

Assessment of University Students' Knowledge's concerning German measles And Its Effect on Pregnancy And its Outcomes

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Abstract:

Objectives: To assess the student's knowledge regarding German measles and effect on pregnancy and it's outcomes.

Methodology: A descriptive analytic study has been conducted to university students; the data has been collected through a questionnaire format through interview with the study sample The questionnaire format is comprised of two parts, demographic characteristics and assessment knowledge of university student about German measles. A purposive (nonprobability) sample which consisted of (200) students. Sample which was collected from College of Languages and College of Arts. Data are analyzed through the use Excel (Statistical package) and Descriptive statistic was used to analyze data .

Results: The results of the study revealed that the highest percentages (60%) at age group (21-25) years, (91%) for the unmarried, (48%) source of knowledge from internet, and most study sample are male. The study revealed that the most student had inadequate knowledge about Rubella.

Conclusions: The study concluded that the most student had inadequate knowledge about Rubella.

Recommendation: The study recommended to continues distribution of material through mass media to improve their knowledge of students regarding the German Measles and provide German Measles pamphlet of the instructional material to all students.

Keywords: Assessment, Effect, German Measles, Knowledge, Outcomes and University Students.

I. Introduction

Rubella is of public health importance because of it's teratogenic effect on the fetus if the mother is infected in early pregnancy or just before conception. A woman who is infected just before conception or in early pregnancy has a 90% chance of having her fetus infected with rubella. This can lead to miscarriage, stillbirth or severe birth defects which are collectively known as congenital rubella syndrome (CRS)^(1,2).

Congenital rubella syndrome can present with major eye and heart defects and hearing impairments. Children with CRS are also at risk of developing serious developmental disabilities and are prone to other lifelong disabilities such as autism, diabetes mellitus and thyroid dysfunction⁽²⁾.

There has been a renewed effort by World Health Organization (WHO) to eliminate measles and rubella in most regions of the world. This led to the launching of a new Global Measles and Rubella Strategic Plan by the Measles & Rubella Initiative in April 2012. The plan aims to eliminate measles and rubella in at least five WHO regions by 2020. Part of the ways to achieve this include: vaccination coverage with two doses of measles and rubella-containing vaccines; effective disease surveillance, and building up public confidence and demand for immunization⁽¹⁾. In this study the researchers try to search student's knowledge regarding German measles and to assess the effect of German measles on pregnancy and it's outcomes.

II. Methodology

A descriptive design was conducted on non-probability sample (purposive) which consisted of (200) student's. the sample which collected from College of Languages consist of (100) and while from College of Arts the sample was (100) students. Data were collected for the period of period of March 22nd 2015 to March 26th 2015. The study was conduct at College of Languages and College of Arts. Questionnaire was used as a tool of data collection to fulfill with objectives of the study which consisted of two parts: including demographic characteristics and Knowledge of University Student's about Rubella and Its effect on pregnancy and it's outcome.

The validity of the instrument was established through a panel of (9) experts. They were faculty members from College of Nursing - University of Baghdad. The experts experience years was 19 ± 12 . These experts were noted to review the questionnaire format for content relevancy and adequacy. Few recommended modifications were done according to experts' opinions.

Data are analyzed through the use of Excel (Statistical package). Through the application of descriptive statistical data analysis include (Frequencies, Percentage, Mean and Standard Deviation).

III. Results

Table (1): Distribution of the Study Sample according to Socio-Demographic Characteristics.

Socio-Demographic Characteristics	Student's (n=200)	
	No.	%
Age groups (years)		
≥ 20	65	32.5
21-25	120	60
26-30	12	6
≤ 31	3	1.5
$\bar{X} \pm SD$ 22.01 ± 2.85		
Marital status		
Married	18	9
Unmarried	182	91
Consanguinity		
relative	8	44.5
Non relative	10	55.5
*Sources of Knowledge		
Family	41	20.5
Internet	96	48
Books	9	4.5
Journals	6	3
TV	39	19.5
Study	52	26
Others	14	7

*More than one answer

Table (1): Age of the study sample: The highest percentage is (60%) at age group (21-25) years; while the lowest percentage is(1.5%) for the age group ≤ 31with mean age and SD is 22.01 ± 2.85. Marital status for the study sample: : The highest percentage is (91%) for the unmarried; while the lowest percentage is (9%) for married.

Consanguinity For The Study Sample: : The highest percentage is (55.5%) of them their parent were married of non Consanguinity; while the lowest percentage is (44.5%) of them were married from their relative. Sources of Knowledge's: The highest percentage is (48%) from Internet source.

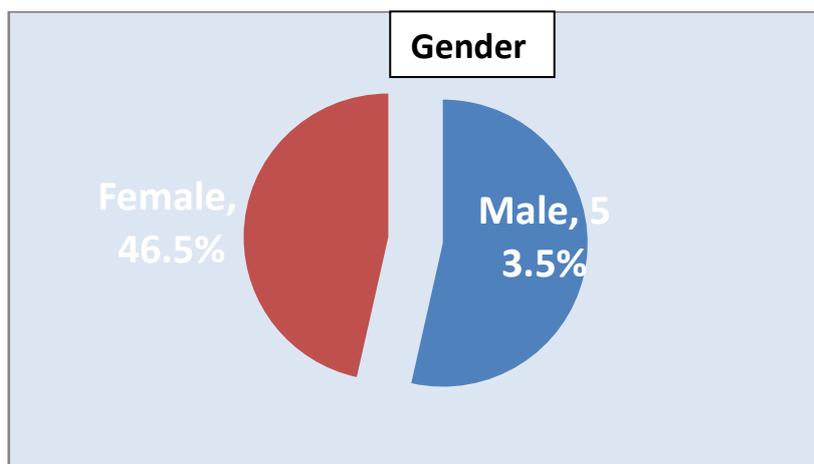


Figure (1): Distribution of the study sample according to gender

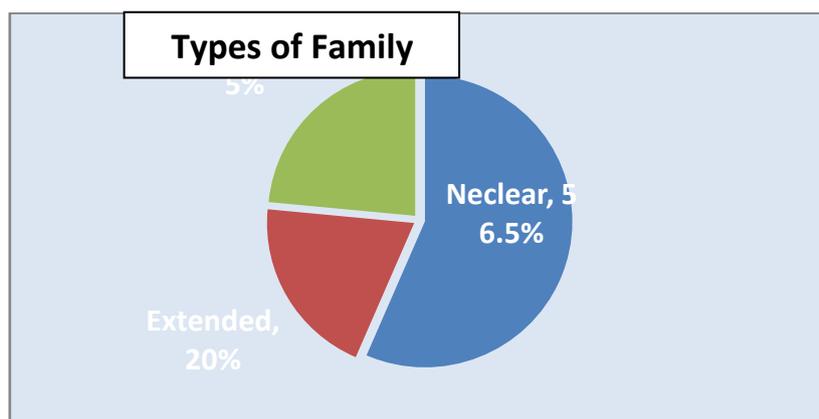


Figure (2): Distribution of the study sample according to types of family

Table (2): Distribution of Study Sample According to Student's Knowledge about Rubella (N=100).

Questions	I Know		Not Sure		I Don't Know		MS	RS
	No.	%	No.	%	No.	%		
1. Rubella is an infectious disease caused by a virus	104	52	54	27	42	21	<u>2.31</u>	77
2. incubation period after that virus enters the body of 14-21 day and usually have 18 days and then begin the symptoms.	19	9.5	88	44	93	46.5	<u>1.63</u>	54.33
3. Infected German measles is contagious from one week before the onset of the rash appear after four day	49	24.5	67	33.5	84	42	1.83	60.83
4. German measles infected person acquires full immunity after recovering from the disease.	83	41.5	55	26.5	62	31	2.11	70.17
5. Diagnosis of measles is done by the presence of antibodies in the blood	67	33.5	74	37	59	29.5	2.04	68
6. Symptoms of infecting with rubella								
6.1. slight rise in temperature of no more than 38.4 c°	67	33.5	73	36.5	60	30	2.04	67.83
6.2. enlargement and weakness in the lymph node and the base of the skull behind the ear.	39	19.5	85	42.5	76	38	1.82	60.5
6.3. Rash.	83	41.5	64	32	53	26.5	<u>2.15</u>	71.67
6.4. Nominated such as colds and the common cold-like symptoms.	56	28	75	37.5	69	34.5	1.94	64.5
6.5. Swelling of the joints and stiffness in adults.	43	21.5	71	35.5	86	43	<u>1.79</u>	59.5
7. Mode of transmission.								
7.1. Breathing	83	41.5	63	31.5	54	27	<u>2.15</u>	71.5
7.2. Feces and urine	61	30.5	69	34.5	70	35	<u>1.96</u>	65.17
7.3. Skin.	76	38	68	34	56	28	2.1	70
8. Transmitted infection in many cases: such as by touching emerging from the patient's mouth or eye fluid measles infected.	71	35.5	80	40	49	24.5	2.11	70.33

9. German measles infected person can transmit the disease through								
9.1. coughing- sneezing -talking	90	45	68	34	42	21	2.24	74.67
9.2. The infected post eating and drinking.	90	45	58	29	52	26	2.19	73
10. Prevention of the disease are taking the vaccine (vaccine) of the only German measles								
	83	41.5	70	35	47	23.5	2.18	72.67
11. Measles vaccine called Tri-measles (MMR vaccine for measles, mumps and rubella)								
	51	25.5	73	34.5	76	38	1.88	62.5
12. Regular measles vaccine is given as follows:								
12.1. Dose at age 12-15 months.	40	20	78	39	82	41	<u>1.79</u>	59.67
12.2. Dose at age 4-5 years or 11-12 years.	45	22.5	79	39.5	76	38	<u>1.85</u>	61.5
13. Vaccinate any woman of childbearing age rubella vaccine must ensure that no pregnancy has for a period not less than three month from the date of vaccination.								
	43	21.5	83	41.5	74	37	1.85	61.5
14. German measles there is no specific treatment but must vaccine-preventable.								
	48	24.5	87	43.5	65	32.5	1.92	63.83
15. German measles treatment according to signs and symptoms								
	54	27.5	86	43	60	30	1.97	65.67
16. Pregnant women who did not receive a vaccine against measles and measles should they								
16.1. consult the doctor	89	44.5	55	27.5	56	28	2.17	72.17
16.2. immune globin taking an injection to relieve symptoms	35	17.5	81	40.5	84	42	1.76	58.5
17. German measles-infected women in the eighth week to the tenth week of pregnancy, her child has about 90% chance of distortion.								
	41	20.5	69	34.5	90	45	1.76	58.5
18. If the mother was immune to rubella in the past, hit by a very small percentage.								
	63	31.5	62	31	75	37.5	1.94	64.67
19. Rubella cause miscarriage.								
	44	22	70	35	86	43	1.79	59.67
20. Effect the fetus on the first 20 weeks gestation.								
	49	24.5	72	36	79	39.5	1.85	61.67
21. Effect of rubella on the pregnancy Outcome								
21.1. Rubella cause deformities of the fetus.	49	24.5	80	40	71	35.5	<u>1.89</u>	63
21.2. German measles during pregnancy causes premature birth.	44	22	71	35.5	85	42.5	<u>1.8</u>	59.83
22. Newborn after birth may develop diabetes cause the destruction of the pancreas by the virus.								
	37	18.5	72	36	91	45.5	1.73	57.67
23. German measles is called rubella syndrome causes mental retardation for newborn.								
	36	18	70	35	94	47	1.71	57
24. The symptoms of rubella to the newborn:								

24.1. Growth retardation and microcephaly.	48	24	64	32	88	44	1.8	60
24.2. Eye lens of the eye and the small.	33	16.5	72	36	95	47.5	1.69	56.33
24.3. Cardiac abnormalities.	36	18	62	31	102	51	1.67	55.67

Table (2) show that the highest mean of score (2.31) in item NO.(1); Rubella is an infectious disease caused by a virus; while the lowest mean of score is (1.63) in item NO.(2); After the incubation period of the virus that enters the body of 14-21 day and usually have 18 days and then begin the symptoms.

Symptom of infecting with rubella: the highest mean of score (2.15) in item NO.(6.3) rash; while the lowest mean of score is (1.79) in item NO.(6.5) swelling of the joints and stiffness in adults.

Mode of transmission: the highest mean of score is (2.15)in item NO. (7.1) Breathing; while the lowest mean of score is (1.96) in item NO.(7.2) feces and urine.

Prevention: the highest mean of score is (1.85) in item NO. (12.2): dose at age 4-5 years or 11-12 years, while the lowest mean of score is (1.79) in item NO (12.1): dose at age 12-15 months.

Effect of rubella on the pregnancy Outcome: : the highest mean of score is (1.89) in item NO. (21.1) rubella cause deformities of the fetus; while the lowest mean of score is (1.8) in item NO. (21.2) German measles during pregnancy causes premature birth.

IV. Discussion

Table (2) show that the highest mean of score (2.31) in item NO.(1); Rubella is an infectious disease caused by a virus; while the lowest mean of score is (1.63) in item NO.(2); After the incubation period of the virus that enters the body of 14-21 day and usually have 18 days and then begin the symptoms.

Rubella is an acute viral illness, characterized by mild maculopapular rash often with postauricular or suboccipital adenopathy. Usually mild in children, rubella in adults may be accompanied by low-grade fever, headache and arthralgias. Less common complications are thrombocytopenia and encephalitis (1 per 6000 cases), which may be fatal. Up to 50% of infections with the rubella virus can be asymptomatic. Like measles virus, rubella virus is also transmitted by respiratory droplets and by direct or indirect contact with the nasal and throat secretions of infected persons, but is less contagious. Individuals are most infectious when the rash is erupting, but they may shed virus from seven days before to 14 days after the onset of rash. Following exposure, the incubation period before onset of symptoms is usually 14–18 days (range 12–23 days). The outcome of rubella is most serious when infection occurs during early pregnancy, as it can result in spontaneous abortion, stillbirth or an infant born with a combination of birth defects, known as CRS⁽³⁾.

Symptom of infecting with rubella: the highest mean of score (2.15) in item NO.(6.3) rash; while the lowest mean of score is (1.79) in item NO.(6.5) swelling of the joints and stiffness in adults.

Rubella has symptom that are similar to those of flu. However, primary symptom of rubella virus infection is the appearance of a rash. The facial rash usually clears as it spreads to other parts of the body . other include low grade fever, swollen glands (sub occipital & posterior and posterior cervical lymphadenopathy), joint pains, headache and conjunctivitis⁽⁴⁾.

Mode of transmission: the highest mean of score is (2.15)in item NO. (7.1) Breathing; while the lowest mean of score is (1.96) in item NO.(7.2) feces and urine.

Rubella is spread by droplet transmission. The incubation period is 14 to 21 days, with the majority of individuals developing a rash 14 to 17 days after exposure. Individuals with rubella are infectious from one week before symptoms appear to four days after the onset of the rash⁽⁵⁾.

Effect of rubella on the pregnancy Outcome: : the highest mean of score is (1.89) in item NO. (21.1) rubella cause deformities of the fetus; while the lowest mean of score is (1.8) in item NO. (21.2) German measles during pregnancy causes premature birth.

Rubella (initially known as German measles) is associated with 80% risk of usually multiple congenital abnormalities if acquired in the first 12 weeks of pregnancy 1; especially the first 8-10 weeks , and leads to fetal growth problems or stillbirth⁽⁶⁾.

If maternal infection occurred after the first trimester , the frequency and severity of fetal damage decreases significantly. Fetal defects are rare after the 16th weeks of pregnancy although sensor neural hearing deficit may occur up to the 20th week2, but following this period the incidence of rubella –induced defects is less than 2% with deafness and retinopathy often being the only manifestations of congenital infection at time⁽⁷⁾.

Prevention: the highest mean of score is (1.85) in item NO. (12.2): dose at age 4-5 years or 11-12 years, while the lowest mean of score is (1.79) in item NO (12.1): dose at age 12-15 months.

All women with low level Rubella immunity (Rubella IgG 10-20 IU/mL) should be offered MMR vaccination following birth. A Rubella IgG level> 10 IU/mL is usually considered protective against infection but rubella antibody levels in the range of 10-20 IU/mL are likely to wane to non-protective levels prior to a

next pregnancy. Pregnant women are treated by many biological neonates ,about 7% have symptoms and signs at birth agents, which are potentially harmful to the fetus ⁽⁸⁾; like retinitis, hepatosplenomegaly, microcephaly, Pregnant women and their infants with intrauterine thrombocytopenic purpura which are recognized as growth retardation are screened for TORCH an infection cytomegalic inclusion disease ⁽⁹⁾. For the period of the which stands for toxoplasmosis, other (infections), first year of life, about 20% of such children die. Over rubella, cytomegalovirus and herpes ⁽¹⁰⁾. 90% of the rest will suffer with serious health problems, Cytomegalovirus(CMV) and rubella are accounted as including hearing loss and mental retardation dangerous viral infections to the fetus. The pathogenesis The rubella virus provide a plausible mechanism as fetal infection due to CMV which is diverse which including human teratogen and the infection among pregnant thrombocytopenia, brain anomalies, fetal infection with women play a role in the serious consequences for the hepatitis and other asymptomatic infection⁽¹¹⁾. The virus can cause fetal damage which is reported that CMV infects between 0.3 and 2.4% of known as congenital rubella syndrome(CRS)⁽¹²⁾. The success of the WHO Europe regional strategy in eliminating rubella depends mostly on the immunization coverage levels achieved with in EU countries. Suboptimal vaccination coverage, in fact, cause a reduction of incidence but also an increase of the average age with more cases being reported in teenagers and adults and a subsequent higher risk of(congenital rubella syndrome) CRS. Even though the incidence of CRS depends on the percentage of seronegative women in their procreative period ,immunization of females of reproductive age is an effective but underutilized method of CRS ⁽¹³⁾ has revealed that although pregnancy is a contraindication to receipt of rubella vaccine, there is still possibility that un knowingly pregnant women will receive the vaccine. Even though the available data on pregnant women who have received rubella vaccine documented no risk to the fetus, these mass campaigns have provided an opportunity to further increase our knowledge of the safety of rubella vaccine if an unknowingly pregnant women is vaccinated in early pregnancy.

V. Recommendations

- The study recommended to continues make lectures for all students regarding the German Measles.
- Distribution of German Measles pamphlet of the instructional material to all students.
- Continuing childhood immunization program with MRR vaccine
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References

- [1] WHO. 2013a. Rubella factsheet. Available at <http://www.who.int/mediacentre/factsheets/fs367/en/> (accessed 14 May 2013).
- [2] WHO. 2011. Rubella vaccine. WHO Position Paper. *Weekly Epidemiological Record* 29(86):301–316 <http://www.who.int/wer/2011/wer8629.pdf>. United States Centers for Disease Control and Prevention. Rubella. In: Atkinson W et al., eds. *Epidemiology and prevention of vaccine-preventable diseases*, 9th ed. Washington, DC, Public Health Foundation, 2006 (<http://www.cdc.gov/vaccines/pubs/pinkbook/pink-chapters.htm>, accessed 15 December 2012).
- [4] Edlich RF, Winters KL, Long WB 3rd, Gubler KD. Rubella and congenital rubella (German measles). *J Long Term Eff Med Implants* 2005;15(3):319–28 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/148498/Green-Book-Chapter-28-v2_0.pdf
- [6] Best JM. "Rubella". *Semin Fetal Neonatal Med* 2007;12 (3): 182–92. doi:10.1016/j.siny.2007.01.017. PMID 17337363.]
- [7] Banatvala JE ,Brown DWG . Rubella .lancet.2004 ;363 :1127-37.from en. wikipedia .org Retrieved in 30-2-2014.
- [8] Ekblad U. Biological agents and pregnancy. *J Occup Environ Med* 1995;37(8):962-5 from www.ncbi.nlm.nih.gov retrieved in 2-6-2014
- [9] Griffiths PD, Walter S "Cytomegalovirus". *Curr. Opin. Infect. Dis.*, June 2015,18(3): 241-5 from .<http://dx.doi.org> .retrieved in 3-2-2014).
- [10] Khan NA, Kazzi SN Yield and costs of screening growth-retarded infants for torch infections. *Am J Perinatol* ,2000,17(98):131-135. From <http://www.ncbi.nlm.nih.gov> retrieved in -6-20-2014
- [11] Lagsse N, Dhooge I, Govaert P. Congenital Cytomegalovirus and hearing loss, 2000;54(4):431-6 from www.ncbi.nlm.nih.gov retrieved in 2-1-2014
- [12] Minussi L, Mohrdieck R, Bercini M. Prospective evaluation of pregnant women vaccinated against rubella in southern Brazil. *Reprod Toxicol* 2008;25(1):120-3 from www.ncbi.nlm.nih.gov retrieved in 5-15-2014
- [13] Elias Langianol, Maria Ferraral, Liana Lannil, Patrizia Atreil, Giuseppe Martellucci 2,Elicabetta De Vito, Rubella seroprevalence in chiledbearing age women:across sectional study in the province of Frosinone ,central southern Italy,2009,6(3) :98-9,from paconrad@ucdavis.edu retrieved in 20-6-2014). Castillo, 2008