

# Assessment Nursing Knowledge Related Child G6PD Disease under Adolescent Age

Ahmed Abudallh. Abud

## ABSTRACT

**Background:** G6PD is a coagulation condition caused by a genetic fault.

**Objective of the study :** Evaluate nurses' understanding of children with G6PD. Determine the relationship between the knowledge of nurses and their age, training program, years of experience, and socioeconomic position.

**Method:** Thirty nurses who work in pediatric hospitals made up the non-random (purposive) sample that was used in this study in order to meet its goals. From May 1, 2017, to April 20, 2018, a nonexperimental study was conducted in a hospital in Al-Nasiriyah City to evaluate the knowledge of nurses regarding children with G6PD who are employed there and to determine the correlation between the nurses' knowledge and their demographic attributes. Three sections of a developed questionnaire created specifically for the study are used to collect the data: The first section pertains to the demographics of the nurses, including their age, education level, marital status, number of years spent working in the G6PD ward, length of employment, and residential area. The second section is made up of questions about the nurses' knowledge, which is a list of (13) items about the definition, symptoms, and diagnosis of thalassemia. Prior to doing the assessment, the questionnaire is used for the pretest. A panel of experts assesses the validity of the questionnaire and uses the results of a pilot study to determine its dependability. Frequency and percentage are two descriptive statistics that are used to assess the data.

**Result:** the finding shows 62.1% of the study sample is between the ages of 20 and 29; 62.1% of the sample is female; and 62.1% is single and also indicates that the nurses have a moderate level of knowledge when it comes to answering knowledge questions.

**Conclusion:** The great majority of nurses are in the 20–29 age range were women, and most of them hold a nursing diploma. In summary, the nurse's knowledge and practice as a whole score indicate a low degree of proficiency.

## INTRODUCTION

Individuals with glucose phosphate dehydrogenase deficiency (G6PDD), an inherited metabolic error, are predisposed to the breakdown of red blood cells. Most affected people don't exhibit any symptoms at all [1].A.[3] Most afflicted people don't exhibit any symptoms. A specific trigger may cause symptoms like weariness, dyspnea, dark urine, and yellowish skin.[1][2] Among the risks include anemia and neonatal jaundice.[2] Some people never show any symptoms at all. This X-linked recessive condition results in defective glucose-6-phosphate dehydrogenase. Red blood cell disintegration can be brought on by specific foods (such as fava beans), diseases, stress, and certain drugs.[1]The severity of the disease varies based on the specific mutation in [3].[2] Most afflicted people don't exhibit any symptoms. A diagnosis is made based on the patient's symptoms, and blood and genetic testing are used to confirm the diagnosis.[2] Steer clear of triggers at all costs.[3] Treatments for acute episodes include blood transfusions, antibiotics for infection, and stopping the offending medication.[3] Infant jaundice can be treated using special lighting. It is recommended that people be tested for G6PDD before taking certain medications, namely primaquine. [2] The condition affects around 400 million people worldwide. In several parts of the Middle East, Asia, Africa, and the Mediterranean, it is particularly common. More often than not, guys are affected [1].[1] According to estimates, 33,000 people lost their lives as a result of it in 2015.[4] The G6PDD gene may provide partial protection against malaria [1]. In unfavorable lyonization, a population of red blood cells deficient in G6PD coexists with red blood cells that are unaffected. The X-linked pattern of

inheritance causes a population of symptomatic patients that is almost exclusively male due to the random inactivation of an X chromosome in some cells. On the other hand, clinical signs are also possible for female carriers. In a girl with one X chromosomal abnormality, the impacted portion of red blood cells will be around half. The ratio can be far greater than half in rare cases, such double X deficiency, which produces a person who is almost as sensitive as a man.

## METHOD

### Design of the Study:

A nonexperimental approach was used to study nurses' attitudes toward kids with G6PD. The purpose of the exercise was to meet the initial goals by administering a knowledge assessment test to a single nursing group. The study was started on November 1st, 2017 and ran through February 14th, 2018. 29 out of 30 (86:100%) non-probability (purposive sample) nurses who work in hospitals were chosen based on the study's criteria and with their consent. The study has involved a total of (29) nurses. Twelve men and eighteen women. Because of their immediate administrator at work, nurses declined to take part in the instructional program.

### Study instrument:

The Nursing Practices Questionnaire. This section contains data about the practices of the nurses. There are 24 items in total, and each item is rated on a three-point rating scale with the options Always,

---

\* Department of Pediatric, College of Nursing  
University of Thi Qar, Iraq.  
Email: Ahmed-abud@utq.edu.iq

Sometimes, and Never. The scale's levels are scored as (3 for Always), (2 for Sometimes, and (1 for Never). The questions cover topics such as the treatment and diagnosis of the predominant kind of thalassemia, complications associated with this form of G6PD, and the impact on the child's lifestyle. A questionnaire is used to gather data in order to assess the practices of the nurses. Through close observation of every nurse's practice, the investigator compiles the responses from the nurses. Three levels of poor knowledge were used to assess the practices of the nurses.

**Reliability of the Instrument:**

Four nurses who work in the pediatric hospital unit at Al-Habboby Teaching Hospital are chosen as a purposive sample; one of them has a G6PD diagnosis for the pilot project. They meet the same requirements as the study's first sample. The study ran from May 9th, November 2017, until November 28th, 2017. dependability is calculated in order to determine the dependability of the device. According to Polite and Hungler (1999), a correlation value above 0.70 is deemed satisfactory, and the data show that the Pearson correlation coefficient, which was  $r = 0.82$ , is acceptable.

**Statistical Analysis:**

Frequencies (F) and percentages are employed in statistical tables to summarize the data. Standard deviation (SD) and mean of score (M.S.) are included in statistical tables.

**RESULTS**

**Table 1.** The Distribution of the Study Sample by their demographical data

| ITEMS                               | f                 | %        |
|-------------------------------------|-------------------|----------|
| <b>1. Age</b>                       | 20-29             | 18 62.1  |
|                                     | 30-39             | 11 37.9  |
|                                     | Total             | 29 100.0 |
| <b>2. Gender</b>                    | Male              | 11 37.9  |
|                                     | Female            | 18 62.1  |
|                                     | Total             | 29 100.0 |
| <b>3. Marital status</b>            | Single            | 18 62.1  |
|                                     | Married           | 11 37.9  |
|                                     | Total             | 29 100.0 |
| <b>4. Level of education</b>        | Preparatory       | 9 31.0   |
|                                     | Institute         | 15 51.7  |
|                                     | Bachelor          | 5 17.2   |
|                                     | Total             | 29 100.0 |
| <b>5. years of service</b>          | less than 5 years | 11 37.9  |
|                                     | More than 5 years | 18 62.1  |
|                                     | Total             | 29 100.0 |
| <b>6. years of service in field</b> | less than 2 years | 12 41.4  |
|                                     | More than 2 years | 17 58.6  |
|                                     | Total             | 29 100.0 |
|                                     | Total             | 29 100.0 |
| <b>7. Resident</b>                  | Rural             | 8 27.6   |
|                                     | Urban             | 21 72.4  |
|                                     | Total             | 29 100.0 |
| <b>8. Economic status</b>           | Not enough        | 23 79.3  |
|                                     | Somewhat enough   | 6 20.7   |
|                                     | Total             | 29 100.0 |

f.= frequency, %= percentage

According to this table, 62.1% of the study sample is between the ages of 20 and 29; 62.1% of the sample is female; 51.7% has an institute; 62.1% has provided services for more than five years; more than two years have been provided in the field; 72.4% of the sample resides in an urban region; 79.3% does not provide enough; and 62.1% is single.

**Table 2.** The Distribution of nurses' knowledge response to G6PD

| ITEMS   | f            | %        | M.S  | Ass. |
|---|--------------|----------|------|------|
| 1. Dehydrogenase or disease called favism on:                                     | I don't know | 5 17.2   | 2.48 | H    |
|   | Not sure     | 5 17.2   |      |      |
|   | I know       | 19 65.5  |      |      |
|   | Total        | 29 100.0 |      |      |
| 2. Defin G6PD disease is  | I don't know | 19 65.5  | 1.34 | L    |
|   | Not sure     | 10 34.5  |      |      |
|   | Total        | 29 100.0 |      |      |
| 3. G6PD disease most commonly affects   | I don't know | 8 27.6   | 1.72 | M    |
|   | Not sure     | 21 72.4  |      |      |
|   | Total        | 29 100.0 |      |      |
| 4. G6PD injury male category:   | I don't know | 13 44.8  | 1.55 | L    |
|   | Not sure     | 16 55.2  |      |      |
|   | Total        | 29 100.0 |      |      |
| 5. Acute clinical symptoms of G6PD  | I don't know | 11 37.9  | 1.62 | L    |
|   | Not sure     | 18 62.1  |      |      |
|   | Total        | 29 100.0 |      |      |
| 6. Function of the enzyme Hexa-phosphate and glucose Extractor for hydrogen       | I don't know | 16 55.2  | 1.45 | L    |
|   | Not sure     | 13 44.8  |      |      |
|   | Total        | 29 100.0 |      |      |
| 7. For natural enzyme (G6PD) in blood   | I don't know | 10 34.5  | 1.66 | L    |
|   | Not sure     | 19 65.5  |      |      |
|   | Total        | 29 100.0 |      |      |
| 8. Diseases associated with G6PD  | I don't know | 11 37.9  | 1.62 | L    |
|   | Not sure     | 18 62.1  |      |      |
|   | Total        | 29 100.0 |      |      |
| 9. Causes of deficiency of the enzyme Hexaphosphate glucose distillates hydrogen: | I don't know | 11 37.9  | 1.62 | L    |
|   | Not sure     | 18 62.1  |      |      |
|   | Total        | 29 100.0 |      |      |
| 10. Hexagon disputed modulate phosphate hydrogen is responsible for               | I don't know | 13 44.8  | 1.90 | M    |
|   | Not sure     | 6 20.7   |      |      |
|   | I know       | 10 34.5  |      |      |
|   | Total        | 29 100.0 |      |      |
| 11. Diagnosis OF G6PD   | I don't know | 19 65.5  | 1.69 | M    |
|   | Not sure     | 10 34.5  |      |      |
|   | Total        | 29 100.0 |      |      |
| 12. When you examine the complete blood picture:                                  | I don't know | 14 48.3  | 1.69 | M    |
|   | Not sure     | 10 34.5  |      |      |
|   | I know       | 5 17.2   |      |      |
| 13. The risks of G6PD disease   | Total        | 29 100.0 | 1.76 | M    |
|   | I don't know | 12 41.4  |      |      |
|   | Not sure     | 12 41.4  |      |      |
|   | I know       | 5 17.2   | 1.76 | M    |
|   | Total        | 29 100.0 |      |      |
|   | Total        | 29 100.0 |      |      |

f= frequency, %= percentage, M. S= mean of score, Ass.= assessment, level of assessment: (1-1.66) = low = L, (1.67-2.33) = moderate = M, (2.34-3.00) = high = H

**Table (2)** demonstrates how nurses answered the G6PD knowledge questions. According to the mean score, 5 things have a moderate level of assessment, 7 have a low level of assessment, and 1 have a high level of assessment out of the total items. This indicates that the nurses have a moderate level of knowledge when it comes to answering knowledge questions.

**Table 3.** The overall score for nurses' knowledge

|                   |                | Frequency | Percent | Cumulative Percent |
|-------------------|----------------|-----------|---------|--------------------|
| Overall knowledge | Poor Knowledge | 12        | 41.4    | 41.4               |
|                   | Fair Knowledge | 17        | 58.6    | 100.0              |
|                   | Total          | 29        | 100.0   |                    |

**Table (2)** demonstrates that the overall score for nurses' knowledge indicates that 58.6% of nurses have low levels of knowledge.

### DISCUSSION

According to Table (1), 62.1% of the study sample is between the ages of 20 and 29; 62.1% of the sample is female; 51.7% has an institute; 62.1% has provided services for more than five years; more than two years have been provided in the field; 72.4% of the sample resides in an urban region; 79.3% does not provide enough; and 62.1% is single. The impact on a person's lifestyle depends on their socioeconomic status. Clinical characteristics of severe g6pd include anemia, facial bone abnormalities, hepatic, and splenomegaly. (Carol, 2012). The nurses' answers to the G6PD knowledge items are displayed in Table (2). According to the mean score, 5 things have a moderate level of assessment, 7 have a low level of assessment, and 1 have a high level of assessment out of the total items. This indicates that the nurses have a moderate level of knowledge when it comes to answering knowledge questions. The overall score for nurses' knowledge indicates that 58.6% of nurses have low levels of knowledge. acknowledged as a crucial component in the nurses' capacity to provide their patients with a regular and fruitful existence (Al-Botany, 2006). One of the most important resources for improving the quality of care a nurse provides to a patient is their education and experience in that area. In order to prevent potential risk factors and to effectively apply their expertise to patient care, nurses must possess a solid understanding of the scientific principles that underpin each step of the operation (AlBarody, 2005). The outcome is a lack of understanding regarding the age and educational attainment of nurses.

### CONCLUSION

**Based on the data analysis outcomes in accordance with the study's objectives, the following conclusions are drawn:**

**The majority of nurses are in the demographic age range of 20 to 29 years old, and the majority hold a nursing diploma. An inadequate level test indicates a low degree of knowledge .**

### RECOMMENDATIONS

The researcher recommends the following in light of the study's findings:

According to the report, the Ministry of Health should give special consideration to offering unique training courses and enticing all nurses

to take part in the care program both inside and outside of Iraq. Nurses should receive specialized, organized training that is focused on providing care.

Providing articles, journals, and scientific pamphlets about G6PD disease.

Implications of the developed G6PD patient care guidelines that come from this investigation.

**Authorship Contribution:** All authors share equal effort contribution towards (1) substantial contributions to conception and design, acquisition, analysis and interpretation of data; (2) drafting the article and revising it critically for important intellectual content; and (3) final approval of the manuscript version to be published. Yes.

**Potential Conflict of Interest:** None

**Competing Interest:** None

**Acceptance Date:** 27-02-2024

### REFERENCES

1. Dahy, Amany Mohamed, Eman Sayed Masoed, and Howayda Mohammed Ali. "Nurses' knowledge and practices towards children with glucose-6 phosphate dehydrogenase deficiency." *Minia Scientific Nursing Journal* 15.1 (2024): 2-10.
2. Salman, Aqdas D., and Iqbal M. Abass. "Effectiveness Of An Instructional Program Of Premarital Screening For Hereditary Blood Diseases On Student's Knowledge At Baghdad University." *Indian Journal Of Forensic Medicine And Toxicology* 13.1 (2019): 252-258.
3. Salman, Aqdas D., and Iqbal M. Abass. "Effectiveness Of An Instructional Program Of Premarital Screening For Hereditary Blood Diseases On Student's Knowledge At Baghdad University." *Indian Journal Of Forensic Medicine And Toxicology* 13.1 (2019): 252-258.
4. Natour, Nihal, Mariam Al Tell, and Marah Shakhshir. "Knowledge on Anemia Causes and Associated Risks Improve with Education and Better Socioeconomic Standards among Students of Medicine, Pharmacy, Nursing and Other Allied Health Professions in Palestinian Territories." (2022).
5. World Health Organization. *Pocket book of primary health care for children and adolescents: guidelines for health promotion, disease prevention and management from the newborn period to adolescence.* World Health Organization. Regional Office for Europe, 2022.
6. Kyle, Terri. *Essentials of pediatric nursing.* Lippincott Williams & Wilkins, 2008.
7. Brito, Miguel, and Chissengo Tchonihi. "Protection against malaria in heterozygous girls for G6PD deficiency in Angola." *American Journal of Tropical Medicine and Hygiene* 101.Suppl. 5 (2019): 299-299.
8. Abass, Asmaa Mohammed, Khalid Ibrahim Abd-Alrhman, and Amal Ahmad Mobarak. "Nurses' Knowledge and Performance Related to Care of Children With Glucose-6-Phosphate Dehydrogenase Deficiency at Assiut University Children's Hospital." *Assiut Scientific Nursing Journal* 3.5 (2015): 68-78.