Çankırı Karatekin University
Graduate School of Health Sciences

Master of Science Thesis

ASSESSMENT OF PRIMARY CARE PROVIDERS' KNOWLEDGE ABOUT TETANUS VACCINE IN DIWANIYAH GOVERNORATE, IRAQ

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BY

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The Institute of Health Sciences

The Department of Nursing

The Degree of Master of Science

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ACCEPTANCE AND APPROVAL

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ETHICS STATEMENT

The thesis entitled "**Assessment of primary care providers' knowledge about tetanus vaccine in Diwaniyah Governorate, Iraq**" which was prepared and presented as a thesis, was written by myself and in accordance with the scientific, academic rules and ethical conduct. The idea/hypothesis of my thesis solely belongs to my supervisor and to me. The research pertaining to the thesis was conducted by myself and therefore, all of the used sentences and interpretations within the work belongs to me.

I declare the aforementioned issues to be correct.

15 November 2022

Lateef Kamil Kareem ALOMARI

ABSTRACT

ASSESSMENT OF PRIMARY CARE PROVIDERS' KNOWLEDGE ABOUT TETANUS VACCINE IN DIWANIYAH GOVERNORATE, IRAQ

Lateef Kamil Kareem ALOMARI

Master of Science in Nursing

Advisor: Asst. Prof. Dr. Yaşar Kemal YAZGAN

2022

Background: Tetanus is an extremely dangerous infection that is brought on by the Clostridium tetani bacterium. The spores of the bacteria that cause tetanus are dispersed throughout the environment. The bacteria cause the muscles to tighten more than normal, which results in spasms, stiffness, and an arching of the spine. In the end, it becomes more difficult to breathe, and spasms occur with an increased frequency.

Objective: To Assess of primary care providers' knowledge about tetanus vaccine and Determining the relationship between demographic characteristics of primary care providers and their knowledge about tetanus vaccine in Diwaniyah Governorate, Iraq.

Methods: The study was conducted on 200 primary care providers using the G.Power program. It took 15 to 25 minutes to fill out the questionnaire from primary care providers in the Iraqi Diwaniyah governorate during the period from December 27th 2021- February 26th 2022.

Results: The results showed a statistically significant relationship between nurses' knowledge of tetanus vaccine, their age and education level, as it was found that education, years of practice and continuing education are closely related to the levels of experience of healthcare professionals.

Conclusion: The results show that there is a statistically significant relationship between the nurses' knowledge about the tetanus vaccine and their age and education level.

The study recommended that it is important to initiate training session to improve nurses knowledge about communicable diseases, especially tetanus.

Key Words: Assessment, primary care providers, knowledge, tetanus vaccine.

ÖZET

IRAK, DİWANİYAH VALİLİĞİ'NDE BİRİNCİ BASAMAK SAĞLIK HİZMETİ SAĞLAYICILARININ TETANOZ AŞISI HAKKINDAKİ BİLGİLERİNİN DEĞERLENDİRİLMESİ

Lateef Kamıl Kareem ALOMARI

Hemşirelik, Yüksek Lisans

Tez Danışmanı: Doç. Dr. Yaşar Kemal YAZGAN

2022

Arka plan: Tetanoz, Clostridium tetani bakterisinin neden olduğu son derece tehlikeli bir enfeksiyondur. Tetanoza neden olan bakterilerin sporları çevreye dağılır. Bakteriler, kasların normalden daha fazla gerilmesine neden olur, bu da spazmlara, sertliğe ve omurganın kavislenmesine neden olur. Sonunda, nefes almak daha zor hale gelir ve artan sıklıkta spazmlar meydana gelir.

Amaç: Irak'ın Diwaniyah Valiliği'nde birinci basamak sağlık hizmeti sunucularının tetanoz aşısı hakkındaki bilgilerinin değerlendirilmesi ve birinci basamak hizmet sunucularının demografik özellikleri ile tetanoz aşısı hakkındaki bilgileri arasındaki ilişkinin

Belirlenmesi. Yöntemler: Çalışma, G.Power programı kullanılarak 200 birinci basamak sağlık hizmeti sağlayıcısı üzerinde gerçekleştirildi. 27 Aralık 2021-26 Şubat 2022 döneminde Irak Diwaniyah vilayetindeki birinci basamak sağlık hizmeti sağlayıcılarından anketi doldurmak 15 ila 25 dakika sürdü.

Bulgular: Sonuçlar, hemşirelerin tetanoz aşısı bilgisi ile yaşları ve eğitim düzeyleri arasında istatistiksel olarak anlamlı bir ilişki olduğunu gösterdi, çünkü eğitim, uygulama yılı ve sürekli eğitimin sağlık çalışanlarının deneyim düzeyleri ile yakından ilişkili

olduğu bulundu. Sonuç: Sonuçlar, hemşirelerin tetanoz aşısı hakkındaki bilgileri ile yaş ve eğitim düzeyleri arasında istatistiksel olarak anlamlı bir ilişki olduğunu göstermektedir. Çalışma, hemşirelerin bulaşıcı hastalıklar, özellikle tetanoz hakkında bilgilerini geliştirmek için eğitim oturumunun başlatılmasının önemli olduğunu önerdi.

Anahtar Sözcükler: Değerlendirme, birinci basamak sağlık hizmeti sunucuları, bilgi, tetanoz aşısı.

PREFACE AND ACKNOWLEDGEMENTS

I want to start by giving thanks to God, who made it possible for me to finish this endeavor.

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I want to express my profound gratitude to my loving mother, whose prayers and help during the study period allowed me to finish this project.

Finally, I would want to express my sincere gratitude to my family and my friends for their unwavering support and encouragement. Without this hope, my thesis would not have been imaginable. I'm grateful to everyone who has given me the strength to continue.

Lateef Kamil Kareem ALOMARI

Çankırı-2022

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%	percent
n	Number
P	The level of marginal significance within a statistical hypothesis test
SD	Standard deviation

LIST OF ABBREVIATIONS

ANC	Antenatal Care
BCE	Before the Common Era
CDC	Centers for Disease Control and Prevention
CNS	Central Nervous System
DTP	Diphtheria-Tetanus-Pertussis
EMNT	Elimination Maternal and Neonatal Tetanus
HCPs	Health Care Professionals
HIV	Human Immunodeficiency Virus
HPV	Human Papillomavirus
HTIG	Human Tetanus Immunnoglobulin
MNT	Maternal and Neonatal Tetanus
MNTE	Maternal and Neonatal Tetanus Elimination
NT	Neonatal Tetanus
TT	Tetanus Toxoid
US	United States
WHO	World Health Organization
WWI	World War I

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1. INTRODUCTION

Tetanus is a bacteria called Clostridium tetani that is responsible for causing a very severe infection known as tetanus. The spores of the bacteria that cause tetanus are disseminated throughout the environment and can be discovered in the dust, dirt, and manure. Tetanus is a potentially fatal bacterial disease. When these spores enter the body through cracks in the skin—typically as a result of injuries produced by contaminated objects—they eventually change into bacteria. This can lead to a variety of health problems (Karim, R., & MYMENSINGH, B.2011).

Tetanus is an infection that is caused by germs that enter the body through cuts and scrapes. These cuts and scrapes can occur anywhere on the body. Because of the bacteria, the muscles become far more taut than they would normally be, which leads to spasms, stiffness, and an arching of the spine. At the end of it all, it gets more difficult to breathe, and the frequency with which spasms occur increases (Narayanaswami 2010).

Tetanus is a disease that has no age restrictions and can strike anyone. Newborn babies, however, are particularly vulnerable to the effects of the disease because of its extensive prevalence among this age group (Liang *et al*. 2018).

Tetanus of the newborn is the medical term for this disorder. Infants that develop this sickness usually seldom survive the illness. Tetanus is more prevalent in babies in rural regions, where the bulk of deliveries are still performed at home and do not adhere to adequate sterile protocols (Khan *et al*. 2013) According to estimates from the WHO, neonatal tetanus was responsible for the deaths of approximately 128 000 infants in 2004 (Black *et al*. 2010).

Tetanus vaccine is an atoxoid vaccine that is used to prevent tetanus. Tetanus vaccine is also known as astetanus toxoid (TT), which is another name for the vaccine. During childhood, it is advised that the vaccine be administered in a total of five doses to children, and subsequently a sixth dose is administered to teenagers (Mondialede la Santé *et al*. 2018).

After three doses, the majority of people have an initial immunological response; however, it is recommended that additional doses be administered once every ten years in order to maintain immunity (CDC 2005).

People who are not up to date on their vaccinations should receive a booster shot within the first 48 hours after suffering an injury (Rifat 2016).

Tetanus antitoxin may also be recommended for individuals who have sustained serious injuries but have not received the full complement of immunizations (Mondialede la Santé *et al*. 2018).

During each pregnancy, ensuring that a woman's tetanus vaccinations are up to date is one of the most efficient means of providing protection for both the mother and her unborn child from contracting the disease (Sawyer *et al*.2013).

The vaccine poses very little risk, even when administered to pregnant women or people living with HIV/AIDS (Mondialede la Santé *et al*. 2018).

Between one quarter and eighty-five percent of people report experiencing pain and redness at the injection site. Fever, feeling tired, and minor muscle pain are all symptoms that are experienced by less than 10 percent of the population. Less than one person in every 100,000 is susceptible to experiencing a severe allergic reaction (Jones 2013).

In third world countries, tetanus infection remains a serious public health concern despite the ready availability and simple accessibility of effective antibodies in the form of vaccines. Tetanus is caused by a bacteria that causes tetanus (Khan *et al*. 2015).

As a consequence of this, the objective of this research is to assess the level of knowledge regarding tetanus vaccination among those working in primary health care centers who are members of the health care profession as well as to investigate the relationship between demographic factors related to knowledge. Immunization is a triumph for global health and development, and it is responsible for the annual saving of millions of lives. Consequently, it is responsible for the saving of millions of lives. Vaccines work in conjunction with the immune system's existing natural defenses to reduce the risk of catching a disease. This is accomplished by strengthening the immune system. When you get a vaccine, your immune system responds (WHO 2018).

Vaccination programs can target the overall population (healthy children, teens, and adults), but they usually target pregnant women, tourists, and people with specific diseases or disorders (CDC 2018).

Vaccines are cost-effective because they have distinct target groups and evidence-based techniques make them accessible to even the most difficult populations. This makes vaccines one of the most important health advances in recent history. Vaccines have been shown to be highly effective tools for the prevention, control, and eventual eradication of infectious diseases that can be fatal. the ones that are the simplest to access and, as a result, are the most vulnerable (Gualano *et al*. 2019).

Policies of Immunization chosen to lower the incidence of diseases that can be prevented with vaccinations in mothers, their children include vaccinations when pregnant and immunization of all caregivers to the infant or "cocoon". Benefits to the infant from immunizing the mother directly through passive transfer of antibodies to the mother and indirectly by preventing disease transmission via the infected mother (Healy 2013).

Global vaccination campaigns have reduced tetanus infant death and continue to do so. Estimates suggest a decline from 146,000 in 2000 to 58,000 (CI: 20,000-276,000) in 2010. (Stanfield JP, et al., 1973). Because tetanus spores are everywhere, eradication is not possible, and biologically viable vaccination coverage is needed (Muhammad, *et al*., 2017).

1.2. Importance of the study

Tetanus is one of the most dreaded and potentially fatal diseases that is of importance to public health. One of the primary goals of health organizations all over the world is to bring the morbidity and mortality rates caused by tetanus down, particularly those associated with maternal and neonatal cases. Tetanus is a serious illness that, in its most severe form, can be fatal. It is caused by an exotoxin that is generated by the bacterium Clostridium tetani. Tetanus is the world's oldest known infectious disease, and it can have devastating effects on people of all ages, but particularly on the elderly, pregnant women, and newborn children. Because tetanus antitoxin and tetanus vaccine are so often used, tetanus cases have significantly decreased, the total number of tetanus cases has significantly decreased over the course of the past several decades (Seyman *et al*. 2022).

Tetanus toxoid vaccination is a form of preventative medicine that can save the lives of both mothers and children (Tun *et al*. 2022).

One of the primary goals of health organizations all over the world is to lessen the number of deaths and illnesses caused by tetanus, particularly those that occur in pregnant women and newborns (Priya *et al*. 2021).

Getting vaccinated against tetanus is an essential part of prenatal care, also known as antenatal care (ANC), and is widely regarded as one of the most efficient and preventing death from tetanus with the use of preventative measures (Mohamed, S. O. O., & Ahmed, E. M. 2022).

In order to safeguard women of childbearing age as well as infants, a safe and effective vaccine called tetanus toxoid can be given at any point during the course of the pregnancy without risking the mother's health (Ridpath AD *et al*. 2017).

It has been estimated that giving a tetanus shot to a pregnant woman can cut the risk of tetanus-related death in a newborn by as much as 94 percent (Blencowe H *et al*. 2012).

Immunization is one of the therapies that are used in public health that has had the most success in the history of the human race. Vaccination offers the potential to prevent and treat a wide variety of infectious diseases (Neumann-Böhme S *et al*. 2020).

Reluctance or outright hostility to vaccination has been a major issue in recent years, sparking more disputes. "delays in admission despite the availability of vaccination services" is what we mean when we talk about vaccine hesitancy. The process of debating whether or not to accept vaccines, in particular vaccines that have been around for a considerable amount of time, has developed into a significant barrier within the context of the battle against infectious diseases. It is expected of healthcare professionals that they are knowledgeable about the benefits and drawbacks of vaccination, the dangers posed by diseases that can be prevented by vaccination, and that they can effectively convey this information to their patients. Studies done in the past have demonstrated that there is a significant correlation between the knowledge and attitudes held by medical professionals regarding (MacDonald NE, Dubé E 2015).

Healthcare professionals are typically considered to be the most reliable source of information regarding vaccines. Those workers in the health care industry who have reservations about vaccinations are a significant factor in the general population's level of vaccine reluctance and have the potential to reduce trust in the system (Karafillakis E *et al*. 2016).

1.3. Problem of the study

A study of primary care providers' knowledge about tetanus vaccination in Al-Diwaniyah Governorate, Iraq.

Healthcare practitioners are trusted sources of vaccine information. Health care workers that oppose vaccines contribute to the general public's vaccine reluctance and can decrease faith in the system.

1.3. Hypotheses

1- The existence of a relationship between the demographic characteristics of the sponsors and their knowledge about the tetanus vaccine in Al-Diwaniyah Governorate, Iraq.
2- There is no relationship between the demographic characteristics of the sponsors and their knowledge about the tetanus vaccine in Al-Diwaniyah Governorate, Iraq.

1.4. Objectives Of The Study

1- Assessment of primary care providers' knowledge about tetanus vaccine in Al-Diwaniyah Governorate, Iraq
2- Determining the relationship between demographic characteristics of primary care providers and their knowledge about tetanus vaccine in Diwaniyah Governorate, Iraq

1.5. Limitations Of The Study

1- The scattered distribution of primary health care centers, which made the sample collection process take a long time
2- Some nurses refused to participate in the research

2. LITERATURE REVIEW

2.1. Background

Documents noting tetanus symptoms were discovered in Ancient Egypt dating back to 1500 B.C.; however, it is believed that these documents were copied from as far back as 3000 B.C. Tetanus has been discussed in history throughout the course of time. Even though it was generally understood that the disease was caused by anything getting into an open wound and spreading infection, many of the proposed treatments proved to be useless. Examples of ineffective treatments include early Chinese physicians needling patients above the ears around 300 BC, Hippocrates' ideas in ancient Greece of promoting sweating by drinking strong wines and being wrapped in oil-soaked cloths, and ideas from the Renaissance that involved covering the patient with manure (Abdul-Hussain *et al*., 2021).

In Italy, the tetanus vaccination was first administered in 1938 to members of the military. In 1963, it was made mandatory for children aged two years and older (and in 1968, it became mandatory for all newborns), as well as for workers who are engaged in tasks that are regarded as having a high risk (including but not limited to agriculture, building, garbage collection, and animal husbandry). Since 1968, the vaccination has been required for all newborns. Over time, there was a reduction in the number of cases of tetanus that were documented from 14 per one million people in the late 50s to 5.0 per one million people in the 1970s to 2 per one million people in the 1990s. At the same time, the case-fatality ratio decreased from 68 percent to 39 percent; however, the results appear to be unsatisfactory (Bracci M *et al*. 2014).

Since 2006, Italy has not only been reporting the greatest number of cases in Europe, but the country's annual notification rate has also stayed generally consistent between 0.9 and 1.0 per one million people. This is despite the fact that Italy's population has been relatively stable (Cattani *et al*. 2016).

As tetanus is a disease that affects adults who have not been vaccinated or who have not been vaccinated adequately, it should come as no surprise that ninety percent of cases with known vaccination status that were reported between 1998 and 2000 and ninety one point one percent of cases that were reported between 2001 and 2010 occurred in individuals who were either unvaccinated or incompletely vaccinated (Filia A *et al.* 2014).

Tetanus was initially observed in animals in 1884, and in the same year, pure cultures of the tetanus bacillus were acquired for research purposes. In 1891, Kitasato and Emil von Behring made the discovery of the tetanus antitoxin, which significantly reduced the number of deaths caused by tetanus during World War I. It wasn't until the late 1940s that a tetanus vaccine was developed, but the first tetanus toxoid was developed in 1924 and administered to all American soldiers before World War II. In the 1940s, a national system for reporting instances of tetanus was established, which led to a decline in the disease over the subsequent half century (Amanda, 2008).

Tetanus was understood early. Anaerobic tetanus bacillus enters the body through subsurface wounds. Tetanus can be transmitted from contaminated soil, puncture wounds, joint wounds, and surgical incision sites. Antiseptics killed the bacteria, but its spores were temperature-resistant. Early to mid-20th century literature referred to tetanus as tetanus bacillus, not Clostridium tetani as it is now (Abdul-Hussain *et al*., 2021).

Tetanus is a severe and potentially fatal disease that is brought on by the Clostridium tetani bacterium, which is responsible for the production of toxins. Tetanus germs are ubiquitous in the natural world and easily spread from place to place. The disease manifests itself when the germs enter the body, most frequently through a puncture wound but also frequently through more superficial wounds like scratches (Haline S, *et al*., 2006).

Tetanus was understood early. Anaerobic tetanus bacillus enters the body through subsurface wounds. Tetanus can be transmitted from contaminated soil, puncture

wounds, joint wounds, and surgical incision sites. Antiseptics killed the bacteria, but its spores were temperature-resistant. Early to mid-20th century literature referred to tetanus as tetanus bacillus, not Clostridium tetani as it is now (Hassan *et al*. 2016).

Tetanus, a condition that can be prevented with vaccinations. Despite the fact that HPV can affect people of any age, Neonatals and pregnant mothers have an increased infection risk. This is especially true when births take place in filthy conditions (Rivetti A *et al*. 2015).

When tetanus occurs in a newborn within the first 28 days of life, the condition is referred to as neonatal tetanus. On the other hand, when tetanus develops in a woman during pregnancy or within the first 6 weeks after childbirth, the condition is referred to as maternal tetanus (Stanaway JD *et al*. 2017).

Case deaths from tetanus continue to be high, and maternal and neonatal tetanus (MNT) is still a significant contributor to mortality rates in underdeveloped nations (Thwaites CL *et al*. 2015).

The findings of a research called the Global Burden of Disease that was carried out in 2015 found that tetanus was responsible for 56,743 deaths in 2015, 19,937 of which were in neonates Fourty-four percent of these deaths from neonatal tetanus were recorded in sub-Saharan Africa (Kyu HH *et al*. 2017).

Additionally, because the majority of deliveries in developing nations take place in the comfort of the mother's own home, instances of tetanus in newborns are typically underreported (Thwaites CL *et al*. 2015).

It is estimated that maternal tetanus accounts for five percent of all maternal deaths around the world, and that approximately ninety thousand women per year pass away as a result of puerperal infections brought on by unclean delivery practices. (MNTE, 2005), Tetanus was responsible for the deaths of approximately 200,000 neonates and

30,000 women in the year 2000 alone. Despite the fact that the disease is easily preventable through vaccination, there are still approximately 207 million women who are at risk of developing tetanus (Abdul-Hussain *et al*., 2021).

Tetanus causes lockjaw, muscle spasms. Tetanus causes lockjaw. In most cases, jaw spasms travel throughout the body. Each spasm lasts a few minutes and occurs every three to four weeks. Fractures of the bone can sometimes be caused by spasms if they are severe enough. Headaches, fever, difficulty swallowing, profuse sweating, elevated blood pressure, and a rapid heart rate are some of the additional symptoms of tetanus. The symptoms may not show up for months, but when they do it's usually between three and twenty days after the infection has cleared up. About ten percent of cases are fatal (Atkinson & William, 2012: TSC, 2013).

Tetanus is a disease that can be found in many parts of the world; however, regions with climates that are particularly hot and humid have a higher incidence of the disease. In 2015, there were over 209,000 accidents and approximately 59,000 deaths across the globe. (Vos T, *et al*, 2016: Wang H, etal., 2016). This equates to fewer than 356,000 fatalities in the year 1990. (Naghavi Metal., 2015). There are roughly thirty new cases reported per year in the United States, and not even close to all of them have been prevented by vaccination (CDC, 2019). Early in the fifth century BC, Hippocrates provided a description of the sickness. In 1884, Antonio Carl and Giorgio Raton of the Turin University established the etiology of the disease. A vaccine was developed in 1924. (Atkinson& William, 2012).

In Australia, the first doses of the tetanus vaccination were administered during the year 1939, to personnel of the armed forces, and the first doses of the DTP vaccine were administered to neonates in 1953.(Despite the fact that hooster doses weren't made available to consumers until 1975) It was shown that appropriate antitoxin levels were present in one out of every five people over the age of 50, particularly in females, and that this was associated to the prevalence of disease. Only one third of individuals who weren't protected by the time the juvenile vaccination regimen had been completed, the subject had received at least three doses of the tetanus vaccine, with the bulk of those

unvaccinated being born earlier than 1950. Tetanus is a preventable disease (Lu X, *et al*., 2018).

According to the most recent data given by the WHO in 2018, Iraq was counted as one of the nations that have eradicated neonatal tetanus. The number of deaths caused by tetanus in Iraq reached 138, accounting for 0.08 percent of the country's total death toll. Iraq is ranked number 68 in the world in terms of its age-adjusted death rate, which is 0.22 deaths per 100,000 people. (WHO, 2018). Hippocrates, a Greek physician who lived in the 5th century BCE, is credited as being the first person to describe the illness. In 1884, researchers at the University of Turin led by Antonio Carle and Giorgio Rattone found the etiology of the sickness, and in 1924, scientists created a vaccine for it (Atkinson & William, 2012).

In February 2017, the World Health Organization (WHO) issued a position paper on tetanus booster dosages to ensure lifetime protection. Tetanus is still a concern in some areas, but it's rare in developing countries. Despite initiatives in low-income countries for newborns and pregnant mothers, most illnesses are neonatal and maternal due to inadequate hygiene during and after childbirth among under-immunized women. In several Sub-Saharan African countries, elective circumcision reduces HIV risk (WHO, 2017).

Starting at six weeks of age, An extensive coverage of six doses of tetanus-containing vaccines is what the World Health Organization recommends administering in order to prevent tetanus. i.e. three primary doses followed by three booster doses before the age of maturity. The number one doses have to be spaced out over a period of at least four weeks, and the 0.33 dose has to be administered when the baby is six months old. Booster doses are required to be administered between the first two years of a person's existence, in the nursery, and during the early formative years (ages nine to 15), with a minimum interval of four years between each booster dosage (Abdul-Hussain *et al*., 2021).

2.2. Types of tetanus

There are four types of tetanus

2.2.1. Generalized tetanus

Generalized tetanus accounts for 80% of cases. Generalized form usually provides a descending pattern. Facial spasms are the initial sign of trismus, sometimes called lockjaw. This leads to neck weakness, trouble swallowing, and pectoral and calf muscle stress. There are a variety of symptoms, including a high temperature, profuse sweating, increased blood pressure, and intermittently rapid heart rate. As a result of the body taking on an unusual form known as opisthotonos, spasms are likely to occur frequently and may continue for several minutes at a time. The spasms can last for as long as four weeks and are permanent. The generalized form of tetanus is the most common form of the disease and is responsible for approximately 80 percent of cases. In most cases, the generalized model will describe the phenomenon as a descending pattern. The first symptoms include trismus, also known as lockjaw, and risus sardonicus, also known as facial cramps. This is followed by a stiff neck, difficulty swallowing, and muscle stiffness in the chest and legs (CDC, 2020).

2.2.2. Neonatal tetanus

Neonatal tetanus (NT) is the leading cause of infant fatality in poor countries. The entity caused 787,000 fatalities worldwide in 1988 and 200,000 in 2000. The WHO estimates that 25,000 people died from NT in 2018, an 88% decrease from 2000. Twelve countries will not have successfully eradicated maternal tetanus and NT by the target date of July 2019. In contrast to countries with low and middle levels of income, NT is extremely uncommon in the United States, where it was reported in only two newborns between the years 2009 and 2015. If the mother gets vaccinated against tetanus, her children will develop immunity to the disease and will be protected from it. It typically

takes place when the umbilical trunk is injured and the wound is not treated, particularly when the trunk is being reduced with the use of a tool that is not sterile (Brook, 2021).

2.2.3. Local tetanus

People who are in the same anatomical location as the lesion can develop a rare form of tetanus known as "local tetanus," in which they experience continuous muscle contractions. The contractions may continue for several weeks until the pain eventually subsides. Eventually, the pain will go away. The severity of local tetanus is typically less severe than that of generalized tetanus; only about one percent usually result in death, however the beginning of widespread tetanus may come before it in other situations (Atkinson & William, 2012).

2.2.4. Cerebral tetanus

The most uncommon form of tetanus, which only affects the muscles and nerves in the head, accounts for 0.9% to 3% of all cases (EMNT, 2014). (Doshi *et al*., 2015). It is common for it to occur after a head injury, such as a fracture of the skull. eye injury, dental extraction, (Doshi *et al*., 2015), (Adeleye AO Azeez AL, 2012), and otitis (Ajayi E & Obimakinde 0, 2011), but injuries to other areas of the body have been reported as well. laceration (Del Pilar Morales, *et al*., 2014), eye injury (Adeleye AO Azeez AL., 2012), and dental extraction (Doshi et (Ugwu GI & Okolugbo NE, 2012). Although it most frequently affects the facial nerve, which, when paralyzed, can result in lockjaw, facial paralysis, or ptosis, the condition can also have an effect on other cranial nerves (Adeleye & Azeez 2012; Kwon, *et al*, 2013).

Tetanus of the head can sometimes progress into a more widespread form of the disease (Kwon JC, *et al*, 2013).

Due to the rarity of the clinical presentation, physicians might not be familiar with it and might not even consider the possibility that tetanus is the ailment (Doshi *et al*.,

2015). The treatment might be difficult because the symptoms might also be caused by the real infection that the injury was caused by. The progression of vertical tetanus to generalized tetanus carries a fatality rate that is anywhere between 15 and 30 percent, making it significantly more likely to result in death than other types of tetanus (EMNT, 2014; Del Pilar Morales., *et al*., 2014; Kwon JC,*et al*, 2013).

2.3. Incubation period

The incubation period for the disease ranges from 3 to 21 days on average. In the absence of oxygen, the spores develop into bacilli that produce the toxin that causes tetanus. Through the blood and lymphatic systems, The neurotoxin eventually reaches the brainstem and spinal cord of the host, where it binds to the interneurons that are already present in those locations. Then, after binding to membrane proteins in neurons, it prevents the release of inhibitory neurotransmitters, which are responsible for controlling anterior horn cell modulation and muscle contractions in the central nervous system. Tension, contractions, and severe spasms in the muscles, in addition to peripheral neuropathy, are the results of this (Yen & Thwatics, 2019).

The disease's incubation time averaged 12.65 days, with a standard deviation of 10.17 days. Comorbidities affected four people. When patients arrived to the hospital, trismus was the most common symptom (70.6%), followed by dysarthria (35.3%) and muscle spasm (17.6%). The oxygenation index (PaO2/FiO 2) determined the severity of dyspnea (Fan *et al*. 2019).

2.4. Signs and Symptoms of Tetanus

The incubation period, also known as the time between exposure and the onset of illness, is typically anywhere from three to twenty-one days. According to the Immunization Action Coalition, the majority of cases occur within a span of 14 days, with shorter incubation periods occurring when there is a more heavily contaminated wound. The jaw muscles will begin to spasm, a condition known as trismus or

"lockjaw," as the first indication of tetanus. Muscle spasms and excessive crying are two of the most common symptoms of neonatal tetanus. In many cases, the inability of the newborn to suckle or nurse comes before these symptoms (WHO 2018).

Other symptoms, as listed by the CDC, include the following:

1- Muscle spasms are sudden, involuntary contractions that most commonly occur in the abdominal region. These spasms can be painful.
2- Aches and pains throughout the body caused by tightness in the muscles
3- Difficulty in the ability to swallow
4- Jerking or gazing (seizures)
5- Headache
6- A high temperature and perspiration
7- Variations in blood pressure as well as the pace of the heart

2.5. Cause of disease

Clostridium tetani, a bacterium found in dust, soil, and animal excrement, causes tetanus. Gram-positive, spore-forming, anaerobic bacillus. This bacteria and its spores are distributed worldwide, but they are most prevalent in hot, humid areas with heavy soil organic matter. C. tetani can enter the body through a puncture, laceration, skin break, injection with an infected syringe, or insect bite. Most infections are caused by small, undetected wounds, such as splinters or thorns. This wound is prone to infection. Unvaccinated people, IV drug users, and those with impaired immune systems are at danger. Surgical operations, intramuscular injections, compound fractures, oral diseases, and dog bites can all cause infections (Dong *et al.* 2019, Fava *et al*. 2020, Berkowitz AL 2018).

Tetanus spores are resilient and can survive for extended periods of time in some conditions if they are given the opportunity to do so. In the vast majority of instances,

an infection originates from a wound, which is typically the result of a relatively minor injury.

Lack of immunization is one of the most common factors that can lead to tetanus.

Even people who have been vaccinated can lose their immunity as they get older.

Tetanus can also result from abscesses and gangrene. Patients undergoing surgery or with burns are also at danger. Tetanus is typically contracted by individuals who have not been immunized at all, who have only received a partial vaccination, or who have received a complete vaccination but have not received adequate booster doses (Pascual *et al.* 2003).

2.6. The risk factors

The following are some of the risk factors that can lead to neonatal tetanus:

1. a mother who has not been immunized
2. Home delivery
3. The practice of severing the umbilical cord in a sterile environment
4. A previous child who was diagnosed with neonatal tetanus
5. The application of potentially infectious substances to the stump of the umbilical cord, such as animal feces, mud, or another similar substance]

2.7. Complications

Some of the complications include tetanus-associated respiratory muscle contractions and mortality in patients who are already in critical condition.

Additional complications include those involving the vocal cords as well as other essential parts of the body (Duss & Voide.2018).The most important factor is an overactive sympathetic nervous system.

- Vocal cord paralysis, which can lead to respiratory distress
- Autonomic dysfunction, which can lead to hypertension
- Asphyxia
- Long bone fractures
- Paralytic ileus
- Joint dislocation
- Aspiration pneumonia
- Pressure sores
- Stress ulcers
- Coma
- 1Nerve palsy
- Urine retention
- Seizures

2.8. Pathogenesis

C. tetani usually enters through a wound. Germination requires an oxygen-free environment. Blood and lymphatic system produce and distribute poisons. Tetanospasmin, which is also known as tetanus toxin, exerts its effects on the body at a number of locations within the central nervous system and the sympathetic nervous system. These locations within the CNS encompass the brain as well as the spinal cord and the terminal plates of the peripheral motors. Tetanus is characterized by a set of clinical manifestations that are brought on by the interference of the tetanus toxin with the release of neurotransmitters. inhibiting the impulses of inhibition. This results in an unopposed contraction of the muscle, which then spasms. There is a possibility of convulsions, and the autonomic nervous system might be impacted as well (Faried *et al*. 2021).

2.9. Nursing Diagnosis

Tetanus is a disease that is caused by an infection with the bacterium Clostridium tetani in the body. This infection can occur anywhere in the body. It is general knowledge that the bacteria Clostridium tetani, which is the causative agent of tetanus, is responsible for the contamination of wounds caused by an assault by means of soil, dust, animal feces, and other such things. Tetanus is a potentially fatal infection. If a person has been hurt and there is a chance that they have been contaminated, then the individual needs to be examined for tetanus symptoms in order to identify whether or not they are infected with the disease. Patients suffering with tetanus typically exhibit a number of symptoms, but two of the most common ones are stiffness and muscle spasms. If this happens to a person who is known to be contaminated (for instance, they stepped on a nail a few days ago), then it is legitimate to be concerned that the individual is exhibiting symptoms of tetanus. Typical early symptoms of general tetanus include irritation, muscle cramps, muscle discomfort, weakness, and difficulty swallowing. Tetanus can also cause other symptoms, although these are the most common. It's possible that you're also experiencing these symptoms (Abdul-Hussain *et al*., 2021).

2.10. Treatment and Management

The severity of the disease is taken into consideration when deciding how to treat tetanus. On the other hand, the following treatment objectives are mandatory for every singl patient:

1. Early wound debridement
2. Supportive management
3. Treatment with antibiotics
4. Administration of human tetanus immunoglobulin intramuscularly or intravenously after symptoms appear (HTIG)
5. Neuromuscular blockade
6. The management of a number of different manifestations
7. Handling any complications that arise

Tetanus is treated by cleaning the wound and giving antibiotics to kill Clostridium tetani. The treatment normally lasts seven to ten days and includes intravenous metronidazole 500 mg three times daily or penicillin 100,000-200,000 IU/kg/day. Studies don't support the concept that penicillin causes muscular stiffness by inhibiting the GABAA receptor. It's a long-standing theory. Tetanus antitoxin is injected intramuscularly once, with doses as high as 3000 IU and as low as 500 IU. Whether higher doses are more effective is unknown (Ganesh,*et al*., 2004; Campbell,*et al*., 2009).

2.11. Nursing Roles

1. Communication: the nurse plays an important role in assisting parents in making decisions regarding their children's immunizations by providing advice and guiding them through the process. It is essential for those who work in nursing to keep themselves up to date on the most recent vaccination news, safety issues, and new information supporting the benefits of maintaining immunization schedules.

Parents who are concerned about their children's health often pose questions to nurses regarding the effectiveness and safety of vaccinations. The level of specificity required in your response should be determined by the type of question that you are asked(Hoekstra and Margolis, 2016).

2. The handling and administration of vaccinations in a safe manner is another essential duty that falls on the shoulders of medical professionals who work in nursing. Vaccines can maintain their efficacy for longer periods of time if proper storage procedures are followed. It is imperative that both the storage temperatures and the expiration dates be adhered to. In addition, it is critical for nurses to maintain a level of familiarity with the latest information regarding the administration of vaccines. It is imperative that careful consideration be given to the necessity of administering a vaccine through a subcutaneous route as opposed to an intramuscular route, for example, in order to prevent any potential adverse reactions to a vaccine.

A correct screening for contraindications, such as a history of egg allergy in the case of the influenza vaccine, is an additional precaution that plays a significant role in the process of vaccination. Keep yourself informed by consulting the guide to immunization contraindications published through the efforts of the Centers for Disease Control and Prevention (CDC | Nurses Role in Immunization Safety and Awareness, 2015).

3. As a follow-up, any nurse who is in charge of administering vaccines should be familiar with the warning signs and symptoms of anaphylaxis, in addition to the therapeutic options available for dealing with the condition. In the hectic clinical environment that exists today, the temptation to allow competence and volume to have an effect on the administration of recommended immunizations may be strong. The patient receiving the immunization may experience difficulties as a result of this level of effectiveness. After receiving an immunization, the Centers for Disease Control and Prevention (CDC) advises that the patient be monitored for at least 15 minutes (Zimlich, 2014).

4. Members of the community have the potential to play an extremely valuable role in informing and encouraging caregivers, as well as monitoring the vaccination status of children. (World Health Organization - Immunization in practice, 2014).

3. MATERIAL AND METHOD

3.1. Study design

During the time span of this investigation, a descriptive cross-sectional study was carried out 1st February 2022 to 15th May 2022 to assess how well healthcare professionals know about every aspect of tetanus vaccination and to provide them with enough information to deal with tetanus vaccination in Diwaniyah Governorate, Iraq.

3.2. Administrative Arrangements

Before collecting the data, some administrative and official permissions were obtained to conduct the study.

1- Cankiri University's Institute of Health Sciences Department of Community Health Nursing's ethics committee accepted the study procedure (APPENDIX 4).
2- The research was approved by the Iraq Ethics Committee (APPENDIX 2).
3- Permission was obtained from Al-Diwaniyah Sectors (I and II) to conduct the research in their primary health care facilities (APPENDIX 3).

3.3. Setting and sample of the study

3.3.1. Place and sample

As a result of the statistical analysis of the sample of the study, it was determined that there should be at least 196 primary health care providers with a significance level of 0.05 and 90% power. The study sample is 200 primary health care providers collected from 16 primary health care centers. The sample chosen by by using non-probability sampling (convenience sample). G power package program was used in power analysis. As a result of the power analysis, it was found that the power was 0.99 when the effect size, P and sample size was 3.0, 0.05 and 200.

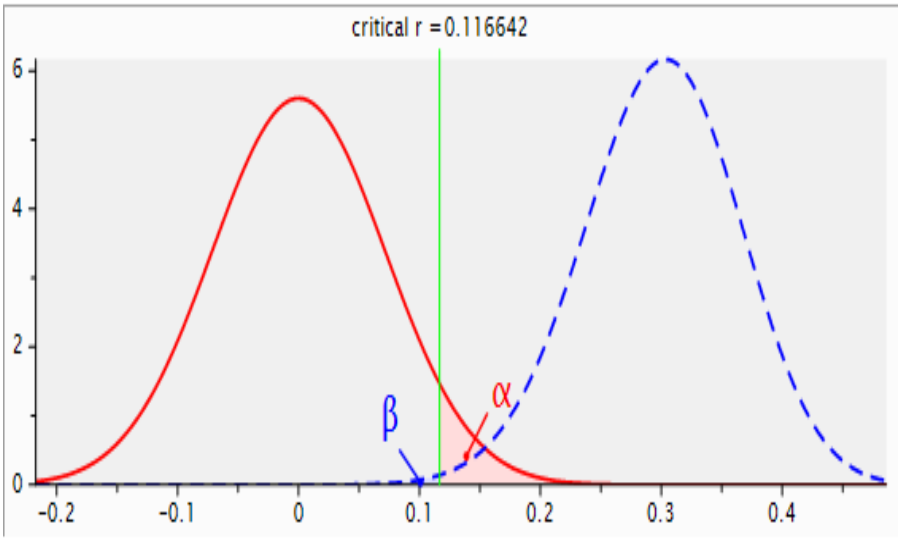

Figure 3.1 G- power analysis

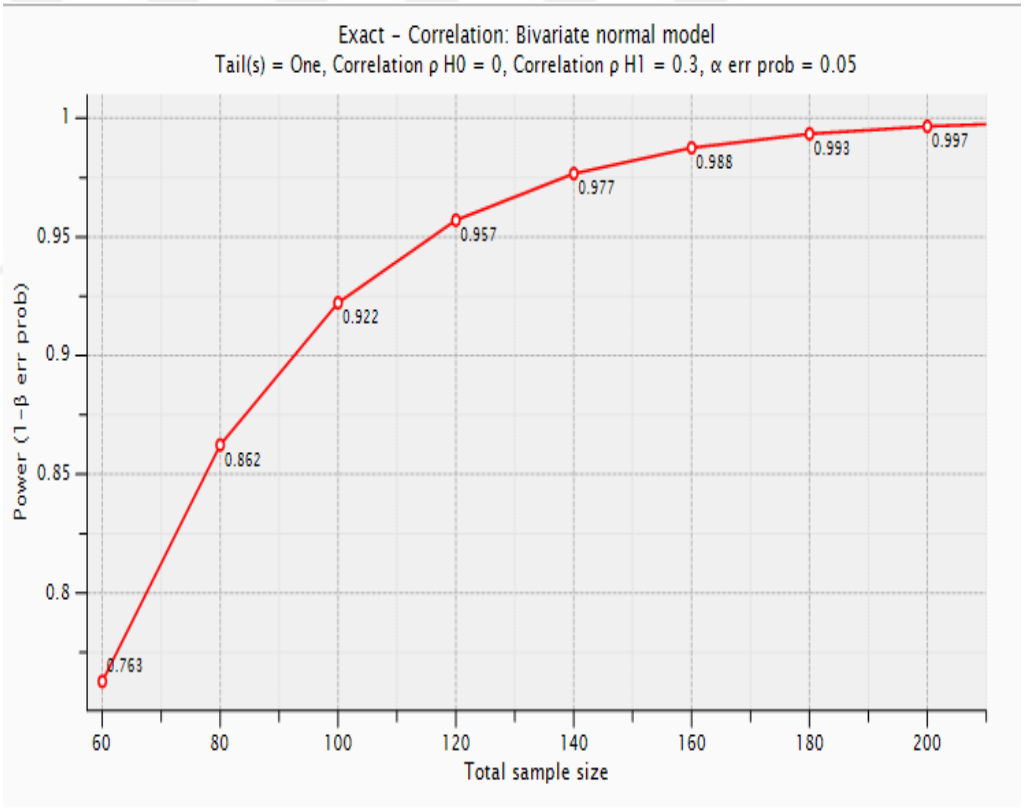

Figure 3. 2 G- power analysis

3.3.2. Inclusion criteria of sample

Currently working in a medical facility, being 18 years or older, agreeing to participate in the study, and speaking Arabic

3.3.3. Exclusion Criteria of sample

Refusal to participate in the study, Having a cognitive and psychological illness

Table 3.1. Distribution of study sample from primary health care centers

No.	Name of primary health care centers	No. of sample
1	AL-Talaea	
2	AL-Jazair	
3	AL-Takea	
4	AL-Hakeem	
5	AL-Jadaeda	
6	AL-Uruba	
7	AL-Sanea	
8	ALShaafieia	
9	AL-Sader first	
10	AL-Sader second	
11	AL-Sader three	
12	AL-Sader four	
13	AL-Askan	
14	AL-Nahda	
15	AL-Jmahory	
16	AL-Daghara	
	TOTAL	**200**

3.4. Study instrument

An Arabic questionnaire formerly used in Babylon Province of Iraq will be used to collect the data (Abdul-Hussain *et al*., 2021). The study instrument is a questionnaire composed of 2 part:

Demographics characteristics including: age, gender, marital status, educational level, years of experience, and do you have knowledge about tetanus?

Nurses knowledge scale: which is composed from (36) multiple choice items, grouped in 6 domains (Abdul-Hussein *et al*., 2021). The domains include: the first domain is Tetanus disease and tetanus toxoid vaccine and composed from 8 items. The second domain is Sign and symptom of Tetanus and composed of 5 items. The third items is How to deal with vaccine administration and composed of 9 items. The fourth domain is Ways of prevention and composed of 4 items. The fifth domain is Complications of tetanus and composed of 4 items. The sixth domain is the extent of the problem and composed of 6 items.

3.5. Validity

The content validity was done for the instrument of the scale by using panel of expert. The legitimacy of the content is assessed by a panel of (14) experts. Experts in the fields of nursing and medicine (AbdulHussain *et al*., 2021).

3.6. Reliability

The reliability coefficient was utilized to determine the concordance between the items of the questionnaire utilizing reliability testing as a statistical analysis method. As evaluated by a Cronbach's alpha (0.81), the scale has an adequate level of internal consistency (AbdulHussain *et al*., 2021).

3.7. Ethics Committee approval

Ethical approval of the ethics committee of a Gankiri university was obtained and directed to Diwaniyah health director to facilitetate the data gathering in the hospitals.

The research was performed at the Diwaniyah Health Department /Training and Human Development. At the outset, written permission of the primary health care center in Diwaniyah City/ Iraq, where the study was conducted, was obtained.

The researcher first gave the sample an explanation of the investigation and its objectives, after which they were asked to give their verbal agreement to participate in the study, and the researcher then started collecting data.

3.8. Data collection

The procedure of obtaining information was carried out between the 27th of December 2021 and the 26th of February 2022. The investigator provided the study participants with an explanation of the study as well as its goals, obtained the participants' verbal assent, and used interviews to elicit responses to study-related questions in order to determine the demographic features of the sample. The data for the study were collected from the participants of the sample that took part in the investigation through the use of self reports. It takes roughly 25–35 minutes to complete the process of data collection.

3.9. Data analysis

Data analysis by using Statistical Package for Social Science (SPSS) version (22.0), Socio-demographic and descriptive characteristics of the patients were given as number, percentage, and t test and Kruskal test.

3.10. Methods of statistic

In order to analyze the data that was gathered for the study, the Statistical Package for the Social Sciences, version 20, and Microsoft Excel (2010) were utilized.

3.10.1. Descriptive approach

A. Statistical tables "Frequencies and percent" which are:

$$\% = \frac{\boldsymbol{Frequency}}{\boldsymbol{Sample\ Size}}\ x100$$

B. Mean of scores "M.s.."

The average score can be calculated by using the following:

$$M.S = \frac{\sum \text{ri} = 1\text{Fi x Si}}{\sum \text{ri} = 1\text{Fi}}\ x100$$

C. The test of standard deviation "S.d.."

$$\text{Standard deviation} = \sqrt{\frac{\sum(X - \bar{X})^2}{n-1}}$$

D. It uses a correlational coefficient "Cronbach alpha" used in estimating the internal consistency of the study tool, which can be calculated by using the following:

$$\alpha = \frac{K}{K-1}\left[1 - \frac{\sum_{i=1}^{K} \sigma_{ii}}{\sum_{i=1}^{K}\sum_{j=1}^{K} \sigma_{ij}}\right]$$

"K is the items number questions."

"σ_{ij} is the investigate covariance between the items"

"i and j. Note the σ_{ii} is the variance not the standard deviation of item I"

3.10.2. Inferential approach

1. t-test

❖ **Independent t-test**

To assess the significant difference between overall and demographic characteristics.

2. One Way ANOVA

Analysis of variance (ANOVA) to determine whether or not the means are equal (trying to see whether or not the parameters of the means are coincidental).

Source of variance	Sum of square	d.f	Mean square	F
Between Groups	$SS_B = \sum \frac{(\sum xP1)^2}{n} - \frac{(\sum xP)^2}{n}$	$df_B = K\text{-}1$	$\frac{MS\beta}{MS\beta}$	$\frac{MSB}{MSW}$
Within Groups	$SS_W = \sum (\sum xP1)^2 - \frac{(\sum xP)^2}{N}$	$df_w = N\text{-}k$	$\frac{SSw}{DFw}$	
Total	$SS_T = \sum (\sum xP1)^2 - \frac{(\sum xP)^2}{N}$	$df_1 = N\text{-}1$		

Shortcuts for measuring importance compared to the level are used as follows:

(1) **NS**: *Nonsignificant when probability > 0.05*.

(2) **S**: *Significantly when the probability is less than 0.05*.

4. RESULT

Table 4.1. Distribution of the sociodemographic characteristics of nurses

Variables	Frequency	Percent
Age		
23-27	**118**	**59.0**
28-32	41	20.5
33-37	16	8.0
38-43	25	12.5
Gender		
Male	90	45.0
Female	**110**	**55.0**
Marital status		
Single	69	34.5
Married	**131**	**65.5**
Education		
Nursing secondary school	50	25.0
Diploma	73	36.5
Bachelor	**77**	**38.5**
Experience years in hospital		
1-5	**110**	**55.0**
6-10	41	20.5
11-15	49	24.5
Do you have knowledge about tetanus		
Yes	**167**	**83.5**
No	33	16.5
Total	**200**	**100.0**

The finding in this table shows that 118(59%) of nurses at age (23-27) years, 110(55%) of nurses are females, 131(65.5%) of nurses were married, (38.5%) of nurses were nursing college graduated, 110 (55%) of them had (1-5) years of experience, 167(83.5%) had knowledge about tetanus.

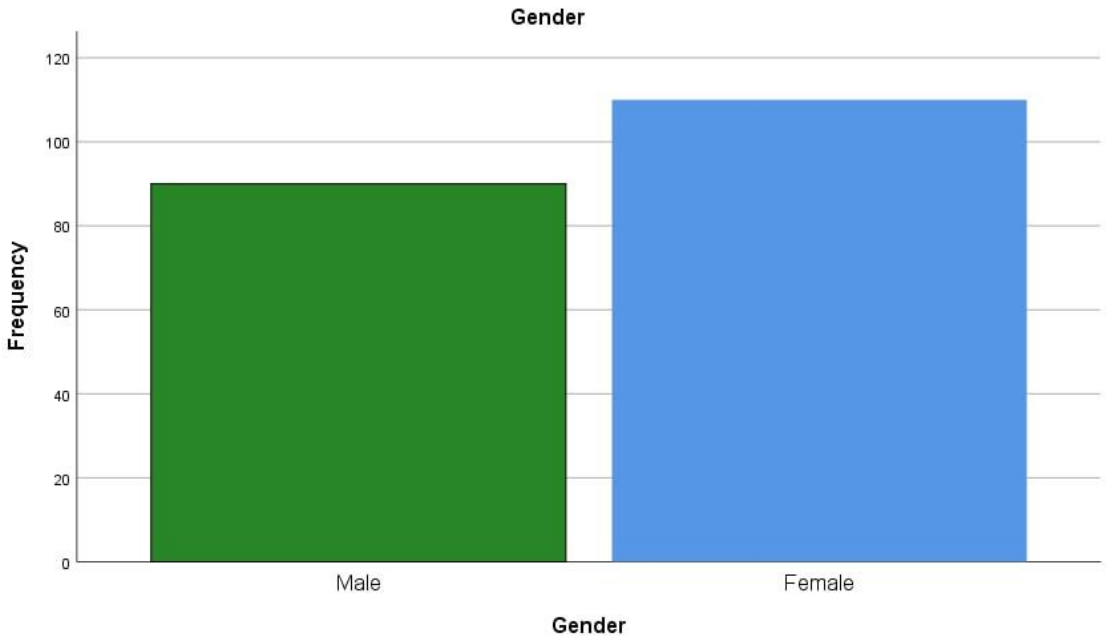

Figure 4.1 Distribution of study sample by their level of gender.

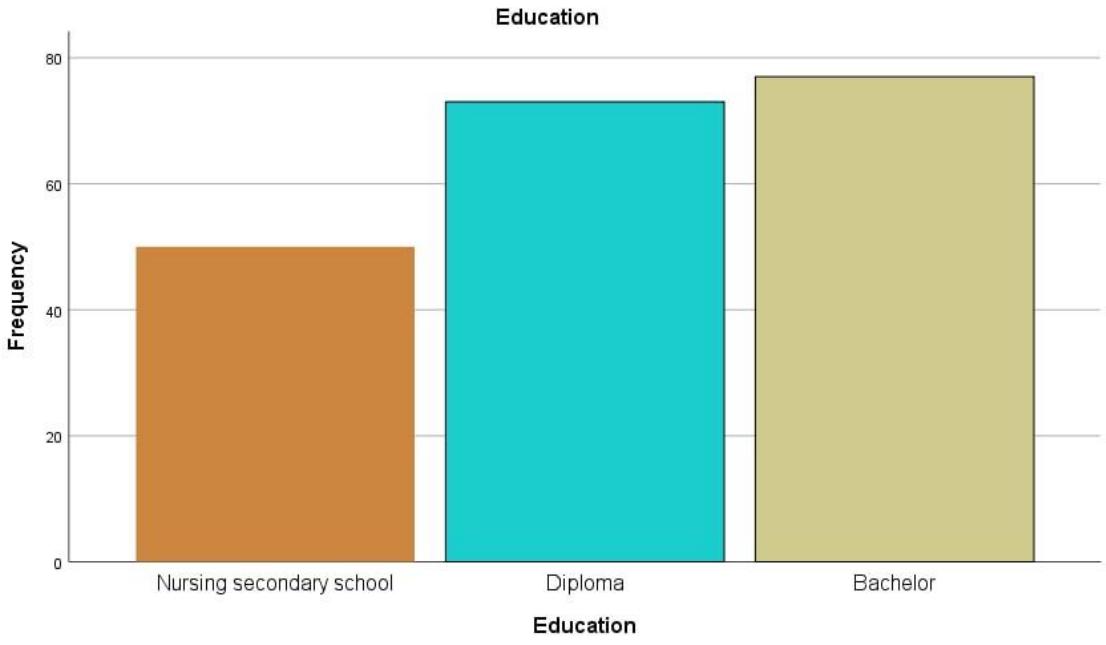

Figure 4.2 Distribution of study sample by their level of educatıon.

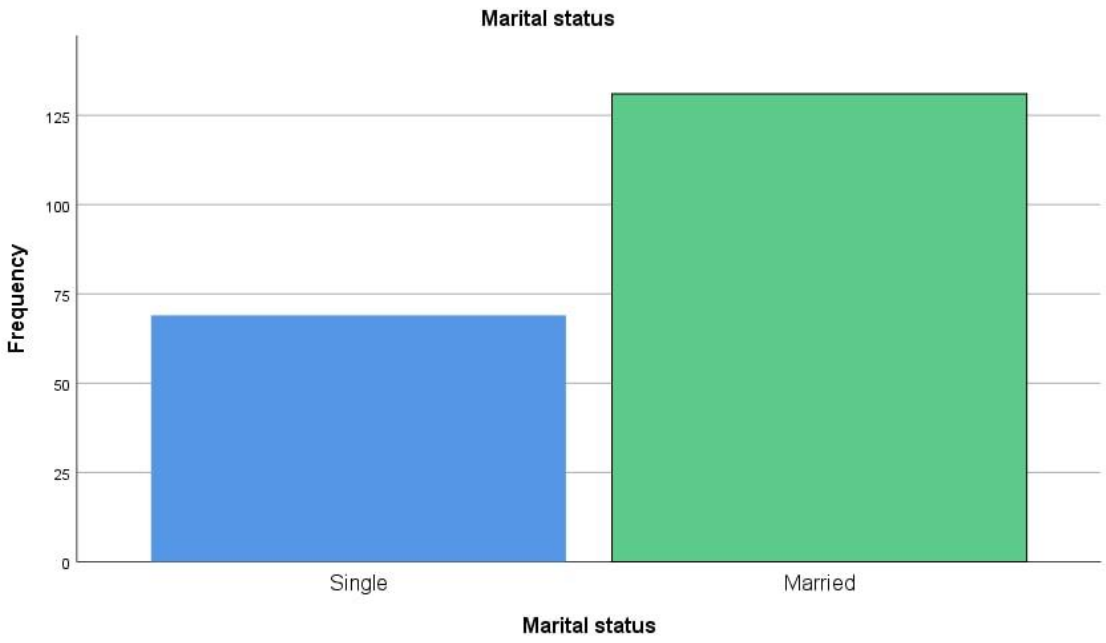

Figure 4.3 Distribution of study sample by their level of marıtal status.

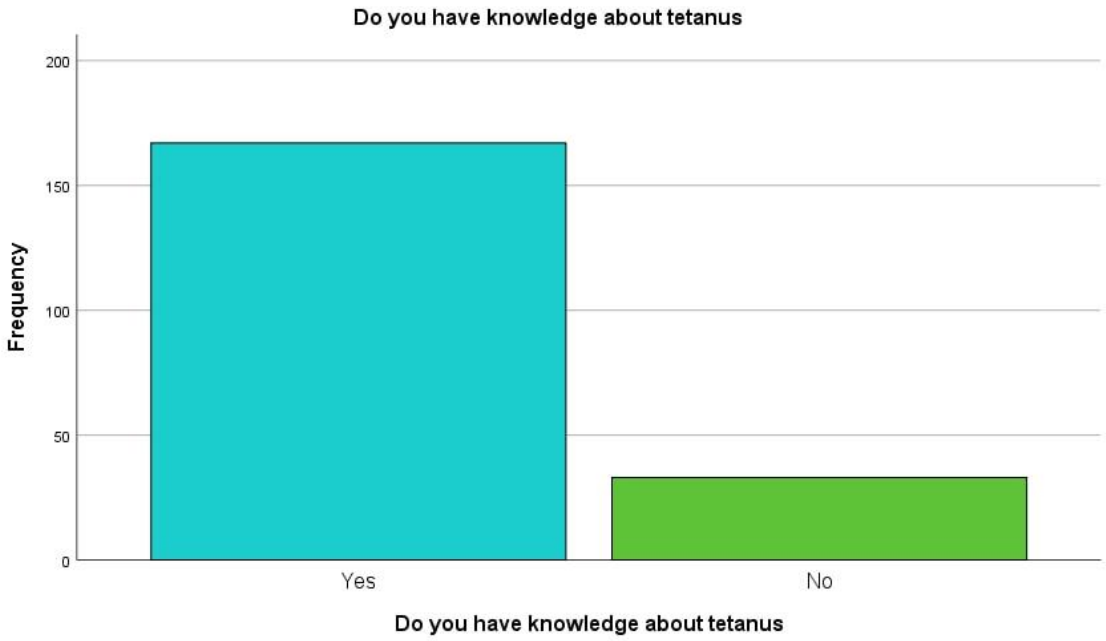

Figure 4.4 Distribution of study sample by their level of knowledge about tetanus.

Table 4.2. Distribution of the nurses knowledge about General information of Health care provider' knowledge about tetanus disease and tetanus toxoid vaccine

Domains	Frequency	Percent
Tetanus is considered as:		
Incorrect answer	95	47.5
Correct answer	105	52.5
Tetanus is		
Incorrect answer	111	55.5
Correct answer	89	44.5
The disease is transmitted by		
Incorrect answer	132	66.0
Correct answer	68	34.0
The cause of tetanus is		
Incorrect answer	99	49.5
Correct answer	101	50.5
The incubation period for tetanus is		
Incorrect answer	114	57.0
Correct answer	86	43.0
It is considered one of the types of tetanus, except		
Incorrect answer	141	70.5
Correct answer	59	29.5
The tetanus vaccine is known as		
Incorrect answer	111	55.5
Correct answer	89	44.5
The appropriate temperature for keeping tetanus vaccine is— Celsius		
Incorrect answer	98	49.0
Correct answer	102	51.0

This table shows that (52.5%) of nurses know tetanus is communicable disease, (44.5%) know the definition of tetanus, (34%) know tetanus transmitted by, (50.5%) know the causes of tetanus, (43%) know the occupation period of tetanus, (29.5%) know types of tetanus, (44.5%) know the name of tetanus vaccine, (51%) know the appropriate temperature for keeping tetanus vaccine.

Table 4.3. distribution of the nurses knowledge about Sign and symptom of Tetanus

Domains	Frequency	Percent
The most important symptoms of tetanus are		
Incorrect answer	85	42.5
Correct answer	115	57.5
It is considered one of sign and symptoms of tetanus		
Incorrect answer	141	70.5
Correct answer	59	29.5
The cause of seizures for a patient with tetanus is Exposure to		
Incorrect answer	93	46.5
Correct answer	107	53.5
The patient initially suffers		
Incorrect answer	142	71.0
Correct answer	58	29.0
Tetanus is an acute disease that called lock jaw because		
Incorrect answer	93	46.5
Correct answer	107	53.5

This table shows that (57.5%) know the important symptoms of tetanus, (29.5%) of them know the other symptoms of tetanus, (53.5%) know the causes of seizures for patient with tetanus, (29%) know what patient suffering from, (53.5%) know the causes of called tetanus as lock jaw.

Table 4.4. Distribution of the nurses knowledge about How to deal with vaccine administration

Domains	Frequency	Percent
Tetanus Vaccine is listed in routine vaccinations in many countries		
Incorrect answer	64	32.0
Correct answer	136	68.0
Tetanus vaccine is given to a pregnant mother at		
Incorrect answer	160	80.0
Correct answer	40	20.0
The first dose of tetanus vaccine is given at the age of ---------: of the child		
Incorrect answer	137	68.5
Correct answer	63	31.5
The difference between a triple and a double tetanus vaccine is		
Incorrect answer	104	52.0
Correct answer	96	48.0
The most groups need of tetanus vaccine is		
Incorrect answer	96	48.0
Correct answer	104	52.0
The appropriate place to inject the vaccine for child is		
Incorrect answer	98	49.0
Correct answer	102	51.0
Children are vaccinated with two additional boosting doses at school within		
Incorrect answer	126	63.0
Correct answer	74	37.0
Expected side effects after administering tetanus vaccine		
Incorrect answer	122	61.0
Correct answer	78	39.0
Which of the categories is more doses given		
Incorrect answer	87	43.5
Correct answer	113	56.5

This table shows that (68%) know that tetanus vaccine is listed in routine vaccinations in many countries, (20%) know tetanus vaccine is given to a pregnant mother, (31.5%) know the time of first dose of tetanus given for child, (48%) know the difference between a triple and a double tetanus vaccine, (52%) know the most group need of tetanus vaccine, (51%) know the appropriate place to inject the vaccine for child, (37%) know children are vaccinated with two additional boosting doses at school, (39%) know the side effect of tetanus vaccine, (56.5%) know the categories is more doses given.

Table 4.5. Distribution of the nurses knowledge about ways of prevention

Domains	Frequency	Percent
One of the most important tips to avoid tetanus is		
Incorrect answer	95	47.5
Correct answer	105	52.5
What the person acquires after tetanus infection		
Incorrect answer	86	43.0
Correct answer	114	57.0
When a wound or acute object occurs, the injured person is given		
Incorrect answer	106	53.0
Correct answer	94	47.0
Among other things necessary to prevent tetanus infection		
Incorrect answer	98	49.0
Correct answer	102	51.0

This table shows that (52.5%) know that the most important tips to avoid tetanus, (57%) know what the person acquires after tetanus infection, (47%) know when a wound or acute object occurs, the injured person is given, (51%) know necessary things to prevent tetanus infection.

Table 4.6. Distribution of the nurses knowledge about Complications of tetanus

Domains	Frequency	Percent
------- It is considered one of the important complications of tetanus		
Incorrect answer	152	76.0
Correct answer	48	24.0
One of the complications of tetanus is considered the most common death cause		
Incorrect answer	98	49.0
Correct answer	102	51.0
The Convulsion Cause		
Incorrect answer	146	73.0
Correct answer	54	27.0
Treatment of tetanus focuses on controlling -------- the disease until its toxic effects disappear		
Incorrect answer	105	52.5
Correct answer	95	47.5

The finding indicated that (24%) know the important complication of tetanus, (51%) know the complications of tetanus is considered the most common death cause, (27%) know the convulsion cause, (47.5%) know the treatment of tetanus focuses on controlling problem until its toxic effects disappear.

Table 4.7. Distribution of the nurses knowledge about The extent of the problem

Domains	Frequency	Percent
The disease continues to afflict a health problem in the world		
Incorrect answer	88	44.0
Correct answer	112	56.0
Tetanus spreads when it is		
Incorrect answer	107	53.5
Correct answer	93	46.5
The World Health Organization estimates that neonatal tetanus has		
Incorrect answer	124	62.0
Correct answer	76	38.0
Dies as a result of this disease ---------- Those who develop it		
Incorrect answer	93	46.5
Correct answer	107	53.5
Government institutions are sufficient to control tetanus in the presence of		
Incorrect answer	103	51.5
Correct answer	97	48.5
Social media has a role in raising awareness and controlling tetanus		
Incorrect answer	80	40.0
Correct answer	120	60.0

The findings indicated that (56%) know disease continues to afflict a health problem in the world, (46.5%) know tetanus spreads, (38%) know World Health Organization estimates that neonatal tetanus, (53.5%) know dies as a result of this disease, (48.5%) know Government institutions are sufficient to control tetanus, (60%) know Social media has a role in raising awareness and controlling tetanus

Table 4.8. Mean and standard deviation of nurses knowledge about tetanus vaccine

Domains	Mean	SD	Minimum	Maximum
Tetanus disease and tetanus toxoid vaccine	11.50	1.446	8	16
Sign and symptom of Tetanus	7.23	1.164	5	10
How to deal with vaccine administration	13.03	1.591	9	17
Ways of prevention	6.08	1.070	4	8
Complications of tetanus	5.50	1.070	4	8
The extent of the problem	9.03	1.175	6	12
Overall knowledge	52.35	4.48	42	68

This table shows that the nurses have mean for all domains of knowledge and overall score, (11.5) for tetanus disease and tetanus toxoid vaccine, (7.23) for sign and symptom of tetanus, (13.03) for how to deal with vaccine administration, (6.08) for ways of prevention, (5.5) for complications of tetanus, (9.03) for the extent of the problem, (52.35) for all nurses knowledge about tetanus vaccine.

Table 4.9. distribution of nurses score obtained from knowledge

Scale	Gender	N	Average	SD	t	p
Knowledge	Male	90	52.4	3.41	0.142	0.88
	Female	10	52.3	5.21		
Scale	**Age**	**N**	**Average**	**SD**	**X^2**	**p**
Knowledge	23-27	118	51.57	4.74	14.6	0.001
	28-32	41	55.07	4.28		
	33-37	16	51.81	3.25		
	38-43	25	51.92	1.87		
Scale	**Marital status**	**N**	**Average**	**SD**	**t**	**p**
Knowledge	Single	69	51.6	5.05	1.84	0.067
	Married	131	52.8	4.12		
Scale	**Education**	**N**	**Average**	**SD**	**X^2**	**p**
Knowledge	Nursing secondary school	50	52.7	4.96	24.3	0.000
	Diploma	73	50.48	3.75		
	Bachelor	77	53.9	4.18		
Scale	**Years of service**	**N**	**Average**	**SD**	**X^2**	**p**
Knowledge	1-5	110	51.9	4.63	1.45	0.48
	6-10	41	52.1	4.2		
	11-15	49	53.34	4.3		

There is significant relationship between nurses knowledge about tetanus vaccine and their age and education level at p-value (0.001, 0.000) respectively.

5. DISCUSSION

This chapter deals with a thorough interpretation of the study's findings, which methodically guides discussion of them with relevant literature that relates to the study's subject.

5.1. Discussion socio-demographic characteristics distribution of the sociodemographic characteristics of nurses

The study results show The finding in this table shows that 118(59%) of nurses at age (23-27) years, 110 (55%) of nurses are females, 131(65.5%) of nurses were married, (38.5%) of nurses were nursing college graduated, 110(55%) of them had (1-5) years of experience, 167(83.5%) had knowledge about tetanus.these findigs sgree with study done by (Seyman *et al*., 2022),that is not agree in item related to the age but relatively agreement with gender in which mention that The total number of HCPs included in the analysis was 10,644. HCPs' demographic information and the TVC are presented in Table 1. Women made up the majority of HCPs (65%), while those between the ages of 30 and 39 made up 35.3%, and the majority of nurses (31.9%, 32.1%, and 32.9% respectively) had less than 5 years of experience in the field (36.4%, 36.4%, and 36.4%). The HCPs had a mean age of 35.51 9.36 years (range: 15-76). Professional experience averaged 10.65 8.47 years (range: 10-50). on the other hand there is agreement with study done in iraq by(Abdul-hussain *et al*., 2021), that mention The majority of the participants in a study conducted in Qatar were between the ages of 20 and 29, and all but one had a high school education or equivalent (Abdulla *et al*., 2020) N=60, or 90.9%, of the participants were female, and the median age was 33 (60.6%). The majority of participants (n=58 or 87.9%) were registered nurses with one to five years' experience in PHCC. The bulk of participants (n=54, or 81.8%) had at least a bachelor's degree. 47% of those surveyed had degrees from nursing programs that can be completed in five to ten years. Half or more of the nurses here have been in the field for six years or more: n=37; 56.1%

5.2. Discussion nurses knowledge about General information of Health care provider' knowledge about tetanus disease and tetanus toxoid vaccine

This findings (52.5%) of nurses know tetanus is communicable disease, (44.5%) know the definition of tetanus, (34%) know tetanus transmitted by, (50.5%) know the causes of tetanus, (43%) know the occupation period of tetanus, (29.5%) know types of tetanus, (44.5%) know the name of tetanus vaccine, (51%) know the appropriate temperature for keeping tetanus vaccine.thses evidence agree with study (Dabas *et al*., 2005), that mention Poor knowledge about tetanus vaccination among the population and health care professionals. The majority of them advocated for unnecessary tetanus injections following any sort of mishap. The majority of respondents had only a basic understanding of the tetanus vaccine schedule for adults, however pregnant women fared slightly better. The tetanus immunization schedule for children was correctly identified by only 75% of physicians and 51.1% of nurses..

5.3. A Discussion of the nurses' knowledge of tetanus symptoms and warning signs

Findings (57.5%) know the important symptoms of tetanus, (29.5%) of them know the other symptoms of tetanus, (53.5%) know the causes of seizures for patient with tetanus, (29%) know what patient suffering from, (53.5%) know the causes of called tetanus as lock jaw.thses findingd supported from study done within a (Qadir & Komal, 2019), Tetanus affects the neurological system, causing muscular stiffness. It's termed lockjaw because jaw and neck spasms occur. These diseases kill 10-20%. Tetanus-causing Clostridium tetani. Tetanus is a bacterial illness, according to our questionnaire. It's not contagious and doesn't need surgery, although medications and immunizations may be administered.

5.4. Discussion of the nurses knowledge about How to deal with vaccine administration

Based on our research, we find that the majority of people are aware that tetanus vaccine is routinely administered in many countries (68%), that 20% are aware that tetanus vaccine is given to pregnant women, that 31.5% are aware of when the first dose of tetanus is administered to children, that 48% are aware of the difference between a triple and a double tetanus vaccine, that 52% are aware of the most vulnerable population group that requires vaccination, that, thses evidence relatively consisenet with study done by (BEYDİLLİ *et al*., 2020), In a p=0.002 study, 93% of doctors, 91% of nurses, and 76% of those who weren't in the medical field correctly identified tetanus as a potentially fatal illness. The need of receiving a health boost following the first round of vaccinations was well understood. However, 137/300 (45.7%) of the total participants were up-to-date on their vaccinations. Only 21.6% (31) of these people adhered to a vaccination schedule, while 32.1% (44) were vaccinated as a result of pregnancy and 45.2% (62) were immunized as a result of injury. The majority of medical doctors (73%), nurses (64%), and non-medical people (44%), all knew when to administer tetanus immunoglobin.

5.5. Discussion of the nurses knowledge about ways of prevention

The data shows that 52.5% are aware of the most crucial preventative measures to take against tetanus, 57% are aware of the symptoms that follow tetanus infection, and 47.5% are aware of the treatment that is administered to an injured person after a wound or acute item has caused injury. Half of the population has the knowledge to avoid tetanus infection (51%)..So thier is consisient with study done by (Seyman *et al*., 2022), In order to protect themselves from tetanus, 13.1% of people choose to self-vaccinate. The most prevalent indications for receiving the tetanus shot were for treatment of acute injuries (25.42%), followed by pregnancy (23.9%). Nearly a third (33.7%) of HCPs were clueless about whether or not pregnant women could get tetanus shots. This survey study did a great job of establishing a foundational understanding of vaccination rates and physician attitudes on tetanus immunization. Current findings supported the

establishment of tetanus boosters for HCPs and selected the HCPs younger than 30 with comparatively less professional experience, as well as all other HCPs save nurses and physicians, as the target demographic for future intervention initiatives.

5.6. Discussion of the nurses knowledge about Complications of tetanus

The results showed that 24% are aware of the major complication of tetanus, 51% are aware that complications of tetanus are considered the most common cause of death, 27% are aware of the cause of convulsions, and 47.5% are aware that treatment for tetanus focuses on problem control until the toxic effects of the disease disappear. Thier were supported by (Govindaraj & Riyaz, 2014), the that revealed there is no doubt that the quality of supportive care and the speed with which treatment is initiated after a diagnosis of tetanus are the two most essential factors in determining the prognosis. The systematic narrative review on the pharmacological management of tetanus possible to tetanus patients, increasing the likelihood that patients will recover fully.

5.7. Discussion of the nurses knowledge about The extent of the problem

The results showed that (56%) are aware that disease is still a global health problem, (46%) are aware that tetanus spreads, (38% are aware that the World Health Organization estimates the number of neonatal tetanus deaths annually), (53.5% are aware that people die as a result of this disease), (48.5% are aware that government institutions are sufficient to control tetanus), and (60%) are aware that social media can play a role in raising awareness, their is evidence agree with study done by (Boz *et al*., 2021), Among the nurses who took part in the current study, 31.7 percent reported having reservations about vaccinating children. Nurses credit their schooling for the majority (66%) of their vaccine knowledge. When compared to those who did not agree or were undecided, those who agreed that vaccines caused autism and infertility, those who stated that they did not trust vaccine-producing companies, and those who stated that catching the disease was a better immunization method than vaccination displayed significantly more uncertainty (p.05). Evidence suggests that one-third of nurses have doubts about the safety of immunizations for children. Nurses, as both health workers

and the communication channel for advising parents, should be given the required training and techniques to help reduce parents' reluctance for vaccination.

5.8. Discussion the mean and standard deviation of nurses knowledge about tetanus vaccine

Results shows that the nurses have mean for all domains of knowledge and overall score, (11.5) for tetanus disease and tetanus toxoid vaccine, (7.23) for tetanus symptoms and signs (13.03), vaccination delivery (6.08), prevention (5.5), complications (9.03), and the scope of the problem (52.35). for all nurses, familiarity with the tetanus vaccine. thses findging confiming by (WHO, 2022) revealed that The World Health Organization recommends taking 6 doses of TTCV total (3 initial doses and 3 boosters). The first dosage of the three-dose primary series can be administered as early as 6 weeks of age, and the minimum gap between doses is 4 weeks. The optimal times to provide the three booster shots are between 12 and 23 months, 4 to 7 years, and 9 to 15 years of age. Every four years is the minimum recommended time frame between booster shots.

5.9. Discussion of nurses score obtained from knowledge

There is significant relationship between nurses knowledge about tetanus vaccine and their age and education level at p-value (0.001, 0.000) respectively, thses findings come alone with the study done within a (Abdul-hussain *et al*., 2021), Results showed no statistically significant association between age and gender in health care. At p values of 0.05, education, years in practice, and continuing education have all been found to significantly correlate with healthcare professionals' levels of expertise.

6. CONCLUSION AND RECOMMENDATION

6.1. Conclusion

The study finding concluded that most of nurses have inadequate knowledge about tetanus vaccine. Less than half of nurses have poor knowledge about definition of tetanus, tetanus transmitted and spread, occupation period of tetanus, types of tetanus, symptoms of tetanus, the patient suffering, given of tetanus vaccine to a pregnant mother, the time of first dose of tetanus given for child, the difference between a triple and a double tetanus vaccine, boosting dose of vaccine for children, the side effect of tetanus vaccine, complication of tetanus, convulsion cause, the treatment of tetanus.

There is significant relationship between nurses knowledge about tetanus vaccine and their age and education level.

6.2. Recommendation

The study recommended that it is important to initiate training session to improve nurses knowledge about communicable diseases especially tetanus.

Educate nurses about the method of infectious diseases transmition and chain of infection. Teach nurses about the signs and symptoms of tetanus

Explain the national vaccination schedule and the doses to tetanus for children and mothers. Encourage nurses to update their information about complications of tetanus.

Encourage nurses to work at vaccination units to increase their experience about tetanus

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APPENDICES

APPENDIX 1. Questionnaire

APPENDIX 2. Aproval of the Iraq ethics

APPENDIX 3. The approval of the first and second sectors of Diwaniyah to collect samples in their centers

APPENDIX 4. Approval the ethics commitee of the institute of health siciences, university of Cankiri

APPENDIX 5. Author's consent to use the study tool

APPENDIX 6. English Sworn Translator

APPENDIX 1. Questionnaire

Assessment of primary care providers' knowledge about tetanus vaccine in Diwaniyah Governorate, Iraq

Part I / demographic –social Characteristics of Health care provider:

1- Age: year

2- Gender: Male female

3- Marital Status: Single married

4- Educational attainment:

Nursing secondary Graduate

Diploma

Bachelor

Higher Diploma

Master

Doctorate

5- Year of Experience in primary health care cente year

6- Do you have knowledge about tetanus? Yes No

Part II /: Evaluating Health care provider' knowledge about tetanus disease and Tetanus vaccine:

Domain 1:General information of Health care provider' knowledge about tetanus disease and tetanus toxoid vaccine:

1- Tetanus is considered as:

A/ Communicable disease B/ non-communicable disease

C/Seasonal disease D/ None of above

2- Tetanus is:

A/It is an acute disease caused by infection of wounds by germs that carry inside the spores

B/It is an acute disease caused by wound contamination with Clostridium tetani

C/ it leads to Convulsion

D/ All of the above

3- The disease is transmitted by:

A/When using non-sterile tools to cut the umbilical cord

B/when contaminated materials are used to cover the umbilical

C/By exposing wounds exposed to air

D /All of the above

4- The cause of tetanus is:

A/Parasitic B/ bacteria / virus D/protozoa

5- The incubation period for tetanus is:

A/From 1 to 7 days

B/From one to two weeks

C/From 4 days to three weeks

D/From 5 to 10 days

6- It is considered one of the types of tetanus, <u>except:</u>

A/Pulmonary tetanus B/maternal tetanus

C/neonatal tetanus .. D/selection B, C

7- The tetanus vaccine is known as:

A/ It is an inert vaccine

B/ It is a weakened live vaccine ..

C/ It is a debilitating vaccine ..

D/ It is subscribe ..

8- The appropriate temperature for keeping tetanus vaccine is-- Celsius:

A/2-4 B/2-8 .. C/ 2-10 .. D/2- 12 ..

Domain 2:Sign and symptom of Tetanus:

1-The most important symptoms of tetanus are:

A- Breathing difficulties ..

B- Difficulty chewing, difficulty swallowing, and general stiffness in the body ..

C-Limb numbness ..

D-high body temperature ..

2- It is considered one of sign and symptoms of tetanus :

A- continuous cough ..

B- eyelid precipitation ..

C - Forced mandatory smile

D- None of above

3- The cause of seizures for a patient with tetanus is Exposure to:

A/ loud sound ..

B/ sun exposure ..

C/ high body temperature ..

D/ sudden fall ..

4- The patient initially suffers:

.. ..

A / headache B / abdominal pain

C / pain in the face .. D / back pain ..

5- Tetanus is an acute disease that called lock jaw because:

A / facial muscle spasm ..

B / jaw muscle spasm

C / buttock muscle spasm ..

D / transforming the entire muscles of the body

Domain 3 How to deal with vaccine administration:

1- Tetanus Vaccine is listed in routine vaccinations in many countries.

A/ yes .. B/ No

2- Tetanus vaccine is given to a pregnant mother at ----------:

A/ 20 and 24 Week ..

B/ 27 and 36 Week ..

C/ 32 and 36 Week ..

D/ other time ..

3- The first dose of tetanus vaccine is given at the age of ---------: of the child

A/ One month .. B/ two months .. C/ four months ..

D/ six month ..

4- The difference between a triple and a double tetanus vaccine is:

A/ There is no difference between them ..

B/ Triple vaccine is given to children under one year and the double vaccine given after one year ..

C / Triple vaccines given to pregnant women ..

D / Triple vaccines given to single women in adolescence ..

5- The most groups need of tetanus vaccine is:

..

A/child .. B/ pregnant woman .. C/ select A and B

D/ other

6- The appropriate place to inject the vaccine for child is:

A/ Humerus muscle .. B/ subcutaneous .. C/thigh muscle .. D/ in the vein ..

7- Children are vaccinated with two additional boosting doses at school within:

A/ the ages of 7 and 13 .. B/ 6 and 10 years ..

C/ 10 and 15 years

D/ these child not need to this vaccine at this age ..

8- Expected side effects after administering tetanus vaccine:

A/ Fever, redness

B/ swelling at the site of the injection ..

C/ Fever, lethargy and crying of the child ..

D/ All above ..

9- Which of the categories is more doses given:

A/child .. B/ pregnant woman C/Adolecance ..

D/ Elderly ..

Domain 4 ways of prevention:

1- One of the most important tips to avoid tetanus is:

A/ You can easily avoid tetanus if you receive the vaccine ..

B/ Not to share personal tools with others ..

C/ Not used old tools ..

D// All above ..

2- What the person acquires after tetanus infection:

A / natural immunity .. B / acquired immunity ..

C / negative immunity ..

D/ Does not acquire immunity ..

3- When a wound or acute object occurs, the injured person is given -----:

A / dose of TIG tetanus immune

B / tetanus vaccine

C/ Corticosteroids

D / No vaccine is given

4- Among other things necessary to prevent tetanus infection:

A / Well wound care and vaccination

B / Ensure that the affected area is not exposed to air

C/ Attention hygiene

D / All of the above

Domain 5 Complications of tetanus:

1- - ------- It is considered one of the important complications of tetanus:

A/Blood clot B/ pneumonia C/ Venous blockage

D/ All above

2- One of the complications of tetanus is considered the most common death cause:

A / respiratory failure B / fractures

C/ kidney failure D/Arterial blockage

3- The Convulsion Cause----------:

A / fractures of spine and other bones

B / wounds in the mouth and the area around the mouth.

C / Bleeding

D/ Nothing above

4- Treatment of tetanus focuses on controlling -------- the disease until its toxic effects disappear:

A / causes B/ symptoms

C / the cause of the disease D/ complications

Domain 6 The extent of the problem:

1- The disease continues to afflict a health problem in the world

A / Low Income B / Medium Income

C / High Income D/ Others

2- Tetanus spreads when it is:

A / The immunization coverage (vaccination) ratio is low

B / Lack of hygiene practices

C/ Use unsteril tools

D / All of the above

3- The World Health Organization estimates that neonatal tetanus has -----:

A / decreased

B / increasingly prevalent

C / the same ratio

D/ Nothing above

4- Dies as a result of this disease ---------- Those who develop it:

A / 25-65% B / 35-70%

C / 45-75% D/ 55-80%

5- Government institutions are sufficient to control tetanus in the presence of---------:

A / Sufficient with the coverage of the vaccine

B / It suffices to have the vaccine treatment

C/ Answer A, B

D/ Nothing above

6- Social media has a role in raising awareness and controlling tetanus:

A / Always B / Sometimes

C / Never D/ Rarely

Irak, Diwaniyah Valiliği'nde birinci basamak sağlık hizmeti sağlayıcılarının tetanoz aşısı hakkındaki bilgilerinin değerlendirilmesi

Sizi LATEEF KAMIL KAREEM ALOMARI ve DR.ÖĞR.ÜYESİ YAŞAR KEMAL YAZGAN tarafından yürütülen "Irak, Diwaniyah Valiliği'nde birinci basamak sağlık hizmeti sağlayıcılarının tetanoz aşısı hakkındaki bilgilerinin değerlendirilmesi" başlıklı araştırmaya davet ediyoruz. Bu araştırmaya katılma kararı vermeden önce araştırmanın neden ve nasıl yapılacağını bilmeniz gerekmektedir. Bu nedenle bu formun okunup anlaşılması çok büyük önem taşımaktadır. Eğer anlamadıysanız, sizin açık olmayan bilgiler varsa ya da daha fazla bilgi isterseniz bize sorunuz. Bu çalışmaya katılmak tamamen gönüllülük esasına dayanmaktadır. Çalışmaya katılmamaya veya katıldıktan sonra çalışmadan çıkma hakkına sahipsiniz. Çalışmaya yanıtlamanız araştırmaya katılım için onam verdiğiniz biçiminde yorumlanacaktır. Size verilen formlardaki soruları yanıtlarken kimsenin baskısı veya telkini altında olmayınız. Bu formlardan elde edilecek kişisel bilgiler tamamen gizli tutulacak ve yalnızca araştırma amacı ile kullanılacaktır.

<u>Bölüm 1</u> / Sağlık hizmeti sunucusunun demografik ve sosyal özellikleri:

1- Yaş: [redacted] yıl

2- Cinsiyet: Erkek [redacted] Kadın [redacted]

Meder[redacted]: Bekar [redacted] Evli -3

4- Eğitim Durumu:

Hemşirelik Ortaokulu Mezunu [redacted]

Diploma [redacted]

Lisans

yüksek di[redacted]

Yüksek lisans [redacted]

Doktora [redacted]

5- Birinci basamak sağlık merkezinde yılların deneyimi [redacted] yıl

[redacted]

6- Tetanoz hastalığı hakkında bilginiz var mı? Evet [redacted] **Hayır** [redacted]

Doktora

5- Birinci basamak sağlık merkezinde yılların deneyimi yıl

6- Tetanoz hastalığı hakkında bilginiz var mı? Evet **Hayır**

Bölüm II /: Bir sağlık hizmeti sağlayıcısının tetanoz aşısı hakkındaki bilgilerinin değerlendirilmesi:

Alan 1:Sağlık hizmeti sağlayıcısının tetanoz hastalığı ve tetanoz toksoid aşısı hakkında genel bilgisi:

:Aşağıdakilerden hangisi tetanoz sayılır -1

A/ Bulaşıcı hastalık B/ bulaşıcı olmay

C/ Mevsimsel hastalık D/ Yukarıdakiler biri

2- Aşağıdakilerden hangisi tetanozdur:

A/ Yaraların içinde mikrop taşıyan mikroplarla enfeksiyonu sonucu oluşan akut bir hastalıktır.

B/ Clostridium tetani ile yaraların kontaminasyonundan kaynaklanan akut bir hastalıktır.

C/ spazma yol açmak

D/ Yukarıdakilerin hepsi

3- Hastalık şu yollarla bulaşır:

A/ Göbek kordonunu kesmek için steril olmayan aletler kullanırken

B/ Göbeği kapatmak için kontamine materyaller kullanırken

C/ Açıkta kalan yaraları havaya maruz bırakarak

D / Yukarıdakilerin hepsi

4- Tetanozun nedeni:

A/ Parazitik B/ bakteri C/ virüs D/protozoa

5- Tetanozun kuluçka dönemi:

A/ 1 ila 7 gün arası v

B/ 1 ila 2 hafta arası v

C/ 4 günden üç haftaya kadar v

D/ 5 ila 10 gün arası v

6- Bunlardan biri hariç, aşağıdakilerin tümü tetanoz türleridir:

A/ Pulmoner tetanoz v B/ anne tetanosu v

C/ yenidoğan tetanozu v D/ B, C seçimi v

7- Tetanoz aşısı şu şekilde bili :

A/ İnert bir aşıdır. v

B/ Zayıflatılmış canlı aşıdır. v

C/ Zayıflatıcı bir aşıdır v

D/ Alt konjuge aşı v

8- Tetanoz aşısının saklanması için uygun sıcaklık - Santigrat:

A/2-4 v B/2-8 v C/ 2-10 v D/2- 12 v

Alan 2: Tetanozun İşareti ve Belirtisi:

1- Tetanozun başlıca belirtileri şunlardır:

A- Nefes alma zorlukları

B- Çiğneme zorluğu, yutma zorluğ v nel vücut sertliği v

C-Uzuv uyuşması v

D-yüksek vücut ısısı v

2- Tetanozun belirti ve semptomlarından biri olarak sayılır:

A-sürekli öksürük v

B- göz kapağı yağışı v

C - Zorunlu zorunlu gülümseme v

D- Yukarıdakil biri

3- Tetanoz ataklarının nedeni aşağıdakilere maruz kalmaktır:

A/ yüksek ses v

B/ güneşe maruz kalma v

C/ yüksek vücut ısısı v

D/ ani düşüş v

4- Hasta başlangıçta acı çeker:

A / Baş ağrısı v B / Karın ağrısı v

C / Yüz ağrısı v D / Sırt ağrısı v

5- Tetanoz, aşağıdaki nedenlerden biri ile kilitli çene adı verilen akut bir hastalıktır:

A / yüz kas spazmı

B / çene kası spazmı v

C / kalça kas spazmı v

D / vücudun tüm kaslarını dönüştürmek v

:Alan 3 Aşının uygulanması nasıl ele alınır

1- Tetanoz aşısı birçok ülkede rutin bağışıklamalara dahildir.

A/ Evet v B/ Hayır v

2- Gebelere tetanoz aşısı ne zaman verilir?

A/ 20 - 24 hafta arası v

B/ 27 - 36 hafta arası v

C/ 32 -36 hafta arası v

D/ Başka bir zaman v

3-Çocuğa ilk doz tetanoz aşısı kaç yaşında verilir?

A/ Bir aylık v B/ iki aylık v C/ Dört aylık v

D/ Altı aylık v

4- Üçlü ve ikili tetanoz aşısı arasındaki fark nedir :

A/ onların arasında hiç bir fark yok v

A/ onların arasında hiç bir fark yok

B/ Bir yaşın altındaki çocuklara üçlü aşı, bir yıldan sonra ikili aşı verilir.

C / Üçlü aşılar hamile kadınlara verilir.

D / Üçlü aşı, evli olmayan kadınlara ergenlik döneminde verilir.

:Tetanoz aşısına ihtiyaç duyan en önemli sosyal gruplar şunlardır -5

A/Çocuk B/ Hamile kadınlar C/ A ve B seçimi

D/ Başka

6- Çocuğa aşının enjekte edilmesi için uygun yer:

A/ Humerus kası B/ deri altı

C/uyluk kas D/ damarda

7- Çocukla[illegible]da hangi yaşta iki doz daha aşı yapılır?

A/ 7-13 yaşında B/ 6 - 10 yaşında

C/ 10 - 15 yaşında

D/ bu çocuğun bu yaşta bu aşıya ihtiyacı yok

8- Tetanoz aşısından sonra beklenen yan etkiler:

A/ Ateş, kızarıklık

B/ enjeksiyon yerinde şişlik

C/ Çocuğun ateşi, uyuşukluk ve ağlaması

D/ Yukarıdakilerin hepsi

9- Kategorilerden hangisi daha fazla doz verilir:

A/Çocuk B/ hamile kadın C/Genç

aşlı

Alan 4 : önleme yolları:

1- Tetanozdan korunmak için en önemli ipuçlarından biri:

A/ Aşı alırsanız tetanozdan kolayca kurtulabilirsiniz.

B/ Kişisel aletleri başkalarıyla paylaşmamak

C/ Kullanılmayan eski aletler

D// Yukarıdakilerin hepsi

2- Tetanoz enfeksiyonundan sonra kişinin edindiği şeyler:

A / doğal bağışıklık B / kazanılmış bağışıklık

C / negatif bağışıklık

D/ Bağışıklık kazanmaz

3- Bir yara veya akut bir cisim meydana geldiğinde, yaralıya bunlardan hangisi verilir?

A / TIG tetanoz bağışıklığı dozu

B / tetanoz aşısı

C/ kortikosteroidler

D / aşı verilmiyor

C/ kortikosteroidler
D / aşı verilmiyor

4- Aşağıdakilerden hangileri tetanoz enfeksiyonunu önlemek için gerekli diğer şeyler arasındadır?

A / İyi yara bakımı ve aşı
B / Etkilenen bölgenin havaya maruz ka ndan emin olun
C/ Hijyene dikkat
D / Yukarıdakilerin hepsi

Alan 5 : Tetanozun komplikasyonları:

1- Aşağıdakilerden hangisi tetanoz hastalığının önemli bir komplikasyonu olarak sayılır?

A/ kan pıhtısı B/ pnömoni C/ Venöz tıkanıklık
D/ yukardaki tümü

2- Tetanozun komplikasyonlarından hangisi en yaygın ölüm nedeni olarak sayılır?

A / Solunum yetmezliği B / kırıklar
C/ böbrek yetmezliği D/ arter tıkanıklığı

Konvülsiyon Nedeni----------: -3

A / omurga ve diğer kemiklerin kırıkları
B / ağızda ve ağız çevresindeki bölgede yaralar.
C / Kanama
D/ Yukarıdan hiçbir şey

4- Tetanoz tedavisi, toksik etkilerini neyin kutlayacağını kontrol etmeye odaklanır?

A sebepler B/ belirtileri
C / hastalığa neden olan D/ komplikasyonlar

Etki Alanı 6 : Sorunun kapsamı:

1- Hastalık halen dünyanın birçok yerinde, özellikle aşağıdaki bölgelerden hangisinde önemli bir halk sağlığı sorunu teşkil etmektedir?

A / Düşük Gelir B / Orta Gelir
C / Yüksek Gelir D/ Başka

2- Tetanoz şu durumlarda yayılır:

A / Düşük aşı kapsamı
B / Hijyen uygulamalarının eksikliği
C/ steril olmayan araçları kullanmak

D / Yukardaki hepsi

3- Dünya Sağlık Örgütü, neonatal tetanozun -----:

A / azalmış

C / Yüksek Gelir v D/ Başka v v

2- Tetanoz şu durumlarda yayılır:

A / Düşük aşı kapsamı v

B / Hijyen uygulamalarının eksikliği v

C/ steril olmayan araçları kullanmak v

D / Yukardaki hepsi v

3- Dünya Sağlık Örgütü, neonatal tetanozun -----:

A / azalmış v

B / giderek artıyormuş v

C / aynı oran v

D/ yukardan hiç bir şey v

4- Bu hastalıktan kaç enfekte insan ölüyor?

A / 25-65% v B / 35-70% v

C / 45-75% v D/ 55-80% v

5- Devlet kurumları --------- varlığında tetanozun kontrol altına alınması için yeterlidir:

A / Aşı kapsamı ile yeterli v

B / aşı tedavisi görmek yeterlidir v

C/ A ve B seçimi v

D/ Yukardan hiç bir şey v

6- Sosyal medyanın farkındalık yaratmada ve tetanozun kontrolünde rolü vardır:

A / Her zaman v B / Bazen v

C / Hiç D/ Nadiren v

APPENDIX 2. Aproval of the Iraq ethics

APPENDIX 3. The approval of the first and second sectors of Diwaniyah to collect samples in their centers

APPENDIX 4. Approval the ethics commitee of the institute of health siciences, university of Cankiri

APPENDIX 5. Author's consent to use the study tool

APPENDIX 6. English Sworn Translator

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