
# Assessment of Basra University Students Knowledge about Down Syndrome

**A Research Project**

**Submitted to the counsel of the college of nursing at the University of Basra**

**By Students**

**Rasha Abdelamir Goma** **Maryam Ali Diwan**

**Supervisor**

**Assit Prof. Dr Abdul Kareem Salman**

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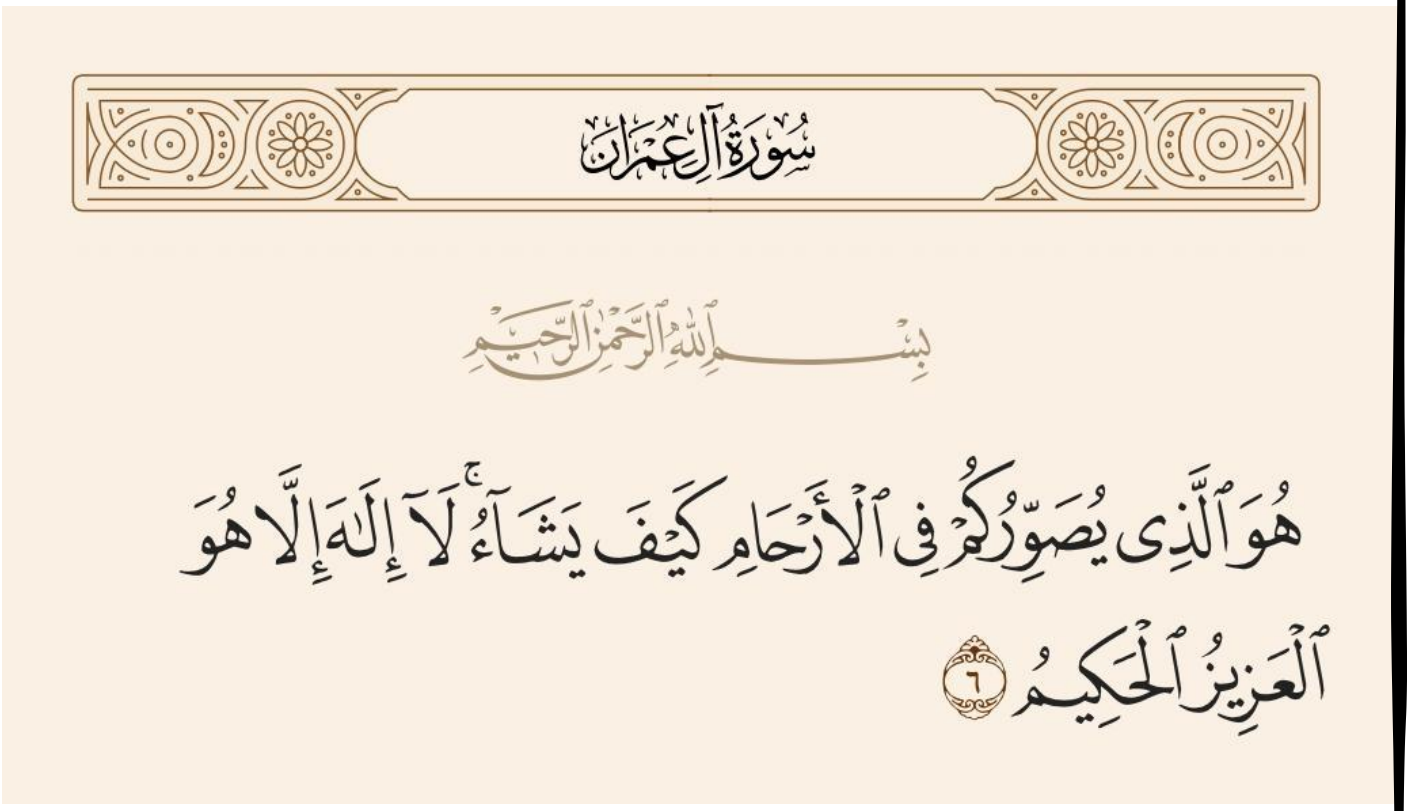


**صدق الله العلي العظيم**

# الإهداء

**إلى صاحب السيرة العطرة، والفكر المُستنير؛**

**فلقد كان له الفضل الأوَّل في بلوغي التعليم العالي**

**(والدي الحبيب)، أطال الله في عُمره.**

**إلى من وضعتني على طريق الحياة، وجعلتني رابط الجأش،**

**وراعتني حتى صرت كبيرًا**

**(أمي الغالية)، طيَّب الله ثراها.**

**إلى إخوتي؛ من كان لهم بالغ الأثر في كثير من العقبات والصعاب.**

**إلى جميع أساتذتي الكرام؛ ممن لم يتوانوا في مد يد العون لي**

**أُهدي إليكم بحثي في.....**

**وإلى الشهداء الأبرار وخاصة ( ابو مهدي المهندس و قاسم سليماني )**

## Supervisors Support

**I certify that this project of research**

**Knowledge of Basra University Students about Down Syndrome**

**Was prepared under my supervision at the college of nursing university of Basra.**

**Ass.prof Dr. Abdul Kareem Salman**

**Department of Nursing BasicsUniversity of Basrah**

**College of Nursing**

# Acknowledgment

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We would also like to thank all the students of Basra University who help with the search

## Abstract about Down Syndrome

Background :Down syndrome (sometimes called Down's syndrome) is a condition in which a child is born with an extra copy of their 21st chromosome — hence its other name, trisomy 21. This causes physical and mental developmental delays and disabilities.

### Aims of study

1. To assess students' knowledge concerning Down syndrome in University of Basra
2. To find out relationship between student knowledge and demographic data (Age,gender,domicile , academic achievement)

### METHODOLOG

### Design of study

Descriptive study design was carried out to accomplish the stated objectives during the period from 1 October 2021 to 1 march 2022.

**Setting of the study**

The study was carried out in "AL - Basra University".

**The sample of the study**

A probability samples consist of (300) students (male and female) whose participated in the study from "AL - Basra university.

**Study instrument**

A structured questionnaire format is constructed through extensive of relevant literature and related research and studies, was used for data collection, which consisted of (2)parts. The overall of the items included

in the questionnaire was (19).The items were rated on two level like scale,yes,no (AppendixB).

Part 1: Demographic characteristics sheet: The first part of the questionnaire sheet included (4) items relative to the demographic data of the student who university of Basra and included; age, gender, domicile, Academic achievement (Appendix A).

Part 2: Students knowledge: The second part of the questionnaire was comprised of (19) items that Students knowledge relative Down syndrome.

A face-to-face interview technique is used to collect student's knowledge regarding Downs's syndrome.

**Rating and scoring**

The items of the study questionnaire have been rated and scored according to the following 1 for no, and 2 for yes.

The assessment of all items by making a cutoff point. Cutoff point with mean of score (0.33%) are due to the two points Likert scales with three levels, poor (less than 1.33), moderate (1.34-1.66), and good (1.67 & more).

**Statistical data analysis.**

Data was analyzed through the use of descriptive data analysis (frequency and percentages) chi- square. Data analyzed using the statistical package for social science (SPSS) version 22 for windows.

**The results** of the present study indicated that the overall assessment of the student knowledge regarding Downs syndrome was moderate with a mean score of (1.54) (Table 4.2).Mean score of student's knowledge regarding Down's syndrome in the rural domicileis moderate (1.41)(table 4.3),the mean

score of the student's knowledge of Down's syndrome in the center domicile is moderate (1.61).

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# Chapter one

# Introduction

## 1-1 Introduction

Down syndrome (DS) is the most common chromosomal malformation in newborns. In Europe, DS accounts for 8% of all registered cases of congenital anomalies. Throughout the world, the overall prevalence of DS is 10 per 10,000 live births, although in recent years this figure has been increasing. To a large extent, the prevalence of DS depends on several socio-cultural variables. In countries where abortion is illegal such as Ireland and the United Arab Emirates, its prevalence is higher. Conversely, in France, DS prevalence is low, and this is probably due to a high percentage of DS pregnancy terminations **(1)**In The Netherlands, the most recent measure of DS prevalence was 16 per 10,000 live births( **2)**

In the United Kingdom, the prevalence of pregnancies affected by DS has increased significantly, but there has been no overall change in the live birth prevalence of DS. Increasing maternal age and improved survival rates for infants with Down syndrome have outweighed the effects of prenatal diagnosis followed by the termination of pregnancy and a declining general birth rate **(3)**

DS is characterized by several dysmorphic features and delayed psychomotor development. Children with DS also have an increased risk of concomitant congenital defects and organic disorders such as congenital heart

and gastrointestinal defects, celiac disease and hypothyroidism(**4)** The median age at death of individuals with DS has risen significantly in the US, from 25 years in 1983 to 49 years in 1997. Congenital heart defects (CHD) and respiratory infections are the most frequently reported medical disorders on death certificates for individuals with DS (**5**)

Standardized mortality odds ratios (SMORs) in DS were low for malignancies except for leukemia and testicular cancer, which were seen more often in individuals with DS **(6)**

Recent decades have seen a substantial increase in the life expectancy of children with DS. In The Netherlands, the infant mortality rate in children with DS dropped from 7.07% in 1992 to 4% in 2003 (this is in contrast with the 0.48% infant mortality of the reference population in The Netherlands in 2003) **(7)**The fall in DS mortality was mainly related to the successful early surgical treatment of CHD and to the improved treatment of congenital anomalies of the gastrointestinal tract (**8)**

The life expectancy of children with DS is primarily dependent on the risk of mortality in the first year of life. While modern medical care has reduced the mortality rate to more acceptable values, both morbidity and mortality could be further reduced. In this respect, respiratory infections and neonatal problems are the most important issues to be solved.

Since children with DS now have an improved life expectancy, the total population of individuals with DS is expected to grow substantially. Preventive

health care programmes for these children will contribute to the improvement of their overall outcome and quality of life; therefore, it is very important to keep the medical guidelines updated **(9)**

## 1-2 Importance of study

As adults, people with Down syndrome may learn to decide many things on their own, but will likely need help with more complex issues like birth control or managing money. Some may go to a college that can provide accommodations and modifications tailored to developmental and intellectual

delays and may go on to live independently, while others will need more day-to-day care [March of Dimes: “Down Syndrome.

Worldwide, the incidence of Down syndrome is estimated to be about one in every 1000 births. In the United States, it is estimated that about 6000 babies are born each year with Down syndrome, which means around one in every 700 babies has the condition.

## 1-3 Aims of study

1. To assess students' knowledge concerning Down syndrome in University of Basra

2. To find out relationship between student knowledge and demographic data (Age,gender,domicile , academic achievement)

### 1-4 Definition of terms

**Knowledge**

**Theoretical Definition**

It is the capacity to acquire, retain and use information a mixture of comprehension, experience, discernment and skill **(10)**

**Operational Definition**

An operational definition is designed to model or represent a concept or theoretical definition, also known as a construct. Scientists should describe the operations (procedures, actions, or processes) that define the concept with enough specificity such that other investigators can replicate their research.

# Chapter two

# Review of literature

# Chapter two

## Literature review

### 2-1 History of disease

English physician John Langdon Down first described Down syndrome in 1862, recognizing it as a distinct type of mental disability, and again in a more widely published report (**11**)By the 20th century, Down syndrome had become the most recognizable form of mental disability.

In antiquity, many infants with disabilities were either killed or abandoned (**12**)Researchers believe that a number of historical pieces of art portray Down syndrome, including pottery from the pre-Columbian Tumaco-La Tolita culture inpresent-day Colombia and Ecuador(**13**)and the 16th-century painting The Adoration of the Christ Child.(**14**)

In the 20th century, many individuals with Down syndrome were institutionalized, few of the associated medical problems were treated, and most people died in infancy or early adulthood. With the rise of the eugenics movement, 33 of the then 48 U.S. states and several countries began programs of forced sterilization of individuals with Down syndrome and comparable degrees of disability. Action T4 in Nazi Germany made public policy of a program of systematic involuntary euthanization (**15**)

### 2-2 Symptoms

It's easy to fall into thinking that everyone with Down syndrome looks a certain way and has certain abilities, and that's the end of the story. But it's hardly reality. While Down syndrome affects people both physically and mentally, it's very different for each person. And there's no telling early on what its impacts will be**(16)**

For some people, the effects are mild. They may hold jobs, have romantic relationships, and live mostly on their own. Others may have a range of health issues and need help taking care of themselves **(17)**

No matter what symptoms a person with Down syndrome has, early treatment is key. With the right care to develop physical and mental skills -- and treat medical issues -- children with Down syndrome have a much better chance to reach their full abilities and live meaningful lives (**18**)

## Physical Symptoms

It varies, but people with Down syndrome often share certain physical traits.

For facial features, they may have:

1. Eyes shaped like almonds (may be shaped in a way that's not typical for their ethnic group)
2. Flatter faces, especially the nose
3. Small ears, which may fold over a bit at the top
4. Tiny white spots in the colored part of their eyes
5. A tongue that sticks out of the mouth

They may have small hands and feet with:

1. A crease that runs across the palm of the hand
2. Short fingers
3. Small pinkies that curve toward the thumbs

4. They may also have:
5. Low muscle tone
6. Loose joints, making them very flexible
7. Short height, both as children and adults
8. Short neck
9. Small head

At birth, babies with Down syndrome are often the same size as other babies, but they tend to grow more slowly. Because they often have less muscle tone, they may seem floppy and have trouble holding their heads up, but this usually gets better with time. Low muscle tone can also mean babies have a hard time sucking and feeding, which can affect their weight(**19)**

Like crawling, walking, and talking. As they get older, it may take more time before they get dressed and use the toilet on their own. And in school, they may need extra help with things like learning to read and write and following directions.Some also have problems with behavior – they may not pay attention well, or they can be obsessive about some things. That's because it's harder for them to control their impulses, relate to others, and manage their feelings when they get frustrated. **(20)**

## 2-4 Health Conditions

1. People with Down syndrome are more likely to have certain health problems, such as:**[ National Institutes of Health]**

1. **Hearing loss**. Many have problems hearing in one or both ears, which is sometimes related to fluid buildup.

2. **Heart problems**. About half of all babies with Down syndrome have problems with their heart's shape or how it works.

3. **Obstructive sleep apnea**. This is a treatable condition where breathing stops and restarts many times while sleeping.

4. **Problems seeing**. About half of people with Down syndrome have trouble with their eyesight.

5. They're also more likely to have:**[ Children's Hospital Boston]**

6. **Blood conditions**, such as anemia, where you have low iron. It's not as common, but they also have a higher chance of getting leukemia, a type of blood cancer.

7. **Dementia.** This is an illness where you lose memory and mental skills. Signs and symptoms often start around age 50.

8. **Infections**. People with Down syndrome may get sick more often because they tend to have weaker immune systems.

They're also more likely to be very overweight and have thyroid issues, blockages in their intestines, and skin problems. People with Down syndrome have a shorter life span.

## 2-5 Causes

Down syndrome is caused when one's genetic code has an extra copy of chromosome 21 (or part of one). Since chromosomes normally come in pairs, this is often referred to as trisomy 21.It's not always clear why this anomaly occurs. In most cases, it's a random occurrence at the time a sperm fertilizes an

egg, although certain risk factors for Down syndrome have been identified, and there is one type of the disorder that can be inherited**(21)**

Trisomy for a specific chromosome, including for chromosome 21, is the result of a MI division in the sperm or the egg prior to conception. Each of the

three types of trisomy 21 presents slight nuance in terms of exactly how it is caused**(22**)

- **Complete trisomy 21:** Chromosomes line up to divide and create eggs or sperm in a process called meiosis. With this type of Down syndrome, non-disjunction occurs. That is, an egg is gifted with two 21st chromosomes, rather than one. Once fertilized, that egg then has a total of three chromosomes. This is the most common way Down syndrome occurs.

- **Translocation trisomy 21:** In a translocation, there are two copies of chromosome 21, but extra material from a third 21st chromosome is attached (translocate to) another chromosome. This type of Down syndrome may occur either before or after conception and is the form that may sometimes be passed down (inherited).

- **Mosaic trisomy 21:** This is the least common form of Down syndrome. It occurs after conception for unknown reasons and differs from the other two types of trisomy 21 in that only some cells have an extra copy of chromosome 21. For this reason, the characteristics of someone with mosaic Down syndrome aren't as predictable as those of complete and translocation trisomy 21. They may seem less obvious depending on which cells and how many cells have a third chromosome 21

## 2-6 Genetics

Only one type of Down syndrome—translocation Down syndrome—is considered inheritable. This type is very rare. Of those, only a third are thought to have inherited the translocation. A translocation that will ultimately lead to a child having Down syndrome often takes place when the parent of that child is

conceived. Part of one chromosome breaks off and becomes attached to another chromosome during cell division. This process results in three copies of chromosome 21, with one copy attached to another chromosome, often chromosome 14(**23)**

This anomaly will not affect the normal development and function of the parent because all the genetic material required on the 21st chromosome is present. This is called a balanced translocation. When someone with a balanced translocation conceives a child, though, there's a chance that this will cause that child to have an extra chromosome 21 and therefore be diagnosed with Down syndrome.There's an increased likelihood that the parents of a child with Down syndrome due to a translocation will have other children with the disorder. It also is important that parents of a child with translocation know that their other children could be carriers and could be at risk of having a baby with Down syndrome in the future.If a woman with Down syndrome becomes pregnant, she's at an increased risk of having a baby with Down syndrome but she's just as likely to have a child who doesn't have the disorder**.** (**24)**

## 2-7Risk Factors

There are no environmental factors such as toxins or carcinogens that can cause Down syndrome, nor do lifestyle choices (such as drinking, smoking, or taking drugs) play a part. The only known non-genetic risk factor for having a

child with Down syndrome is what is sometimes referred to as **advanced maternal age** (being over 35). Centers for Disease Control and Prevention. This doesn't mean, however, that having a baby before age 35 is a reliable strategy for preventing Down syndrome. Roughly 80% of children with Down syndrome are born to women who are younger than 35.**(25)**

Here is how the risk of Down syndrome increases with maternal age:

Some women over the age of 35 (or with other risk factors) may choose to have prenatal testing, such as amniocentesis, to screen for Down syndrome. The American College of Obstetricians and Gynecologists recommends, in fact, that all women be offered these options.The decision of whether or not to do this is very personal and should be made with the assistance of genetic counseling. Such tests do pose notable risks that are worth knowing more about before you make your decision **(25)**

## 2-8 Diagnosis

The American College of Obstetricians and Gynecologists recommends offering the option of screening tests and diagnostic tests for Down syndrome to all pregnant women, regardless of age **(25)**

**Screening tests** can indicate the likelihood or chances that a mother is carrying a baby with Down syndrome. But these tests can't tell for sure or diagnose whether the baby has Down syndrome.

- **Diagnostic tests** can identify or diagnose whether your baby has Down syndrome.

Health care provider can discuss the types of tests, advantages and disadvantages, benefits and risks, and the meaning of your results. If appropriate, your provider may recommend that you talk to a genetics counselor **(25)**

**Screening tests during pregnancy**

Screening for Down syndrome is offered as a routine part of prenatal care. Although screening tests can only identify your risk of carrying a baby with Down syndrome, they can help you make decisions about more-specific diagnostic tests **(26)**

Screening tests include the first trimester combined test and the integrated screening test.

**The first trimester combined test**

The first trimester combined test, which is done in two steps, includes:

- **Blood test.** This blood test measures the levels of pregnancy-associated plasma protein-A (PAPP-A) and the pregnancy hormone known as human chorionic gonadotropin (HCG). Abnormal levels of PAPP-A and HCG may indicate a problem with the baby.

- **Nuchal translucency test.** During this test, an ultrasound is used to measure a specific area on the back of your baby's neck. This is known as a nuchal translucency screening test. When abnormalities are present, more fluid than usual tends to collect in this neck tissue.

Using your age and the results of the blood test and the ultrasound, your doctor or genetic counselor can estimate your risk of having a baby with Down syndrome **(27)**

**Integrated screening test**

The integrated screening test is done in two parts during the first and second trimesters of pregnancy. The results are combined to estimate the risk that your baby has Down syndrome(**28)**

**First trimester.** Part one includes a blood test to measure PAPP-A and an ultrasound to measure nuchal translucency.

- **Second trimester.** The quad screen measures your blood level of four pregnancy-associated substances: alpha fetoprotein, stroll, HCG and inhibit A.

**Diagnostic tests during pregnancy**

If your screening test results are positive or worrisome, or you're at high risk of having a baby with Down syndrome, you might consider more testing to confirm the diagnosis. Your health care provider can help you weigh the pros and cons of these tests (**29**)Diagnostic tests that can identify Down syndrome include:

- **Chorionic villus sampling (CVS).** In CVS, cells are taken from the placenta and used to analyze the fetal chromosomes. This test is typically performed in the first trimester, between 10 and 13 weeks of pregnancy. The risk of pregnancy loss (miscarriage) from a CVS is very low.

- **Amniocentesis.** A sample of the amniotic fluid surrounding the fetus is withdrawn through a needle inserted into the mother's uterus. This sample is then used to analyze the chromosomes of the fetus. Doctors usually perform this test in the second trimester, after 15 weeks of pregnancy. This test also carries a very low risk of miscarriage.

Preimplantation genetic diagnosis is an option for couples undergoing in vitro fertilization who are at increased risk of passing along certain genetic conditions. The embryo is tested for genetic abnormalities before it's implanted in the womb**(30**)

**Diagnostic tests for newborns**

After birth, the initial diagnosis of Down syndrome is often based on the baby's appearance. But the features associated with Down syndrome can be found in babies without Down syndrome, so your health care provider will likely order a test called a chromosomal karyotype to confirm diagnosis. Using a sample of blood, this test analyzes your child's chromosomes. If there's an

extra chromosome 21 in all or some cells, the diagnosis is Down syndrome. **(31)**

## 2-9 Treatment & Management

The management of patients with Down syndrome is multidisciplinary. Newborn with suspicion of Down syndrome, should have a karyotyping done to confirm the diagnosis. The family needs to be referred to the clinical geneticist for the genetic testing and counseling of both the parents **(32)**

Parental education is one of the foremost aspects regarding the management of Down syndrome, as parents need to be aware of the different possible conditions associated with it so that they can be diagnosed and treated appropriately. Treatment is basically symptomatic and complete recovery is not possible**(33)**

These patients should have their hearing and vision assessed and as they are more prone to have a cataract, therefore timely surgery is required. Thyroid function tests should be done on a yearly basis and if deranged should be managed accordingly**(34).**

A balanced diet, regular exercise, and physical therapy are needed for the optimum growth and weight gain, although feeding problems do improve after the cardiac surgery**(35).**

Cardiac referral should be sent for all the patients regardless of the clinical signs of congenital heart disease which if present should be corrected within the first 6 months of life to ensure optimum growth and development of the child**(36)**

Other specialties involved include a developmental pediatrician, pediatric pulmonologist, gastroenterologist, neurologist, neurosurgeon, orthopedic

specialist, child psychiatrist, physical and occupational therapist, speech and language therapist, and audiologist **(37)**

## 2-10 Prognosis

With the recent advances in the medical practice, development of surgical techniques for the correction of congenital disabilities and improvement in general care there has been a tremendous increase in the survival of infants and life expectancy of patients with Down syndrome. A Birmingham (United Kingdom) study done almost 60 years ago showed that 45% of the infants survived the first year of life, and only 40% would be alive at 5 years **(38)**

A later study conducted about 50 years after that showed 78% of patients with Down syndrome plus a congenital heart defect survived for 1 year, while the number went up to 96% in patients without the anomalies**(39)**

This rise in the life expectancy of these patients should continue to rise significantly because of the developments in medical science. Healthcare facilities aim to provide proper and timely management to these patients and to help them to have a fulfilled and productive life(40)

## 2-11 Epidemiology

Down syndrome or Down's syndrome is a genetic disorder that affects hundreds of babies worldwide. The condition is caused by the presence of an additional copy of chromosome 21 in a person's cells **(41)**

Humans usually have 46 chromosomes in every cell, with 23 inherited from each parent. Due to the extra copy of chromosome 21, people with Down syndrome have 47 chromosomes in their cells. This additional DNA causes the

physical characteristics and developmental problems associated with the syndrome.**(42)**

The extra copy of chromosome 21 is acquired by chance and although Down syndrome is more common among babies born to mothers of an older age, mothers of any age may have a baby with the condition. **(43)**In around 3% of cases, a part or a whole extra copy of the chromosome occurs but is attached to another chromosome rather than existing as a separate copy. And in around 2% of cases, "mosaic Down syndrome" occurs, which describes a condition where a proportion but not all of a person's cells have an extra copy of chromosome 21.Children with the mosaic form of the condition may have less

of the characteristic features of Down syndrome due to a certain proportion of their cells having a normal number of chromosomal copies (44)

Down syndrome can affect individuals of any races or ethnicity and is the most common genetic cause of learning disability. Research has shown a link between advancing maternal age and the risk of Down syndrome developing in babies.Women who are aged 35 years or older when they become pregnant have a greater likelihood of giving birth to a baby with Down syndrome than women who are younger than 35 when they become pregnant. However, most babies with Down syndrome are born to women under the age of 35, due to the higher rate of births among women below this (45)

# Chapter three

# Methodology

# Chapter three

# Methodology

## 3-1 Design of study

Descriptive study design was carried out to accomplish the stated objectives during the period from 1 October 2021 to 1 march 2022.

### 3-2 Setting of the study

The study was carried out in "AL - Basra University".

### 3-3 The sample of the study

A probability samples consist of (300) students (male and female ) whose participated in the study from "AL - Basra university.

### 3-4 Study instrument

A structured questionnaire format is constructed through extensive of relevant literature and related research and studies, was used for data collection, which consisted of (2)parts. The overall of the items included in the questionnaire was (19).The items were rated on two level like scale,yes,no (AppendixB).

Part 1: Demographic characteristics sheet: The first part of the questionnaire sheet included (4) items relative to the demographic data of the student who university of Basra and included; age, gender, domicile, Academic achievement (Appendix A).

Part 2: Students knowledge: The second part of the questionnaire was comprised of (19) items that Students knowledge relative Down syndrome.

A face-to-face interview technique is used to collect student's knowledge regarding Downs's syndrome.

### 3_4 Rating and scoring

The items of the study questionnaire have been rated and scored according to the following 1 for no, and 2 for yes.

The assessment of all items by making a cutoff point. Cutoff point with mean of score (0.33%) are due to the two points Likert scales with three levels, poor (less than 1.33), moderate (1.34-1.66), and good (1.67 & more).

**3-5 Statistical data analysis.**

Data was analyzed through the use of descriptive data analysis (frequency and percentages) chi- square. Data analyzed using the statistical package for social science (SPSS) version 22 for windows.

# Chapter four

# Results of the study

# Chapter four

## Results of the study

This chapter presents the results of the study as follows:

**Table 4.1. Socio-demographic data and distribution of the study sample.**

| Variables | Rating and intervals | frequency | percent |
|---|---|---|---|
| **Gender** | male | 120 | 40% |
| | female | 180 | 60% |
| **Age** | Less than 20 | 60 | 20% |
| | 21- 23 | 150 | 50% |
| | More than 24 | 90 | 30% |
| **Domicile** | Centre | 150 | 50% |
| | Rural | 150 | 50% |
| **Academic hievement** | Medical faculties | 150 | 50% |
| | Other faculties | 150 | 50% |

| Level of knowledge | F | % | M.S | S.D | Ass |
|---|---|---|---|---|---|
| Poor | 4 | 21.05 | 1.54 | .54290 | Moderate |
| Moderate | 9 | 47.36 | | | |
| Good | 6 | 31.57 | | | |
| total | 19 | 100 | | | |

**Table 4.2. Mean score of student's knowledge regarding all items of questionnaire.**

**F: frequency, %: percentage, MS: mean score, St.d: standard deviation, Ass: assessment**

The table above shows the mean score of the student's knowledge of Downs's syndrome is moderate (1.54).

| | | | | | |
|---|---|---|---|---|---|
| **Good** | **6** | **31.57** | | | |
| **total** | **19** | **100** | | | |

| **Level of knowledge** | **F** | **%** | **M.S** | **S.D** | **Ass** |
|---|---|---|---|---|---|
| **Poor** | **4** | **21.05** | **1.54** | **.54290** | **Moderate** |
| **Moderate** | **9** | **47.36** | | | |
| **Good** | **6** | **31.57** | | | |
| **Total** | **19** | **100** | | | |

**Table 4.3. Mean score of student's knowledge regarding students in the ruraldomicile.**

Table above shows the mean score of the student's knowledge of Down's syndrome is moderate (1.41).

| **Level of knowledge** | **F** | **%** | **M.S** | **S.D** | **Ass** |
|---|---|---|---|---|---|
| **Poor** | **6** | **31.57** | **1.41** | **.56221** | **Moderate** |
| **Moderate** | **9** | **47.36** | | | |
| **Good** | **4** | **21.05** | | | |
| **Total** | **19** | **100** | | | |

**Table 4.4. Mean score of student's knowledge regarding students in the center domicile.**

| | | | | | |
|---|---|---|---|---|---|
| **Poor** | **2** | **10.52** | **1.61** | **.42310** | **Moderate** |
| **Moderate** | **12** | **63.15** | | | |
| **Good** | **7** | **36.84** | | | |
| **total** | **19** | **100** | | | |

The table above shows the mean score of the student's knowledge of Down's syndrome is moderate (1.61).

**Table 4.5. Association between students' knowledge regarding Downs's syndrome and their gender.**

| | | Level of Knowledge | | | Total | Pearson Chi-Square | | |
|---|---|---|---|---|---|---|---|---|
| | | poor | moderate | good | | value | Df | sig. |
| gender | male | 20 | 70 | 30 | 120 | .708 | 2 | .702 |
| | female | 30 | 110 | 40 | 180 | | | |
| Total | | 50 | 180 | 70 | 300 | | | |

This table shows that there was no significant relationship between gender and the knowledge of nurses at p-value 0.05 as the table above shows.

| | Level of owledge | | | Total | Pearson Chi-Square | | |
|---|---|---|---|---|---|---|---|
| | P | M | G | | value | df | Sig. |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Age** | Less than 20 | 22 | 44 | 24 | 86 | 3.,495 | 6 | .900 |
| | 21-23 | 25 | 55 | 40 | 120 | | | |
| | 24 & more | 24 | 41 | 25 | 90 | | | |
| Total | | 71 | 140 | 89 | 300 | | | |

**Table 4.6. Association between students' knowledge regarding Downs's syndrome and their age.**

This table shows that there was no significant relationship between age and the knowledge of students at p-value 0.05 as the table above shows.

**Table 4.7. Association between students' knowledge regarding Downs's syndrome and their Academic achievement.**

| | | **Level of Knowledge** | | | **Total** | **Pearson Chi-Square** | | |
|---|---|---|---|---|---|---|---|---|
| | | **poor** | **moderate** | **good** | | **value** | **df** | **sig.** |
| **Academic ievement** | **Medical ılties** | **28** | **41** | **81** | **150** | **.708** | **2** | **.001** |
| | **Other ılties** | **67** | **43** | **40** | **150** | | | |
| **Total** | | **95** | **84** | **121** | **300** | | | |

This table shows that there was a significant relationship between academic achievement and the knowledge of students at p-value 0.05 as the table above shows.

| | **Level of Knowledge** | **Total** | **Pearson Chi-uare** |
|---|---|---|---|

| | | poor | moderate | good | | value | df | sig. |
|---|---|---|---|---|---|---|---|---|
| domicile | Center | 39 | 70 | 41 | 150 | .703 | 2 | .601 |
| | Rural | 33 | 80 | 37 | 150 | | | |
| Total | | 72 | 150 | 78 | 300 | | | |

**Table 4.8. Association between students' knowledge regarding Downs's syndrome and their domicile.**

This table shows that there was no significant relationship between domicile and the knowledge of students at p-value 0.05 as the table above shows.

# Chapter five
# Discussion of the Results

## Chapter Five

## Discussion of the Results

This chapter presents a systematically organized interpretation and reasonably derived discussion of the results with the support of the available literature and related studies.

Regarding Socio-demographic data and distribution of the study sample (table 4.1), the current study included a total number of (300) student who participated in this study. The majority of the sample (50 %) with an average age of 21-25 years old with equal sample size in domicileand academic achievement (50 %) (Table 4.1).

The results of the present study indicated that the overall assessment of the student knowledge regarding Downs syndrome was moderate with a mean score of (1.54) (Table 4.2).Mean score of student's knowledge regarding Down's syndrome in the rural domicileis moderate (1.41)(table 4.3),the mean score of the student's knowledge of Down's syndrome in the center domicile is moderate (1.61).

The results of the study illustrated that there has been no positive relationship between student's knowledge regarding Down's syndrome and their gender, age, and years of domicile (Tables 4.4, 4. 5, 4. 8), and there is a significant association between student's knowledge and there academic achievement (table 4.7).

Abstract The current research deals with the concept of Down syndrome, its symptoms, causes, characteristics, and how to develop verbal and non-verbal communication skills and free expression in drawing for them through an artistic program prepared by the researcher that was applied within two months to four children with Down syndrome aged (5: 9) years, in one of the Specialized centers for the care and rehabilitation of these children. Through

this research, the researcher concluded a set of educational technical methods through which it is possible to develop their verbal and non-verbal

communication skills and free expression through drawing, as well as working to increase their linguistic, cognitive, cognitive, kinesthetic and social skills. And that through what has been proven from the hypotheses of the study **(46)**

# Chapter six

# Conclusions & Recommendations

# Chapter Six

## Conclusion and Recommendations

This chapter reviews the conclusions according to the results of the present study and lists the most important recommendations that may help in developing the strategic planning to Student's Knowledge about Down's syndrome in Al Basra University.

1. Most of the study sample of the study sample with age group (21. 23) years old.
2. The study sample equal in size in domicile and academic achievement.
3. There is significant statistical relationship between the knowledge of the student and the academic achievement.

### 6.2 .Recommendations

1. Instruction manual on Down's syndrome should be published and delivered to students.
2. Increase health awareness among students through the implementation of courses and lectures for students in coordination with the Ministries of Higher Education and Health in order to increase knowledge regarding Down's syndrome
3. Future studies about Down's syndrome in Al-Basra City are required.

# References

**1_ Collins VR, Muggli EE, Riley M, et al. Is Down syndrome a disappearing birth defect? J Pediatr. 2008;152:20–24. doi: 10.1016/j.jpeds.2007.07.045. [PubMed] [CrossRef] [Google Scholar]**

**2_ Roizen NJ, Patterson D. Down's syndrome. Lancet. 2003;361:1281–1289. doi: 10.1016/S0140-6736(03)12987-X. [PubMed] [CrossRef] [Google Scholar]**

**3_ Weijerman ME, van Furth AM, Vonk Noordegraaf A, et al. Prevalence, neonatal characteristics and first-year mortality of Down syndrome: a national study. J Pediatrics. 2008;152:15–19. doi: 10.1016/j.jpeds.2007.09.045. [PubMed] [CrossRef] [Google Scholar]**

**4_ Irving C, Basu A, Richmond S, et al. Twenty-year trends in prevalence and survival of Down syndrome. Eur J Hum Genet. 2008;16:1336–1340. doi: 10.1038/ejhg.2008.122. [PubMed] [CrossRef] [Google Scholar]**

**5_ Collins VR, Muggli EE, Riley M, et al. Is Down syndrome a disappearing birth defect? J Pediatr. 2008;152:20–24. doi: 10.1016/j.jpeds.2007.07.045. [PubMed] [CrossRef] [Google Scholar]**

**6_ Guidelines for basic essential medical surveillance. The Down's syndrome medical interest group UK and Ireland. Available at: Accessed 29 Jan 2010**

**7_ Shin M, Besser LM, Kucik JE, et al. Prevalence of Down Syndrome among children and adolescents in 10 regions of the United States. Pediatrics. 2009;124:1565–1571. doi: 10.1542/peds.2009-0745. [PubMed] [CrossRef] [Google Scholar]**

**8_ Wong V, Ho D. Ocular abnormalities in Down syndrome: an analysis of 140 Chinese children. Pediatr Neurol. 1997;16:311–314. doi: 10.1016/S0887-8994(97)00029-5. [PubMed] [CrossRef] [Google Scholar]**

**9_ Yang Q, Rasmussen SA, Friedma JM. Mortality associated with Down's syndrome in the USA from 1983 to 1997: a population-based study. Lancet. 2002;359:1019–1025. doi: 10.1016/S0140-6736(02)08092-3. [PubMed] [CrossRef] [Google Scholar]**

**10_ Zwaan MC, Reinhardt DR, Hizler J, Vyas P. Acute leukemias in children with Down syndrome. Pediatr Clin North Am. 2008;55:53–70. doi: 10.1016/j.pcl.2007.11.001. [PubMed] [CrossRef] [Google Scholar]**

**11_ National Institutes of Health, Genetics Home Reference: "Down Syndrome."**

**12_ Children's Hospital Boston, The Developmental Medicine Center: "Behavior and Down Syndrome: A Practical Guide for Parents."**

**13_ Alzheimer's Association: "What is Dementia?"**

**14_ NDSS. (n.d.). What causes Down syndrome? Retrieved June 11, 2012,**

**15_ Parker, S. E., Mai, C. T., Canfield, M. A., Rickard, R., Wang, Y., Meyer, R. E., et al. (2010). Updated national birth prevalence estimates for selected birth defects in the United States, 2004–2006. Birth Defects Research. Part A, Clinical and Molecular Teratology, 88, 1008–1016.**

**16_ Genetic and Rare Diseases Information Center (GARD). (2012). Down syndrome. Retrieved June 11, 2012, from**

**17_ Practice Bulletin No. 162: Prenatal Diagnostic Testing for Genetic Disorders. Obstet Gynecol. 2016;127(5):e108-22. doi:10.1097/AOG.0000000000001405**

**18 _ Hollis ND, Allen EG, Oliver TR, et al. Preconception folic acid supplementation and risk for chromosome 21 nondisjunction: a report from the National Down Syndrome Project. Am J Med Genet A. 2013;161A(3):438-44. doi:10.1002/ajmg.a.35796**

**19_ Centers for Disease Control and Prevention. Folic acid helps prevent some birth defects.**

**20_ Facts about Down syndrome. Centers for Disease Control and Prevention. Accessed Dec. 16, 2016.**

**21_ What is Down syndrome? National Down Syndrome Society. Accessed Dec. 16, 2016.**

**22_ Down syndrome fact sheet. National Down Syndrome Society. Accessed Dec. 16, 2016.**

**23_ Messerlian GM, et al. Down syndrome: Overview of prenatal screening. Accessed Dec. 16, 2016.**

**24_ National Library of Medicine. Down syndrome. Genetics Home Reference. Accessed Dec. 16, 2016.**

**25_ National Down Syndrome Society. Down syndrome.**

**26_ Down syndrome. Eunice Kennedy Shriver National Institute of Child Health and Human Development. Accessed Dec. 16, 2016.**

**27_ Frequently asked questions. Prenatal genetic diagnostic tests. FAQ164. Pregnancy. American College of Obstetricians and Gynecologists. Accessed Dec. 16, 2016.**

**28_ Ostermaier KK. Down syndrome: Management. Accessed Dec. 22, 2016.**

**29_ Ostermaier KK. Down syndrome: Clinical features and diagnosis. Accessed Jan. 10, 2017.**

**30_ Gabbe SG, et al., eds. Genetic screening and prenatal genetic diagnosis. In: Obstetrics: Normal and Problem Pregnancies. 7th ed. Philadelphia, Pa.: Saunders Elsevier; 2017.**

**31_ Rink BD, et al. Screening for fetal aneuploidy. Seminars in Perinatology. 2016;40:35.**

**32_ Bunt CW, et al. The role of the family physician in the care of children with Down syndrome. American Family Physician. 2014;90:851.**

**33_ Butler Tobah YS (expert opinion). Mayo Clinic, Rochester, Minn. Jan. 26, 2017.**

**34_ Evans-Martin, F. Fay (2009). Down syndrome. New York: Chelsea House. p. 12. ISBN 978-1-4381-1950-2.**

**35_Tecklin, Jan S. (2008). Pediatric physical therapy (4th ed.). Philadelphia: Lippincott Williams & Wilkins. p. 380. ISBN 978-0-7817-5399-9. Archived from the original on 2017-01-23.**

**36_ Down, JLH (1866). "Observations on an ethnic classification of idiots". Clinical Lecture Reports, London Hospital. 3: 259–62. Archived from the original on 2006-06-15. Retrieved 2006-07-14.**

**37_ EUROCAT Steering Committee . 2014. Congenital heart defect in - Europe**

**38_ Mik G, Gholve PA, Scher DM, Widmann RF, Green DW. Down syndrome: orthopedic issues. Curr Opin Pediatr. 2008;20(1):30-6**

**39_ Miles JH, Takahashi N, Muckerman J, Nowell KP, Ithman M. Catatonia in Down syndrome: systematic approach to diagnosis,**

**treatment and outcome assessment based on a case series of seven patients.Neuropsychiatr Dis Treat. 2019;15:2723-2741**

**40_MooreSW.Down syndrome and the enteric nervous system. Pediatr Surg Int. 2008;24(8):873-83**

**41_MorrisJK,AlbermanE.Trends in Down's syndrome live births and antenatal diagnoses in England and Wales from 1989 to 2008: analysis of data from the National Down Syndrome Cytogenetic Register. BMJ. 2009;339:b3794.**

**42_ Murillo-Vallés M, Martinez S, Aguilar-Riera C, Garcia-Martin MA, Bel-ComósJ,YbernMLG.Subclinical hypothyroidism in childhood, treatment oronlyfollow-up?.BMC Pediatr. 2020;20(1):282.**

**43_MurphyNA,EliasER.Sexuality of children and adolescents with developmentaldisabilities.Pediatrics. 2006;118(1):398-403.**

**44_NationJ,BriggerM.The Efficacy of Adenotonsillectomy for Obstructive Sleep Apnea in Children withDownSyndrome:ASystematicReview. Otolaryngol Head Neck Surg. 2017;157(3):401-408**

**45_ Natoli JL, Ackerman DL, McDermott S, Edwards JG. Prenatal diagnosis of Down syndrome: a systematic review of terminationrates(1995-2011).Prenat Diagn. 2012;32(2):142-53.**

**46_Journal of Specific Education Research 2017 (46), 899-916, 2017**

| ت | الاسم | اللقب العلمي | الشهادة الاختصلص | مكان العمل |
|---|---|---|---|---|
| 1 | أ_د سجاد سالم عيسى | استاذ دكتور | بورد طب الاسرة | كلية التمريض |
| 2 | أ_سندس باقرداود | استاذ مساعد دكتور | تمريض الام والوليد | كلية التمريض |
| 3 | م_د فراس عبد الباقر | مدرس | طب الاسرة | كلية التمريض |
| 4 | ا_كاظم جواد عواد | مدرس | ماجستير تمريض اطفال | كلية التمريض |
| 5 | أ_ افكار فاضل محمد | مدرس | تمريض عقلية ونفسية | كلية التمريض |
| 6 | م-م ماهر عبد الامير | مدرس | ماجستير تمريض بالغين | كلية التمريض |
| 7 | م-علي مالك ترياك | مدرس | ماجستير تمريض بالغين | كلية التمريض |

**استمارة استبيان :معارف طلبة جامعة البصرة حول متلازمة دا**

**العمر : _____**

**الجنس: ذكر ○ أنثى ○**

**محل السكن: مركز ○ اطراف ○**

**التحصيل الدراسي: كليات طبية ○ كليات أخرى ○**

**١.هل سمعت من قبل ب متلازمة داون:**

**نعم □ لا□**

**٢. ما هو الكروموسوم الإضافي المسبب بمتلازمة داون :**

**كروموسوم ٢١□ كروموسوم ٢٢□ كروموسوم ٢٣□**

**٣.ما هي أكثر المشاكل الصحية المصاحبة للمصابين بمتلازمة داون :**

**مشاكل في السمع □ مشاكل في القلب□ مشاكل تنفسية□**

**٤. فرص إصابة الأبناء بمتلازمة داون ___ مع عمر الأم الاكبر من ٣٥**

**تزداد □ تنقص □ لا تتأثر □**

**٥.هل يتم التعرف على متلازمة داون أثناء الحمل:**

**نعم □ لا □**

**٦. ما هو الشهر الذي من الممكن التعرف فيه على اصابة الجنين بمتلازمة داون :**

**الشهر الاول □ الشهر الثاني□ الشهر الثالث□ الكل □**

**٧. ما هي العلامات الشائعة للمصابين بمتلازمة داون ( يمكنك اختيار أكثر من نقطة) :**

**اللسان البارز □ الرقبة القصيرة □ قصر في القامة□ الرأس الصغير□ الوجه المسطح □ الجفون المائلة إلى الأعلى □ نقاط بيضاء صغيرة على الجزء الملون (القزحية) من العين □ وجود الخط الأحادي في راحة اليد □**

**٨. ما هي السلوكيات الشائعة للمصابين بمتلازمة داون ( يمكنك اختيار أكثر من نقطة) :**

**الهروب □ العناد □ مشاكل الانتباه □ الوسواسية □ اضطرابات طيف التوحد □**

**٩. هل تعتقد أنه من الافضل للام الحامل بجنين مصاب بمتلازمة داون ان تقرر :**

**اجهاضه □ ولادته□**

**. ما اطول(اقصى) عمر متوقع للأشخاص المصابين بمتلازمة داون :**

**٣٠ □ ٤٥ □ ٦٠□**

**١١. هل هناك احتمال ان يصبح الرجل المصاب بمتلازمة داون اب :**

**نعم □ لا □**

**١٢. هل هناك احتمال ان تصبح المرأة المصابة بمتلازمة داون حامل :**

**نعم □ لا□**

**١٣.متلازمة داون مرتبطة بزيادة خطر الإصابة ب سرطان الدم :**

**صح □ خطأ □**

**١٤. معظم حالات متلازمة داون موروثة :**

**صح □ خطأ □**

**١٥ . معظم الناس الذين يعانون متلازمة دوان يعانون من أمراض صحية متعددة :**

**صح □ خطأ □**

**١٦. يموت نصف الاطفال المصابين بمتلازمة داون بسبب :**

**امراض قلب □ امرض الكلى □ امراض الجلد □**

**١٧. هل ممكن علاج الطفل المصاب بمتلازمة داون :**

**نعم □ لا □**

**١٨. هل هناك طرق للوقاية من متلازمة داون :**

**نعم □ لا □**

**١٩. هل هناك طرق لإعادة تأهيل المصابين بمتلازمة داون :**

**نعم □ لا □**

**Questionnaire form: Basra University students' knowledge about Down syndrome**

Age :

Gender:

Domicile: Center

Academic achievement: ○ Medical faculties ○ ○ Other faculties ○

1. Have you ever heard of Down syndrome?

Yes □ No □

2. What extra chromosome causes Down syndrome?

chromosome 21□ chromosome 22□ chromosome 23□

3. What are the most common health problems associated with people with Down syndrome:

Hearing problems □ Heart problems □ Respiratory problems

4. Chances of children developing Down syndrome __ with the age of the mother older than 35

Increase □ Decrease □ Not affected □

5. Is Down Syndrome Recognized During Pregnancy:

Yes □ No □

6. What month is it possible to identify a fetus with Down syndrome?

The first month □ the second month □ the third month □ all □

7. What are the common signs of people with Down syndrome (you can choose more than one point):

Protruding tongue □ short neck □ short stature small head □ flat face

upward tilted eyelids □ small white dots on the colored part (iris) of the eye

The presence of a single line in the palm of the hand □

8. What are the common behaviors of people with Down syndrome (you can choose more than one point):

Escape □ stubbornness □ attention problems □ obsessive autism spectrum disorders □

9. Do you think it is best for a pregnant mother with a fetus with Down syndrome to decide:

His miscarriage □ his birth □

10. What is the longest (maximum) life expectancy for people with Down syndrome:

30 □ 45 □ 60□

11. Is there a chance that a man with Down syndrome will become:

Yes □ No □

12. Is there a chance of a woman with Down syndrome becoming pregnant?

Yes □ No □

13. Down syndrome is linked to an increased risk of leukemia:

right □ wrong □

14. Most cases of Down syndrome are inherited:

right □ wrong □

15 . Most people with Down syndrome have multiple health conditions:

right □ wrong □

16. Half of children with Down syndrome die from:

Heart disease □ Kidney disease □ Skin disease □

17. Can a child with Down syndrome be treated?

Yes □ No □

18. Are there ways to prevent Down syndrome?

Yes □ No □

19. Are there ways to rehabilitate people with Down syndrome:

Yes □ No □

## الخلاصة حول متلازمة داون

الخلفية: متلازمة داون (تسمى أحيانًا متلازمة داون) هي حالة يولد فيها الطفل بنسخة إضافية من كروموسومه الحادي والعشرين - ومن هنا جاء اسمه الآخر ، تثلث الصبغي 21. وهذا يسبب تأخيرات في النمو الجسدي والعقلي وإعاقات.

أهداف الدراسة

.1لتقويم معرفة الطلبة بخصوص متلازمة داون في جامعة البصرة

.2لمعرفة العلاقة بين معرفة الطالب والبيانات الديموغرافية (العمر ، الجنس ، محل السكن ، التحصيل الأكاديمي)

المنهجية

تصميم الدراسة

تم تنفيذ تصميم الدراسة الوصفية لتحقيق الأهداف المعلنة خلال الفترة من 1 أكتوبر 2021 إلى 1 مارس 2022.

إعداد الدراسة نفذت الدراسة في "جامعة البصرة."

عينة الدراسة

عينة احتمالية تتكون من (300) طالب وطالبة شاركوا في الدراسة من جامعة "البصرة."

أداة الدراسة

تم إنشاء نموذج استبيان منظم من خلال عدد كبير من المؤلفات ذات الصلة والبحوث والدراسات ذات الصلة ، وتم استخدامه لجمع البيانات ، والذي يتكون من (2) أجزاء. بلغ مجموع المفردات الواردة في الاستبيان (19) ، وتم تصنيف العناصر على مستويين مثل المقياس ، نعم ، لا (الملحق ب)

الجزء الأول: صحيفة الخصائص الديموغرافية: تضمن الجزء الأول من ورقة الاستبيان (4) بنود متعلقة بالبيانات الديموغرافية للطالب الذي شملته جامعة البصرة. العمر والجنس والموطن والتحصيل الأكاديمي (الملحق أ.(

الجزء الثاني: معرفة الطلاب: الجزء الثاني من الاستبيان يتكون من (19) فقرة يعرفها الطالب عن متلازمة داون.يتم استخدام أسلوب المقابلة وجهاً لوجه لجمع معرفة الطالب فيما يتعلق بمتلازمة داون.

التصنيف والتسجيل

تم تصنيف عناصر استبيان الدراسة ودرجاتها وفقًا لـ 1 لـ "لا" و 2 لـ "نعم."
تقييم جميع العناصر من خلال تحديد نقطة قطع. نقطة القطع بمتوسط درجة (0.33٪) ترجع إلى

مقياس ليكرت ذو النقطتين بثلاثة مستويات ، ضعيف (أقل من 1.33) ، متوسط (1.34-1.66) ، جيد (1.67 فأكثر)

تحليل البيانات الإحصائية.

تم تحليل البيانات من خلال استخدام تحليل البيانات الوصفي (التكرار والنسب المئوية) مربع. تم تحليل البيانات باستخدام الحزمة الإحصائية للعلوم الاجتماعية (SPSS) الإصدار 22 لنظام windows

# معارفة  طلبة جامعة البصرة حول متلازمة داوون

مشروع بحث مقدم لكلية التمريض في جامعة البصرة كجزء من متطلبات التخرج

من قبل الطلاب

رشا عبد الأمير جمعة

مريم علي ديوان

مشرف

الأستاذ المساعد الدكتورعبد الكريم سلمان خضير

2022 -2021