



University of Babylon
College of nursing



Assessment of Nursing Students Knowledge Toward Mumps Infection

**A graduation project submitted to the Faculty of Nursing University of
Babylon as part of the requirements for obtaining a Bachelor's degree in
Nursing**

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

{ وَلَسَوْفَ نُعْطِيكَ

رَبُّكَ فَتَرْضَى }

صدق الله العلي العظيم

[الضحى: ٥]

الأهداء

خشوعاً وتعظيماً لمن علمني ما لا أعلم..... الشكر لله سبحانه وتعالى.

الى مفتاح الهدى ومصباح الرجى الى السراج المنير الى البشير النذير..... محمد رسول الله (صلى الله عليه وسلم).

الى من منحني الثقة بالنفس ومدني بالعون والعطاء الدائم..... أبي.

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الشكر والتقدير

لئن شكرتم لأزيدنكم....

نتوجه الى الباري عز وجل ساجدين شاكرين فضله وإحسانه لما منحنا من قوة وعزم لإتمام هذا البحث.

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ا.م.د. ميس هادي جبر لما قدمته لنا من توجيهات و آراء سديدة كان لها الأثر البالغ في إتمام البحث.

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ونتقدم بالشكر الى والدينا اللذين منحونا هذا الدعم اللامحدود من أجل مواصلة طلب العلم والتفوق فيه وأدعو الله أن يحفظهما ذخرا وسندا

كما نشكر زملائنا وكل الذين ساهموا في إكمال هذا البحث.

Abstract:-

Background: Mumps (Parotitis) is an acute salivary glands viral Infection due to a paramyxovirus family species. Paramyxovirus, mainly mumps, has an important effect in the etiology and pathogenesis of multiple sclerosis (MS). Characteristic clinical features are; parotid salivary glands swelling with a characteristic "hamster-like" face. Mumps' symptoms include: high temperature, headache, muscle aches, tiredness, and loss of appetite. Symptoms frequently appear 2 weeks after infection, and may continue 2-3 weeks after infection. Clinically symptoms range from severe to asymptomatic in some mumps patients. Transmission of Mumps occurs through mucus or saliva. The child can get mumps virus by coughing, sneezing, talking, sharing items and touching of other patients. Transmission of mumps occurs rapidly even before appearance of signs and symptoms. Complications may occur 5 days after acquiring mumps. Encephalitis and meningitis are the worst complications of mumps accompanied by orchitis, mastitis and oophoritis. Complications may affect both males and females. Other complications include the following: deafness, pancreatitis and orchitis. Mumps infections give permanent immunity for life. MMR vaccine (measles, mumps and rubella vaccine) is used in controlling these 3 diseases and used globally.

Objectives: This study aimed to investigate the level of information related to Mumps among students of Faculty of Nursing, the third and fourth stages of the University of Babylon.

Methods: A total of undergraduate students (**100 female**) and (**50 male**) were enrolled in this descriptive study. We used a questionnaire consisting of (**36**) questions to assess the level of knowledge.

Results: The study was conducted on 150 student of Nursing college to assess their knowledge about Mumps infection, and to raise awareness of the risk factor for this disease. The knowledge rate was highest among the age groups (20_23) at 78.7%. The unmarried students also had more knowledge than married students at (80%). City students were more knowledge than the rural students at a rate (78%). More than one source was the highest percentage of the source of university studies at (33.3%), while the internet (25.3%), and health workers was (15.3%), while the lowest percentage of information was provided by family and friend at a rate (4.7%). The majority of students (72%) agreed that traveling to areas where Mumps is endemic or their contact with travelers in these area causes infection. (64%) of the students agreed that this syndrome could cause one or more problems, including pancreatitis, pain during chewing or swallowing, and dry mouth. Also (74%) of the students agreed that there Is a treatment For Mumps. (39.3%) agreed that Mumps can cause meningitis, (33.3%) of them also disagreed.

Conclusions: The current study showed that the level of general knowledge about risk factors for Mumps virus was sufficient among students at a good rate. The students' knowledge regarding the causes of virus transmission to the areas where the disease is endemic or their contact with travelers was high, the highest rate of knowledge was between (20-23) years, Whereas unmarried students were more knowledgeable than married students, Also the lowest percentage of knowledge among rural students. The highest percentage of knowledge of source of information by more than one source, while the lowest percentage was between family and relatives. Many students agreed that this syndrome could cause a problem or several problems and complication, while few of them did not agree with that and their percentage was low.

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CHAPTER ONE

INTRODUCTION

Introduction: -**1.1. Definition:-**

Mumps is an acute viral illness caused by a paramyxovirus that typically presents as swelling of the parotid (parotitis) or other salivary gland[s]. Parotitis may be unilateral or bilateral and usually lasts about 3 to 7 days (average 5 days); most cases resolve within 10 days. Nonspecific prodromal symptoms may precede parotitis by several days, including low-grade fever, which may last 3-4 days, myalgia, anorexia, malaise, and headache. The incubation period ranges from 12-25 days, but parotitis typically develops 16 to 18 days after exposure to (pickering *et al* , 2009) mumps virus.

Mumps can occur in a person who is fully vaccinated, but vaccinated persons are at much lower risk for mumps and mumps complications.

Mumps reinfection in patients who previously had natural infection or recurrent mumps (parotid swelling resolves and then weeks to months later occurs on the same or other side)(Yoshida *et al*, 2008).

Mumps infection may present only with nonspecific or primarily respiratory symptoms or may be asymptomatic. (Ahviid *et al*, 2008).

1.2. Signs and symptoms:-

Characteristic clinical features are; parotid salivary glands swelling with a characteristic "hamster like" face.

Mumps' symptoms include high temperature, headache, muscle aches, tiredness, loss of appetite.

Symptoms frequently appear 2 weeks after Infection, and may continue 2-3 weeks after Infection. Clinically symptoms range from severe to asymptomatic In some mumps patients (vygens *et al*, 2009).

1.3. Pathogenesis:-

Mumps is highly contagious. Humans can be experimentally infected by inoculation of mumps virus onto the nasal or buccal mucosa, suggesting that natural Infection results from airborne spread of droplets of respiratory secretions from infected to susceptible individuals. Humans are most contagious near the time of onset of parotitis. Mumps virus can be isolated from saliva from 5 to 6 days before to 5 days after the onset of clinical symptoms, indicating that an infected person is potentially able to transmit mumps for a period of about 10 days. The mean incubation period from exposure to onset of clinical symptoms is 18 days. During the Incubation period, a primary round of viral replication takes place In epithelial cells of the nasal mucosa or upper respiratory tract, followed by spread of virus to regional lymph nodes. This Is followed by a transient plasma viremia (possibly via Infected T lymphocytes), resulting in dissemination of mumps virus to glandular and neural tissues. Positive cultures from blood are uncommon. The viremic phase is terminated by the onset of the humoral immune response. Mumps virus can be Isolated from saliva from nearly all patients with acute mumps parotitis (Alp *et al*, 2005).

1.4. Diagnosis:-

The diagnosis of mumps can be difficult; and in some instances laboratory results together with clinical and epidemiologic information need to be considered in order to make the diagnosis. (public health agency of canada2010) A positive mumps NAT

(nucleic acid test [e.g., RT-PCR]) result is definitive as It indicates a recent infection.(Bitsko *et al*, 2018).

Mumps IgM antibodies are usually present after the first 5 days of onset of illness in an unvaccinated person reaching a maximum level one week later. Mumps IgM antibodies may be present for several weeks or months following the illness. (Atkinson *et al*, 2015).

However, in immunized cases the IgM antibody response can be delayed, or In some cases absent. these individuals shed the virus for a shortened period thus reducing the sensitivity of the mumps RT-PCR assay in confirming the clinical diagnosis. (Bitsko *et al*, 2018).

To maximize the laboratory diagnosis of mumps, a buccal swab and/or serum should be submitted based on the onset of symptoms and immunization status. A urine sample should also be collected In individuals with orchitis, oophoritis and meningitis to maximize virus detection. (Alberta Health services2017) Urine samples may test positive for up to 7 days post symptom onset.

1.5. Complication:-

Encephalitis and meningitis are the worst complications of mumps accompanied by orchitis, mastitis and oophoritis. Complications may affect both males and females. Other complications include the following: deafness, pancreatitis, and orchitis. Mumps Infections give permanent Immunity for life (Brgles *et al*, 2016).

1.6. MMR vaccine:-

MMR vaccine (measles, mumps and rubella vaccine) is used in controlling these 3 diseases and used globally. MMR is given in multiple doses to children according to

WHO recommendations. MMR 1st dose administration should be dose must be given 12 to 15 months of birth. MMR 2 4-6 years. A active MMR vaccination should be readministered to children from 1-12 years. Active MMR vaccination is given to adolescents, specially females. Now MMRV vaccine has been developed (measles, mumps, rubella and varicella), It must be given to children from 1-12 years (cardemil *et al*, 2017).

1.7. Immune response:-

The relative contributions of the humoral and cell mediated immune responses to viral clearance during mumps have not been precisely established. Mumps specific Immunoglobulin M (IgM) is detectable within 10 to 12 days after Initiation of infection and usually falls to undetectable levels after 6 months. Mumps-specific secretory IgA appears in saliva within 5 days of disease onset and correlates with the termination of viral shedding. The antimumps IgG response is detectable by enzyme linked immunosorbent assay (ELISA) during the first week of the acute Infection and by CF assay by day 10 to 14 IgG titers peak at about 3 to 4 weeks after the onset of infection and persist for decades. Antibodies directed against HN (and possibly the F protein) have viral neutralizing (Alhaj *et al*, 2007).

Infection with mumps virus also induces a specific cell mediated immune response. Peripheral lymphocytes that proliferate when stimulated with mumps virus S and V antigens in an in vitro blastogenesis assay as well as HLA restricted cytotoxic T lymphocytes (CTLs) can be detected in peripheral blood following natural Infection or immunization. Lymphocytes isolated from the CSF of patients with mumps meningitis will proliferate when stimulated with mumps virus antigens and

demonstrate cytotoxicity to autologous mumps virus-infected target cells. Recruitment of CTLs Into the CNS In patients with mumps may play a role In the immunopathological changes observed In human brains after fatal mumps encephalitis (Andrejeva *et al*, 2004).

Elevated levels of cytokines and Immunoglobulins can be measured in CSF from patients with mumps meningitis. CSF interferon levels decline within a week In patients with self-limited mumps meningitis but remain elevated In the CSF of those patients who have more severe CNS Involvement or persistent CSF pleocytosis. Intrathecal production of mumps specific IgG and IgM is a common feature of mumps meningitis in children, although there is no apparent correlation between the severity of clinical meningoencephalitis and titers of mumps-specific immunoglobulins in the CSF (Brunme *et al*, 2006).

A delayed hypersensitivity response to Intradermally injected mumps virus antigen develops about 3 to 12 weeks after the clinical illness. While used as a "control" antigen for tuberculin skin testing, the mumps skin test Is not a reliable Indicator of mumps immune status (malik *et al*, 2007).

1.8. Prevention:-

Mumps prevention measures are hands washing with soap and water, bed rest and sick leave from school for 5 days after the symptoms start, covering the nose and mouth with a tissue when sneezing or coughing. The treatment Is only symptomatic treatment because of the absence of a specific antiviral drug for mumps (chan *et al*, 2017). Commonly recovery from mumps occurs within 2 weeks. (Burnett MW,2017).

Treatment includes sufficient rest and sleep and taking of painkillers, such as acetaminophen or ibuprofen (Haegerich *et al*, 2016).

1.9. Treatment:-

Therapy of patients with uncomplicated mumps consists of conservative measures to provide symptomatic relief, such as analgesics, antipyretics, rest, and hydration. There is currently no established role for corticosteroids, antiviral chemotherapy, Or passive immunotherapy in mumps. Case reports and small series have claimed that administration of $\alpha 2$ Interferon is beneficial in men with mumps orchitis, but this therapy has not been adequately studied in a controlled fashion Symptomatic measures to alleviate the pain and swelling of mumps orchitis include bed rest, scrotal support, opioid analgesics, and application of Ice packs. Surgical decompression was frequently performed in the past for mumps orchitis but is no longer recommended (krause *et al*, 2007). Patients with mumps and clinical evidence of encephalitis (e.g., altered mental status, seizures, or focal neuro logic findings) should be hospitalized for observation Supportive care for patients with mumps meningoencephalitis includes bed rest, fever control, hydration, antiemetics, and anticonvulsants as required. Lumbar puncture may temporarily relieve the headache in some patients with mumps meningitis. Corticosteroids have been used In the treatment of mumps encephalitis and orchitis, but there are no data from controlled studies to support this approach, and corticosteroid use is not routinely recommended (lane *et al*, 2006).

CHAPTER TWO

METHODOLOGY

Methodology:-

A descriptive study design was adopted to achieve the aim of the present study. The setting of the study college of nursing, University of Babylon, in Hilla City/Iraq. The colleges consist of four stage, the study obtained from third and fourth stage only. A random sample technique was adopted to collected (150) student, (50) male and (100) female in the college of nursing from (28/ November to 11/ December 2022).

Excluded the first and second stage because the curriculum in this stage not contents any information about any diseases. To collect the study information a questionnaire was constructed depended on previous studies and related literature. It is composed of 2 parts.

Part one:- This part includes items which focus on the student demographic data such as (age, gender, stage, material status,` address, and source of information).

Part two:- consist of the general question to assess knowledge of student toward definition, cause, symptoms, treatments, diagnosis, vaccine). It's composed of items that covered the disease. The overall question dependent on three options (agree, disagree, not sure).

The Descriptively Approach:

Statistical tables frequencies and present which are:-

$$\% = \frac{\text{Frequency}}{\text{Sample Size}} \times 100$$

CHAPTER THREE

RESULTS

Results: -

The study that conducted on 150 students of nursing college to assessment the knowledge of them about mumps the detail of results can be shown in this chapter.

The highest rate of knowledge was between age group was 20_ 23 years, 78.7%. While the knowledge in female was more than in male 100, 66.7%. the number of unmarried people was more of married 120, 80%.

The rate of urban students knowledge were higher than rural students by 117, 78%.

Table 1:- shows the frequency distribution of the demographic and percentage data

Item	Frequency	Percentage(%)
Age		
20_23	118	78.7
23_ above	32	21.3
Total	150	100
Sex		
Male	50	33.3
Female	100	66.7
Total	150	100
Place of residence		
Urban	117	78
Rural	33	22

Social situation		
Married	30	20
Single	120	80
Total	150	100

It is noteworthy that the main source of information regarding mumps infection was the highest more than one source, and their number was 50 of the 150 participating students with a rate of 33.3%. While the source of information from the internet was 38 out of 150 participants, or 25.3%. And the information from the study was 32 of the 150 participating students with rate of 21.3%. Finally, fewer students shared their views relying on medical and health personal by 23 or 15.3%. 7 students out of total students which was the lowest 4.7% **as shown in the table below:-**

Table 2:- shows the main source of information regarding mumps infection

Source of information	Frequency	Percentage(%)
Internet	38	25.3
Medical and health personal	23	15.3
Family, friend	7	4.7
Study	32	21.3
More than one source	50	33.3
Total	150	100

Part II:

In the current study, most students agreed that mumps is an infection caused by a virus, and their knowledge rate was 78.7%, and 72% agreed that travelling to areas where mumps is endemic or contacting travelers to endemic areas can cause mumps infection. 55.3% agreed that the incubation period ranged from two to three weeks. 69.3% of students agree that the first sign of mumps is swollen salivary glands. 42% of students agreed that infection lead to dry mouth and tooth decay. 75.3% of students agreed that swollen cheek can be seen during early stage. Mumps can easily spread when an infected person cough or sneezes 78.7% supported this. 72% the percentage of students who said that children could also be infected if they rub their eyes or mouth after touching toys or other objects that a person with mumps has touched. 62% of students agreed that people with mumps without symptoms transmit the virus. 45.3% of students that person get mumps more than once. And 64.7% of students think that people who work in medical facilities are more vulnerable to disease than general population. 69.3% of students think mumps is more contagious from mouth spray or when infected person cough. 78.7% of students that think mumps is more contagious after symptoms appear. And 36.7% of students think that some adult are more susceptible to measles, mumps, and rubella.

All the results mentioned are shown in the table below:-

Table No(1): Nursing students knowledge about definition, causes and symptoms of Mumps:-

of Mumps:-

No.	Item	Agree NO. %	Disagree NO. %	Not sure NO. %
1.	Mumps is an infection caused by a virus?	118(78.7)	13(8.7)	19(12.6)
2.	Do you think that travelling to areas where mumps is endemic or contacting travels to endemic areas can cause mumps?	108(72)	13(8.7)	29(19.3)
3.	Does the incubation period range from two to three weeks?	83(55.3)	19(12.7)	48(32)
4.	Is it usually the first sign of mumps is swollen salivary glands?	104(69.3)	21(14)	25(16.7)
5.	Can infection lead to dry mouth and tooth decay?	63(42)	38(25.3)	49(32.7)
6.	Swollen cheek can be seen during early stage?	113(75.3)	12(8)	25(16.7)
7.	Can mumps spread easily when an infected person cough or sneezes?	118(78.7)	12(8)	20(13.3)
8.	Can children also become infected if they rub their eyes or mouths after touching toys or other objects that a person with mumps has touched?	108(72)	18(12)	24(16)
9.	Can people with mumps without symptoms transmit the virus?	93(62)	30(20)	27(18)

10.	Can person get mumps more than once?	68(45.3)	41(27.3)	41(27.3)
11.	Do you think that people who work in medical facilities are more vulnerable to disease than the general population?	97(64.7)	23(15.3)	30(20)
12.	Do you think mumps is more contagious from mouth spray or when infected person cough?	104(69.3)	18(12)	28(18.7)
13.	Do you think mumps is more contagious after symptoms appear?	118(78.7)	11(7.3)	21(14)
14.	Do you think that some adults are more susceptible to measles, mumps and rubella?	55(36.7)	50(33.3)	45(30)

The opinion of the students differed between agreeing or disagreeing, and some of them not sure of the answer regarding the treatment and diagnosis of mumps. All opinion are indicated in the table below:-

Table No(2): Nursing students knowledge of Mumps treatment:-

No.	Item	Agree NO. %	Disagree NO. %	Not sure NO. %
1	Do you think there is a medicine for mumps?	111(74)	17(11.3)	22(14.7)
2	Do you think the infection within week or two weeks without medication?	53(35.3)	44(29.3)	53(35.3)
3	Do you think the plenty of fluid and bed rest is necessary for a patient with mumps?	118(78.7)	13(8.7)	19(12.7)

Table No(3): Nursing students knowledge of mumps diagnosis:

No.	Item	Agree NO. %	Disagree NO. %	Not sure NO. %
1	Do you think the swelling of salivary gland is adequate diagnosis?	45(30)	75(50)	30(20)
2	Do you think the RT_PCR and viral culture are used to confirm mumps infection?	103(68.7)	16(10.7)	31(20.7)
3	Do you think buccal smear from the cells on the side cheek or mouth should be performed as a diagnosis?	80(53.3)	27(18)	43(28.7)
4	Do you think urine test can be detect the mumps virus?	40(26.7)	64(42.7)	46(30.7)

76.7% of students agreed that MMR vaccine contain live attenuated strains of measles, mumps, and rubella viruses. 61.3% of students think the injection under the skin. 52% of students agreed that there are side effects of the vaccine while 42.7% of students don't sure if the MMR vaccine causes stiffness in the joints and neck. 49.3% of students are agreed that people who severely immunocompromised should not be given the MMR vaccine. The purpose of second dose of MMR to produce immunity in those who did not respond to first dose and agreed by 68% of students. **The most important thing is shown in table (4):**

Table No(4): Nursing students knowledge of mumps vaccine:

No.	Item	Agree NO. %	Disagree NO. %	Not sure NO. %
1	Does the MMR vaccine contain live attenuated strains of measles, mumps and rubella viruses?	115(76.7)	9(6)	26(17.3)
2	Do you think this vaccine is a subcutaneous injection?	92(61.3)	24(16)	34(22.7)
3	Do you think anyone experiencing of severe allergic reaction should not have the MMR vaccine?	85(56.7)	21(14)	44(29.3)
4	Is the vaccine give to the elderly?	58(38.7)	35(23.3)	57(38)
5	Are there side effect of the vaccine?	78(52)	27(18)	45(30)
6	Does the MMR causes stiffness in the joints and neck?	43(28.7)	43(28.7)	64(42.7)
7	People who are severely immunocompromised should not be given the MMR vaccine?	74(49.3)	33(22)	43(28.7)
8	Should women know to be pregnancy not receive the MMR?	74(49.3)	22(14.7)	54(36)
10	Do you think the purpose of second dose of MMR to produce immunity in those who did not respond to the first dose?	102(68)	21(14)	27(18)

Table No.(5) below shows mumps complications, as 39.3% of students agreed that infection with mumps lead to meningitis. And 47.3% of students agreed dose mumps cause potential complication from encephalitis(brain infection). While 64% of students indicate that this syndrome cause one or more problems including pancreatitis, pain during chewing or swallowing, and dry mouth. 41.3% of students agreed that it is possible for women with mumps may suffer from ovaritis. 41.3% of students report that people with mumps may suffer from hearing loss>

Table No(5): Nursing students knowledge of mumps complication:-

No.	Item	Agree NO. %	Disagree NO. %	Not sure NO. %
1	Can infection with mumps lead to meningitis?	59(39.3)	41(27.3)	50(33.3)
2	Can mumps cause potential complication from encephalitis(brain infection)?	71(47.3)	42(28)	37(24.7)
3	Can this syndrome cause one or more problems including pancreatitis, pain during chewing or swallowing, and dry mouth?	96(64)	23(15.3)	31(20.7)
4	It is possible women with mumps may suffer from ovaritis?	62(41.3)	41(27.3)	47(31.3)
5	Is it possible that people with mumps may suffer from hearing loss?	62(41.3)	37(24.7)	51(34)

CHAPTER FOUR

DISCUSSION

Discussion:-

This study revealed gaps in knowledge of mumps. Their knowledge was closely related to education level, study, age, spatial differences, and social and cultural differences.

The level of knowledge may vary over time due to routine health education, Activities, and improved access to public media.

In this chapter, we explored some studies that may be agree or does not agree or close to our current study. There is a study (ali *et al*, 2019) Knowledge showed that the highest percentage was 68% In the age group (>20) and lowest in the age group (<20) where it scored 31.20% it's close to the current study. And in another study (harith *et al*, 2020), knowledge of 44.62% in the age group (16-25) compared to the current study, the result was low.

With regard to students' knowledge (adil *et al*, 2020) the percentage of knowledge It's male 17% female 83% does not agree with current study

The (ali *et al*, 2019), Indicates the total number of university students was 250, females 72.80% ,males 27.20%, according to the current study, the result is close.

And another study (Harith *et al*, 2020) knowledge of male 69.71% female 30.28% It's also not agree. Results carried out by (Amean *et al*, 2017) showed that virus infection knowledge was 16.7% among unmarried students and 73.3% among married compared to the current study the result was not agree.

Results carried out by (amean *et al*, 2017) that showed knowledge of students in urban areas 50% and rural areas 50% according to the current study, the result is not agree.

Another study (Ahmed *et al*, 2020) showed that the source of knowledge was obtained from internet 45% and from study 23.3% and from other source 13.3% according to the current study the result is not close.

As explained (Amean *et al*, 2019) knowledge about mumps is an infection caused by a virus This percentage 66.6% is lower than the percentage extracted from the current study of our students.

Another resource (Bahaaeddin *et al*, 2020) indicates that the students' knowledge about mumps is an infection caused by a virus the percentage was 53.3% not similar to the percentage extracted from his current study.

Also (Bahaaeddin *et al*, 2020) explained the knowledge regarding this the incubation period range from two to three weeks percentage 55% more similar of current study of our students.

As explained (Bahaaeddin *et al*, 2020) knowledge about the first sign of mumps is swollen salivary gland This percentage 88.3% is higher than the percentage extracted from the current study of our students.

With regard (Bahaaeddin *et al*, 2020) to students' knowledge about infection lead to dry mouth and tooth decay the percentage of knowledge it is 58.3% and does not agree with current study where the percentage was 42%.

As explained (Ali *et al*, 2019) knowledge about mumps spread easily when an infected person cough or sneezes This percentage 92% is higher than the percentage extracted from the current study of our students.

Also (Bahaaeddin *et al*, 2020) explained the knowledge regarding mumps is more contagious from mouth spray or when infected person cough this percentage 70% more similar of current study of our students.

The (Ali *et al*, 2019) indicates that the students' knowledge about some adults are more susceptible to measles, mumps, and rubella the

The ratio of 59.2% was not similar to the ratio extracted from his current study.

And (Ali *et al*, 2019) indicates that the students' knowledge of the existence of a drug for mumps was close to that of his current study, at a rate of 81.6%.

(Bahaa El-Din *et al*, 2020) indicates that students' knowledge of mumps infection leads to meningitis, it was 33.3% close to his current study.

He also explained that the knowledge about mumps causing potential complications of encephalitis (infection of the brain) is 36.7% less than the percentage extracted from the current study of our students.

The knowledge that mumps can cause one or more problems including pancreatitis, pain while chewing or swallowing, and dry mouth is 33.3% less than the percentage derived from the current study of our students.

As for knowledge regarding the likelihood of women with mumps developing oophoritis, this percentage is similar to 40% more than the current study of our students.

According to the study conducted by (amean *et al*, 2017), it showed 34% of students' knowledge of diagnosing mumps through examination compared to the current study, and the result was close.

The result of (Raja *et al*, 2020) showed that a total of 102 students, 90.2%, knew that the live MMR vaccine was attenuated compared to the current study and that the result was not nearly as close.

The same source said that 68.6% of students know the measles, mumps and rubella vaccine in subcutaneous injection compared to the current study, the result is close.

Another source (Ali *et al*, 2019) shows that the student was aware of the subcutaneous injection of the MMR vaccine by 61.20% compared to the current study, and the result is the same.

There is a study (Kruger & Atkinson 2013). Knowledge showed that anyone who has a severe allergic reaction, should not have MMR which can cause hives, swelling and difficulty breathing, the knowledge rate among students was 47% compared to the current study it was close.

The result (Siebert *et al*, 2007) showed that the cognitive MMR vaccine should not be given to people with severe immunodeficiency and that the cognitive score was 36% compared to the current study and the score was low.

Knowledge of the outcome (Paul & Minnesota 2011) showed that 90% of the students were aware that the first dose of MMR produced immunity against rubella compared to the current study, and the outcome is inconsistent.

According to another study (Arif *et al*, 2019), knowledge of receiving a second dose after the first dose of MMR showed that the knowledge rate was 40.4%, which is not similar to the percentage extracted from his current study.

Chapter Five

Conclusion

And

Recommendation

5.1. Conclusion:-

1. The current study showed that the level of general knowledge about mumps was somewhat insufficient among the students.
2. The highest rate of knowledge is between 20-23 years. The knowledge of single students was higher than that of married students. While the urban student's knowledge is higher than that of the rural student
- 3- The main source of information about mumps was the least for family and friends. While the medical and health personality, the Internet, and the study were average, and the percentage was higher in more than one source
- 4- Most of the students agreed from their knowledge that children who rub their eyes or mouths after touching toys or other things touched by a person with mumps also get infected.

5.2 Recommendation:-

However, there are some recommendations that students should follow to increase their knowledge: -

- 1 Students should receive advanced education programs about the rubella risk factor.
2. Diagnostic pamphlets and tools should be available and distributed to every student about diseases and health-related practices.
3. Students should be encouraged to surf the internet to refresh their knowledge as they are the future nurses who will take care of the patients and also educate the clients.
- 4- Carrying out periodic visits to hospitals and primary health care centers to increase student's knowledge and increase the size of the sample.

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Appendix

Appendix

Assessment of nursing students knowledge toward Mumps

Part I:- Demographic Data

Age:- years

Gender:- male female

Place of residence:- urban rural

Study phase:- third fourth

Social situation:- married single

Source of information concerning Mumps infection:-

Internet medical and health personnel

Family, friends study more than one source

Appendix

Part II:- Table No(1): Nursing students knowledge about definition, causes and symptoms of Mumps:-

No.	Item	Agree	Disagree	Not sure
1.	Mumps is an infection caused by a virus?			
2.	Do you think that travelling to areas where mumps is endemic or contacting travels to endemic areas can cause mumps?			
3.	Does the incubation period range from two to three weeks?			
4.	Is it usually the first sign of mumps is swollen salivary glands?			
5.	Can infection lead to dry mouth and tooth decay?			
6.	Swollen cheek can be seen during early stage?			
7.	Can mumps spread easily when an infected person cough or sneezes?			
8.	Can children also become infected if they rub their eyes or mouths after touching toys or other objects that a person with mumps has touched?			
9.	Can people with mumps without symptoms transmit the virus?			
10.	Can person get mumps more than once?			

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11.	Do you think that people who work in medical facilities are more vulnerable to disease than the general population?			
12.	Do you think mumps is more contagious from mouth spray or when infected person cough?			
13.	Do you think mumps is more contagious after symptoms appear?			
14.	Do you think that some adults are more susceptible to measles, mumps and rubella?			

Table No(2): Nursing students knowledge of Mumps treatment

No.	Item	agree	disagree	Not sure
1.	Do you think there is a medicine for mumps?			
2.	Do you think the infection within week or two weeks without medication?			
3.	Do you think the plenty of fluid and bed rest is necessary for a patient with mumps?			

Table No(3): Nursing students knowledge of mumps diagnosis:

No.	Item	agree	disagree	Not sure
1.	Do you think the swelling of salivary gland is adequate diagnosis?			

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2.	Do you think the RT_PCR and viral culture are used to confirm mumps infection?			
3.	Do you think buccal smear from the cells on the side cheek or mouth should be performed as a diagnosis?			
4.	Do you think urine test can be detect the mumps virus?			

Table No(4): Nursing students knowledge of mumps vaccine:

No.	Item	agree	disagree	Not sure
1.	Does the MMR vaccine contain live attenuated strains of measles, mumps and rubella viruses?			
2.	Do you think this vaccine is a subcutaneous injection?			
3.	Do you think anyone experiencing of severe allergic reaction should not have the MMR vaccine?			
4.	Is the vaccine give to the elderly?			
5.	Are there side effect of the vaccine?			
6.	Does the MMR causes stiffness in the joints and neck?			
7.	People who are severely immunocompromised should not be given the MMR vaccine?			

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8.	Should women know to be pregnancy not receive the MMR?			
9.	Should you receive a second dose after the first dose of MMR?			
10.	Do you think the purpose of second dose of MMR to produce immunity in those who did not respond to the first dose?			

Table No(5): Nursing students knowledge of mumps complication:

No.	Item	agree	disagree	Not sure
1.	Can infection with mumps lead to meningitis?			
2.	Can mumps cause potential complication from encephalitis(brain infection)?			
3.	Can this syndrome cause one or more problems including pancreatitis, pain during chewing or swallowing, and dry mouth?			
4.	It is possible women with mumps may suffer from ovaritis?			
5.	Is it possible that people with mumps may suffer from hearing loss?			

الخلاصه

الخلاصة:-

النكاف (التهاب الغدة النكفية)، هو عدوى فيروسية حادة في الغدد اللعابية ناجمة عن أحد أنواع عائلة فيروسية مخاطانية. فيروس باراميكسوفيروس خاصة النكاف له تأثير مهم في المسببات والتسبب في التصلب المتعدد MS. السمات السريرية المميزة هي: إنتفاخ الغدد اللعابية النكفية مع وجه مميز يشبه الهامستر. تشمل أعراض النكاف: إرتفاع في درجة الحرارة، صداع، الآم في العضلات، إرهاق، وفقدان في الشهية. تظهر الأعراض بشكل متكرر بعد إسبوعين من الإصابة. تتراوح شدة الأعراض السريرية شديده الى عدم ظهور أعراض في بعض مصابي مرضى النكاف. يحدث إنتقال النكاف من خلال المخاط او اللعاب. يمكن أن يصاب الطفل بفيروس النكاف عن طريق السعال والعطس والتحدث وتبادل الأشياء ولمس المرضى الآخرين. يحدث انتقال النكاف بسرعه حتى قبل ظهور العلامات الأعراض. قد تحدث المضاعفات بعد ٥ أيام من الإصابة بالنكاف، التهاب الدماغ والتهاب السحايا من أسوأ مضاعفات النكاف المصحوبه بالتهاب الخصيه والتهاب الضرع والتهاب المبيض. قد تؤثر المضاعفات على كل من الذكور والإناث. تشمل المضاعفات الأخرى ما يلي: الصمم والتهاب البنكرياس. عدوى النكاف تعطي مناعه دائمه مدى الحياه، لقاح MMR (لقاح الحصبه والنكاف والحصبه الألمانيه) يستخدم للسيطرة على هذه الأمراض الثلاثة ويستخدم عالمياً.

الهدف من الدراسة:-

تهدف هذه الدراسة إلى معرفة مستوى المعلومات المتعلقة بالنكاف لدى طلاب كلية التمريض في جامعة بابل للمرحلتين الثالثة والرابعة .

منهجه الدراسه:-

دراسة وصفية شملت (١٠٠ طالبه) و (٥٠ طالب). وقد نظمت استبانته مكونه من (٣٦)سؤال لتقييم مستوى معرفتهم تجاه الاصابة بالنكاف .

النتائج:-

اجريت الدراسة على (١٥٠) طالب من المرحلتين الثالثة والرابعة فقط من كلية التمريض لتقييم معرفتهم بالنكاف وزيادة الوعي بعوامل الخطر لهذا المرض. كان معدل المعرفة الاعلى بين الفئات العمريه (٢٠_٢٣) بنسبه (٧٨,٧%)، كان لدى الطلاب غير المتزوجين ايضا معرفه اكثر من الطلاب المتزوجين. وبنسبه (٨٠%)، كان طلاب المدينه اكثر درايه من طلاب الريف، بنسبه (٧٨%). يشار إلى أن المصدر الرئيسي للمعلومات الذي كان أعلى نسبة هو أكثر من مصدر (٣٣,٣%) ، بينما الإنترنت (٢٥,٣%) ، والعاملون في المجال الصحي (١٥,٣%) ، بينما كانت أقل نسبة معرفة من قبل الأسرة والأقارب بنسبة (٤,٧%). وافق غالبية الطلاب (٧٢%) على أن السفر إلى المناطق التي يتوطن فيها النكاف أو اتصالهم بالمسافرين في هذه المناطق يسبب العدوى. واتفق (٦٤%) من الطلاب على أن هذه الاصابة يمكن أن تسبب مشكلة أو أكثر منها التهاب البنكرياس والألم اثناء البلع وجفاف الفم. كما وافق (٧٤%) من الطلاب على وجود علاج للنكاف. وافق (٣٩,٣%) على أن الحصبة الألمانية يمكن أن تسبب التهاب السحايا، كما عارض (٣٣,٣%) منهم.

الاستنتاجات:-

أظهرت الدراسة الحالية أن مستوى المعرفة العامة بعوامل الخطر للإصابة بفيروس النكاف كان كافياً بين الطلاب بمعدل جيد نسبياً. ان معدل معرفة الطلاب بأسباب انتقال الفيروس إلى المناطق التي يتوطن فيها المرض كان عالياً ، وكان أعلى معدل للمعرفة بين (٢٠_٢٣) سنة. في حين كان الطلاب غير المتزوجين أكثر دراية من الطلاب المتزوجين ، كان طلاب المدينة أيضاً أكثر دراية ومعرفة من الطلاب الريفيين. أعلى نسبة معرفة ماخوذة من أكثر من مصدر، بينما أقل نسبة كانت ماخوذة من الأسرة والأقارب. اتفق العديد من الطلاب على أن هذه الأصابة ممكن أن تسبب مشكلة أو مضاعفات ، بينما قلة منهم لم يكن لديهم معرفة بذلك. كما أن اغلب الطلاب وافقو

أن الأطفال يمكن أن يصابو بالنكاف عند لمس عيونهم أو أفواههم بعد لمس ألعاب أو أشياء قد لمسها شخص مصاب بالنكاف.



University of Babylon
College of nursing

تقييم معارف طلاب كلية التمريض تجاه الإصابة بالنكاف

مشروع تخرج مقدم الى كلية التمريض جامعة بابل ضمن متطلبات الحصول على درجة
البكالوريوس في التمريض

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