of success is greater according to studies, and as for dental structures above Implant with immediate composition, the doctor must take into account the absence of occlusion, because this will affect the implant, which is likely to fail it (29), or a fracture in them, or failure in the dental prosthodontics, it is possible to use any of the materials that are used in the manufacture of fixed dental prosthodontics, with no impact on the implants in terms of their failure, or in terms of healing with bone, and one of the reasons for the failure of the implant as we mentioned is malocclusion. (30-31-32)

#### **1.6: Responsibility of the dentist in the planning of dental implant surgery :**

Every doctor must make planning for the implant process and its initial conception, so he must be aware of the possible outcome of the occurrence, such as the chance of implant failure is large or small, and the amount of a person's loss of bone after implantation as a complication of the implant, so he must make the appropriate decision through initial planning, and make a surgical template if the doctor needs to, and the researcher believes that dental implants can have failure for several factors, so the reason that led to the failure of the implant must be determined By the doctor, there are factors that initially determine the factors that led to the failure of the implant, but you must also know the circumstances surrounding the doctor or the patient to evaluate the error, whether it is serious, simple or there is no error, for example, the presence of inflammation around the implant has several reasons, including contamination during the implant process, or the patient's irregularity in maintaining oral and dental hygiene, or the presence of gingivitis in the teeth adjacent to the implant, for example.

We can determine the type of implant failure in an example that shows that the first case of implant failure is in the stage of bone healing that has more than one factor, while the location of the implant, whether it

is cosmetic or to achieve the function, is easy to detect, because the location and planning of the implant must be accurate, so it is considered one of the serious mistakes, as the error in the implant site is one of the cases of implant failure if it does not achieve the function or cause complications to the patient.

The Saudi law in the Directorate of Health Affairs for those who seek to investigate medical errors must fill out the attached form (1) and the researcher also suggests the inclusion of table (No. 1) and the addition of some elements are not mentioned, adding some elements that are not mentioned and applying it by the competent authorities to indicate the type of doctor's responsibility based on the Jordanian Medical Liability Law No. 25 of 2018 and the Directorate of Health Affairs in Saudi Arabia, according to the patient's and doctor's data during the investigation of the table .

Looking at the attached table from the Directorate of Health Affairs in the Kingdom of Saudi Arabia, we find that some forms of medical errors were not listed, such as an error in diagnosis, negligence, lack of precaution or non-observance of laws and regulations, and that the degree of gravity in the medical error was not mentioned, the percentage of error or disability, and a statement of the limits of the dentist's commitment to whether to exert care or achieve a result, and the names of the doctors participating in the procedure and in the event of a repetition of the medical error, or in the case of repeating the same error for the same procedure. And did you find a clearance between the patient and the dentist? Or impersonating the dentist's capacity or title, or prescription, or if the dentist is not licensed or not practicing the profession, or the establishment is not licensed for medical work according to specialization, as the researcher suggests adding the previous elements to the table and approving it with the investigation authorities .(1).

<b>Committee comments:</b>			
<b>Is there a medical error?</b>	yes <input type="checkbox"/>	no <input type="checkbox"/>	✓
	The number of participants with a medical error		
<b>Names of participants with medical error</b>			

Their names appear in the complaint record			
If yes, please complete the information below:			
	The type of medical error in which the health practitioner has committed )You can choose more than one option(	The name of the health practitioner	mistake percentage
1	error in treatment		
2	He did work beyond his competence or capabilities		
3	Ignorance in technical matters is supposed to be familiar with those who were in his specialty		
4	Use medical machines or devices without sufficient knowledge of how to use them		
5	He did not take precautions to prevent harm from such use		
6	Lack of follow-up, control and supervision		
7	Not consulting the patient's condition that requires his help		
8	He did not undertake to exercise vigilant care with the scientific origin		
9	Impersonating a title given to health professionals		

## 2. Types of medical-surgical error in dental implants

Medical surgery is a procedure to cut or incision in the living tissues of a person, whether the work to be performed is cosmetic or non-cosmetic, therapeutic, and we have divided medical errors into three; negligence, lack of precaution & violation of laws and regulations.

### 2.1The concept of negligence

The negligence is summarized in the negative activity or abandonment, - as we mentioned - which is the omission of the offender in not taking the duty of caution and precaution, so the dentist's omission to take the duty of caution and precaution appears in a number of cases of surgery as follows:

For example, performing dental implants, but the doctor did not take the x-ray images before the implant, or did not work well-planned to perform the implant, one of the basic elements, in the researcher's opinion, is the presence of CT diagnostic rays, so two-dimensional radiology images are not enough to perform the implant, and performing dental implants in it, the possibility that the implant site is incorrect In the event

of a wrong planning of the implant site, it can affect the nerve tissue or jaw nerves or enter them to the sinus area, for example, it also affects the location of the implant in performing its function, and the installation above it fixed dental prostheses or mobile dental prosthodontics,

## **2.2: Types of negligence**

**2.1.2: Error in diagnosis:** The diagnosis is defined as the dentist's attempt to know the disease, its degree, seriousness, development and all the surrounding circumstances. And patient general health condition, history and genetic diseases, the diagnosis is one of the most important and accurate stages of the relationship between the doctor and the patient, as this stage determines the type of disease or determines its characteristics, causes, degree of seriousness and the possibility of aggravation and write a treatment plan before starting treatment. (33-34)

Therefore, the dentist must at every stage, including the first stage, which is the diagnosis, take the duty of precaution and caution, taking into account the scientific principles of treatment, and when standing on the idea of the dentist's responsibility for the error in the diagnosis, a distinction must be made between a scientific error and negligence, as scientific errors do not necessarily constitute a medical error and therefore do not entail the responsibility of a dentist unless for serious ignorance of the priorities of medicine, as the dentist's responsibility for the error in diagnosis varies according to the dentist's scientific degree and specialization, as it is different For doctors with specialization than general practitioners, because the specialist is supposed to be more capable by virtue of his specialization. (35-36)

This was confirmed by the Egyptian Court of Appeal, where it ruled that a doctor is subject in terms of responsibility to the general rules, so the doctor is asked for every fixed error in his right on the face of the investigation, whether ordinary or technical, whether it is easy or serious, but for specialist dentist, severity must be used, and make them responsible for any error, even if it is easy, especially if the patient's condition worsens because of their treatment, because the performance of their duty must be accurate and not neglected.

In order to determine the picture of error in diagnosis, it is usually by abandonment or negligence in not requesting pre-medical examinations and lack of precaution in requesting examinations and they were not sufficient, so it depends on his skill in extracting and concluding the rest, while non-observance of laws and regulations in it is contrary to the text of Article 7 of the Jordanian Medical Liability Law (37-38).

**2.2.2: Error in treatment:** As a general rule, the origin is the freedom of the doctor to choose the treatment method he sees. It is not restricted to follow a certain method, provided that it adheres to the recognized scientific principles and the dentist is not committed to achieving the result of healing, but must exert the necessary care to achieve full recovery or as much as possible. (39-40)

In conclusion, the doctor must choose the most suitable treatment according to the patient's interest and care. (41).

### **2.2.3: Error in the field of surgeries:**

Surgeries need a lot of care and caution, because of the seriousness and dangers or damage that may be caused to the patient as a result of performing the wrong surgeries(42), and the dentist must also conduct examinations for the patient before the operation, because this stage is one of the basics of primary medical procedures that the doctor cannot overlook, because this affects the next stages of treatment, and to protect the patient from future damages that may affect the patient, also the doctor must take into account the scientific and technical assets during the operation and afterwards, and must take the necessary precautions to account during- After the operation.

In general, a medical error is available during surgical intervention, when it is proven that the operation was not performed with the necessary skill or in violation of the principles of science, with the dentist's obligation to take care of the patient. One of the scientific principles in dental implants during the operation is to place the implant in the bone within a certain speed.

**2.2.4: Error in anesthesia:** Anesthesia has an important role in dentistry, as it is one of the things that the doctor relies on to relieve pain and to facilitate medical procedures (43).

The error in anesthesia is negligence in the appropriate dose for the patient or choosing a type that conflicts with the patient's health condition or giving anesthesia in the wrong way with regard to the anatomical shape of the mouth and teeth, causing damage and harm to the patient.

**2.2.5: Errors in radiology:** Diagnostic radiology is one of the medical means used to detect diseases, but it involves risk, so those who conduct radiography must take precaution if the person conducting these rays must ensure the health status of the patient, and that he does not suffer from any diseases (44)

The doctor's duty is to read this radiological image and give the diagnosis based on a report, as it is the duty of the doctor, who is responsible for choosing the type of image to be photographed for the patient and the correct choice according to scientific principles, as the dentist is also obligated to give the report for the work of radiology in the radiology center or clinics based on this report. The error in the rays lies in the doctor's negligence to take the needed precautionary measures to prevent the leakage of X-rays to the patient. Or take precautionary measures in cases of loss of consciousness or loss of capacity.

**2.2.6: Error in the duty of control and supervision:** Control and supervision of the doctor is one of the mandatory duties on him, whether during treatment or after treatment to avoid any damage or the possibility of complications in the future, regardless of the complications as a result of the disease or the result of the medical procedure or error or in all cases (45).

**2.2.7: The doctor made an action that is beyond the doctor-patient agreement:**

The agreement between the doctor and the patient or the patient's satisfaction is one of the conditions for the permissibility of medical work, and the burden of proof falls on the patient in the event of damage to him, and

images of satisfaction in medical relations: either implicit or explicit.

The patient silence during the medical exam by the dentist is considered a negative behavior that indicate the patient obedient to what the dentist says. It is a positive sign when the patient interacts with the dentist during treatment.

**The dentist's intervention without the patient's consent:**

The dentist may perform the medical procedure despite the patient's opposition, although his action is not justified, but based on the legalization of the law or the use of the doctor right, according to Articles 59 to 62 of the Jordanian Penal Code, or in case of necessity according to Article 89 of the same law, i.e. the doctor may assume consent, if the patient is in a situation where he cannot express his will, i.e. and he is unable to express his expression or unconscious, and the patient does not have a company with him, therefore, the doctor action in this case is permissible although it is contrary to the general rules.

When the patient loses his legal capacity, the consent of his legal representative is obtained, according to the legal order of guardianship (46)

Article (7/d) of the Jordanian Medical Liability Law of 2018 exempted emergency cases that cannot be delayed from the service provider's obligation to inform service recipients of the available treatment options.

Article (8 a) of the same law also allows the treatment of service recipients without his consent in emergency cases in which it is not possible to obtain his consent or in cases where there is an infectious disease that threatens public health.

**2.2.8: Using tools, devices, machines or materials without sufficient knowledge of the way they work, causing damage:** The possibility of damage by violating the scientific and technical principles by the doctor, if the doctor performs a medical procedure with tools that are not suitable for use, whether due to the patient's health condition or because of damage, with the possibility of causing the patient great damage.



Also, the doctor in the event of ignorance of the principles of medical work and the use of tools, in the use of machines or devices without good knowledge, is likely to cause damage, and the criterion in determining whether it is a mistake or not is to follow the scientific and technical principles of the doctor according to the rules of science as well

**2.2.9: Failure to take the duty of caution:** It is the duty of the doctor to be cautious to prevent damage, for example, the dentist must maintain the sterilization of tools and conduct medical treatments within a safe and healthy environment for the recipients of treatment and non-contagious, the breach and negligence of the doctor in this duty leads to harm to the patient and those around him

Among the common diseases in the field of dentistry and the possibility of their spread is high by virtue of surgical medical procedures: hepatitis C diseases, AIDS and blood diseases, so the doctor must deal severely and cautiously with the suspicion of one of the patients with these diseases, taking into account reporting the presence of a suspected case and giving medical service or treatment according to scientific principles and according to the rules of medicine within a facility equipped to receive such cases (47).

As for the UAE legislator, who mentioned the forms of medical errors, while the Jordanian legislator did not mention the possible forms of medical errors. The Jordanian legislator mentioned negligence and lack of precaution in the general rules of the Penal Code as a type of error crimes, as mentioned in Article 343 and of the Jordanian Penal Code, it was stipulated in the modern law of gross liability, in the text of Article 2 of the Medical Liability Law, through its definition of medical error. (48-49)

**2.2.10: Consulting others for those whose condition requires further opinion:**

Some patients suffer from more than one disease, and to prevent and avoid any damages or negative results to them as a result of medical treatment, in some cases, the doctor must consult other doctors to maintain the safety

of the patient and the success of the medical procedure, where the medical liability law provides for this.

**Example:** patients with benign tumors or malignant cancers whether under treatment or who has finished treatment. The dentist's duty will be to communicate with the doctor supervising his health condition. This procedure is important in the opinion of the researcher so as not to interfere with the patient's treatment plans so that the patient is exposed to side effects that affect the person's life and to maintain safety from future damage.

**2.2.11: The doctor did not commit to exert adequate care:** One of the forms of medical errors is the doctor's failure to provide adequate care, as it was mentioned in the Jordanian legislation in the Jordanian Medical Constitution issued for the year 1989 in Article I (4), which determines the work of the human doctor and his duties towards the patient, and these duties include exerting the effort and necessary care for the patient, and by referring to the Medical Liability Law. His effort and necessary care for the patient.

While the UAE legislator has placed it among the forms of medical errors, which is the lack of due care for the patient in the text of Article 6, the position of the UAE legislator is more correct in terms of classification, as it placed it among the forms of medical errors and did not include it within the ethics of the profession. The doctor's negligence in exerting the necessary care for the patient and exerting effort is one of the medical errors. (50)

**2.2.12: The doctor did not commit to achieve a result**

The legal texts did not explicitly mention the doctor's obligation to achieve a result, but rather focused on the doctor's care on medical work.

**Results:** The presence of medical errors as a result of medical procedures contrary to the principles of the profession and its forms of negligence, as we have defined negligence and applied to the procedures carried out by the doctor under this name.

The medical error may occur before the treatment or during medical treatment or after medical treatment, so determining the error and the percentage

may be at one of these stages or in all of them. One of the forms of medical errors is negligence, but it falls from the forms of negligence, error in diagnosis, error in treatment, error in the field of surgeries, error in anesthesia, error in radiology and error in the duty of control and supervision.

The doctor's work exceeds the limits of the currency agreed upon with the patient, the dentist's use of tools, devices, machines or materials without sufficient knowledge of the way they work, causing damage, failure of the dentist to take the duty of caution, failure to consult those whose condition requires the patient's help, the dentist did not commit to exert care, the dentist did not commit to achieving the result.

#### **Discussion:**

**Summary of the most prominent results:** There are three types of error images according to Jordanian legislation, but the focus of research in one type, which is the negligence of the doctor in the field of dental implants, it may be, for example, in diagnosis, radiology or others, and we explained in detail the medical error represented in negligence in each type separately.

#### **Strengths and limitations of this review:**

This study combines dentistry on the one hand and the law on the other hand, therefore may turn to legal medicine in the field of dentistry, especially in dental implants in Jordanian legislation, and laying the foundations for the correct therapeutic medical procedure in the specialty of dental implants.

#### **Conclusions:**

The Dentist responsibility lies in assessing whether the patient suffers from one of the factors that affect the success or failure of the operation, assessing the degree of error and the risks that can affect the success and survival of dental implants. The doctor must study the factors that affect the aesthetic shape of the mouth and teeth.

This study finds the final result, in the case of high risks, the percentage of pathological complications increases, and therefore medical responsibilities decrease, but in the case of little or low risks, the

percentage of pathological complications decreases, and therefore the medical responsibility become increased on the Dentist's shoulders, because there are no pathological symptoms that increase the rate of dental implant failure.

One of the forms of medical errors in dental implants is negligence, which may include error in diagnosis, error in treatment, error in surgeries, error in anesthesia, error in radiology, error in control and supervision, doing work beyond the limits of the amount agreed upon with the patient, the use of tools, devices, machines or materials without sufficient knowledge of the way they work, causing damage, failure to take the proper caution measures to prevent complications, failure to consult those whose condition requires the patient's help, the doctor failure to exert adequate care, and doctor failure to achieve a result. All these forms of negligence should be criminalized within specific legislation concerning Dental issues in order to specify criminal responsibility of Dentist.

### **Recommendations**

Include a table similar to the attached table on p 13. The researcher also recommends taking the criterion of gross and simple error with regard to medical errors. The researcher also suggests adding some criteria to differentiate between the limits of medical liability resulting from a medical error.

### **Reference:**

- 1-Derks J, Hakansson J, Wennstrom JL, Tomasi C, Larsson M, Berglundh T. Effectiveness of implant therapy analyzed in a Swedish population: early and late implant loss. *J Dent Res* 2015;44S–51S.
- 2-Gher ME and Richardson AC. The accuracy of dental radiographic techniques used for evaluation of implant fixture placement. *Int J PeriodontRest Dent* 1995(15): 268-283
- 3-Wood RE and Lee L. Systematic interpretation of pathologic conditions on oral radiographs. *Ontario Dentist*1994(Jan/Feb): 17-22
- 4-Medical Liability Law No. 25 of 2018 Article 7/b. Using the necessary and Reinhilde JacobsCone beam

computed tomography in implant dentistry: recommendations for clinical use 2018

- 5- Reddy MS and Wang 1C. Radiographic determinants of implant performance. *Adv Dent Res* 1999(13): 136-145
- 6- Farman AG and Farman TT. Radio visiography-ii: A sensor to rival direct exposure intra-oral x-ray film. *Int J Computerized Dent* 1999 2(3): 183-196
- 7- Adapted with permission from Dawson A, Chen S, Buser D, Cordaro L, Martin W, Belser U. *The SAC Classification in Implant Dentistry*. Editors: Dawson A, Chen S. Quintessence Publishing Co. Ltd. 2009
- 8-. Supriya Ebenezer, Vinay V. Kumar, and Andreas Thor *Basics of Dental Implantology for the Oral Surgeon*
- 9- .The Medical Liability Law, *ibid* to the text of Article 7/c. Using the necessary and available medical tools and devices in diagnosing and treating the recipient of the service in accordance with recognized scientific principles.
- 10-Buser D, Chappuis V, Belser U, Chen S. Implant placement post extraction in esthetic single tooth sites: when immediate, when early, when late? *Periodontology* 2000. 2017; 73:84–102
- 11-Gallucci GO, Hamilton A, Zhou W, Buser D, Chen S. Implant placement and loading protocols in partially edentulous patients a systematic review. *Clin Oral Implants Res*. 2018;
- 12-Hussey DL, Pagni C, and Linden G L. Performance of adhesive bridges fitted in a restorative dental department. *J Dent* 1991(19): 221-225.
- 13-Williams VD, Thayer KE, Denehy GE, and Boyer D Cast metal, resin bonded prosthesis: A 10-year retrospective study. *J Prosthet Dent* 1989(61): 436-441
- 14-Schwarz MS. Mechanical complications of dental implants. *Clin Oral Implant Res* 2000 II (Suppl. 1): 156-158
- 15-Barrack G and Bretz WA. A long term prospective study of the acid etched-cast restoration. *Int J Prosthodont* 1993(6): 428-434
- 16-Budtz-Jørgensen E and Isidor F. Cantilever bridges or removable partial dentures in geriatric patients: A two-year study. *J Oral Rehab* 1987(14): 239-249

- 17-Tuominen R, Ranta K, and Paunio I. Wearing of removable partial dentures in relation to periodontal pockets. *J Oral Rehab* 1989(16): 119-126..
- 18-Wright PS, Hellyer PH, Bighton D, et al. Relationship of removable partial denture use to root caries in an older population. *Int J Prosthodont* 1992(5): 39-46.
- 19-Witter DJ, van Elteren P, Kayser AF, and van Rossum MJ. The effect of removable partial dentures on the oral function in shortened dental arches. *J Oral Rehab* 1989 (16): 27-33
- 20- Balshi TJ and Garver DG. Osseointegration: The efficacy of the transitional denture. *Int J Oral Maxillofac. Implants* 1986(1): 113-118.
- 21-Biggs WE Placement of a custom implant provisional restoration at the second-stage surgery for improved gingival management: A clinical report. *J Prosthet Dent* 1996(75): 231-233
- 22-Lewis S, Parel S, and Faulkner R. Provisional implant-supported fixed restorations. *Int J Oral Maxillofac Implants* 1995(10): 319-325
- 23-Butler B, Kinzer GA. Managing esthetic implant complications. *Compendium of Continuing Education in Dentistry*. 2012;33(7):514-8, 520
- 24-Misch CE. Bone Density: A Key Determinant for Treatment Planning. In: *Contemporary Implant Dentistry*, (Misch CE) 3rd ed. Mosby Elsevier, St. Louis, Missouri;2008. pp. 130-146
- 25-Menicucci G, Pachie E, Lorenzetti M, Migliaretti G, Carossa S. Comparison of primary stability of straight-walled and tapered implants using an insertion torque device. *The International Journal of Prosthodontics*. 2012;25(5):465-71
- 26-Trisi P, Perfetti G, Baldoni E, Berardi D, Colagiovanni M, Scogna G. Implant micromotion is related to peak insertion torque and bone density. *Clinical Oral Implants Research*. 2009;20(5):467-71
- 27-Scortecci G. Immediate function of cortically anchored disk-design implants without bone augmentation in moderately to severely resorbed completely edentulous maxillae. *The Journal of Oral Implantology*. 1999;25(2):70
- 28-urkyilmaz I, Aksoy U, McGlumphy EA. Two alternative surgical techniques for enhancing primary implant stability in the posterior maxilla: a clinical

- study including bone density, insertion torque, and resonance frequency analysis data. *Clinical Implant Dentistry and Related Research*. 2008;10(4):231-7
- 29-Saadi - Dr. Hamid - *ibid*, p. 81
- 30- Mansour - Muhammad Hussein - *ibid*, p. 50 (2)
- Ibrahim - Adel Abd - *ibid*, p. 314
- 31-The Jordanian Medical Liability Law of 2018, the text of Article 8d. Description of the treatment before conducting the necessary examination on the recipient of the service.
- 32- Al-Abrashi. -Hassan Zaki, *ibid*, p. 12
- 33- Al-Husseini - Abdul Latif, *ibid*, pp. 154-153
- 34-Law of Medical Responsibility for the Two Women: Article 8 \ d. Description of the treatment before conducting the necessary examination on the recipient of the service
- 35- Al-Abrashi - Hosni Zaki - *ibid*, p. 270
- 36- Al-Abrashi - Hassan Zaki, *ibid*, p. 12 (2-3 Dr. Al-Husseini - Abdul Latif, *ibid*, p. 153-154
- 37- Mansour - Muhammad Hussein - *ibid*, p. 50 (2)
- Ibrahim Adel Abd - *ibid*, p. 314
- 38- Abdul Latif Al-Husseini - *ibid*, p. 167
- 39- Muhammad Hussein Mansour - *Medical Responsibility*, pg. 76
- 40- Muhammad Hussein Mansour, *ibid* in 2001, pg. 56
- 41- Muhammad Hussein Mansour, *ibid*, p. 103
- 42-Mahmoud Dhari Khalil (1987) The legal basis for the legalization of medical activity, research published in the *Journal of Justice*, which is issued by the Iraqi Ministry of Education, Issue 4, Baghdad, p. 194
- 43-As stipulated in the Medical Liability Law in the text of Article 8 / c. It is prohibited to use unauthorized diagnostic or therapeutic methods or medicines to treat service recipients
- 44-Mesut Enes adabas Does placement of rubber dam effect the arterial oxygen saturation in children? A clinical study 2011
- 45-Medical Liability Law No. 25 of 2018, Article 7/i.d. Reporting a suspected infection of any person with a communicable disease in accordance with the procedures specified in the legislation regulating the control of communicable diseases.

46- Article 6 of the Medical Liability Law of the two emirates, op. Negligence and failure to follow caution and caution

47-Jordanian Medical Liability Law 2018 Medical error is any act, omission or negligence committed by the service provider that does not comply with the prevailing professional rules within the available work environment and results in damage. Article (343) of the cause of someone's death due to negligence or lack of precaution or lack of observance of laws and regulations shall be punished Imprisonment from six months to three years.

48- Article 6 of the Medical Liability Law of the two emirates, op. Negligence and failure to follow caution and caution.

49-Jordanian Medical Liability Law 2018 Medical error is any act, omission or negligence committed by the service provider that does not comply with the prevailing professional rules within the available work environment and results in damage. Article (343) of the cause of someone's death due to negligence or lack of precaution or lack of observance of laws and regulations shall be punished Imprisonment from six months to three years

50-Federal Decree-Law No. 4 of 2016 regarding medical liability and Cabinet Resolution No. 40 of 2019 \ Article 6 \ 3 Failure to exercise the necessary care.