



Research Article

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Received: 21 May 2023 / Accepted: 10 August 2023 / Published: 5 September 2023

The Stereotypical Image of People with Down Syndrome from the Viewpoint of Female Special Education Students at Mu'tah University

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DOI: <https://doi.org/10.36941/jesr-2023-0133>

Abstract

This study sought the perspective of female special education students at Mu'tah University to determine the stereotypical image of people with Down syndrome. To achieve the aims of this study, a scale testing the stereotypical image of people with Down syndrome was administered to a random sample of 120 female special education students. The results indicated that female special education students harbored a neutral stereotypical image of people with Down syndrome. In terms of the academic year, statistically significant differences favoring third- and fourth-year students were observed in the dimension of health-related problems. No differences were noted in the general stereotyping of people with Down syndrome between the academic years, students taking a course on intellectual disability, and respondents with previous experience in dealing with people with Down syndrome.

Keywords: Stereotypical image, Down syndrome, Special education, Mu'tah University

1. Introduction

Around six percent of all cases of intellectual disability may be traced to Down syndrome, a genetic disorder (AlKhteeb, 2010). People with Down syndrome have reported that a set of characteristics have become stereotypical of their condition. These features include the upper lateral curvature of the eyes, a tongue that protrudes from a smaller-than-average mouth, a short and flat nose, small ears, a low level of muscle tension, flatness of the front and back of the head, short neck and fingers, and a small stature. In addition, people with Down syndrome are more susceptible to congenital heart valve disabilities, respiratory infections, and leukemia. Their mental disability can range from mild to moderate. Prenatal testing can identify the risk of Down syndrome, and approximately one in every 800 babies is born with this condition (Karkera, 2021). There are three types of Down syndrome. Trisomy 21 accounts for 95% of people with Down syndrome, who have an additional chromosome 21 in every cell. Translocation occurs when the extra chromosome 21 is connected to

another and this type constitutes 4% of Down syndrome cases. Genetic mosaicism or the mosaic type is observed in 1% of Down syndrome cases: some cells include two chromosomes, 21, while others encompass three. People with Down syndrome are often misunderstood. The United Nations General Assembly declared March 21 as World Down Syndrome Day in 2007 to increase awareness about people with Down syndrome and their needs and has observed this day annually since 2012 (United Nation, 2023). Numerous websites exist, conveying myriad myths, information, facts, and misconceptions about Down syndrome and instigating exaggeratedly negative or positive stereotypes about people affected by this condition. This study will review the most prominent myths and misconceptions about Down syndrome and will present facts based on scientific research. Two major reasons have contributed to the prevailing misunderstandings regarding Down syndrome. First, those affected by Down syndrome confronted prejudice and were previously forced to live in shelters. The treatment of Down syndrome ameliorated radically with the abolition of shelters and the positive change in public attitudes toward people with this condition. Second, the paucity of fundamental scientific studies and medical research makes it challenging to receive reliable, up-to-date information regarding people with Down syndrome (The Global Down Syndrome Foundation, 2023).

1.1 General Information

Myths abound about Down syndrome, unfortunately causes either a negative or an exaggeratedly positive stereotypical image of those affected by this condition. Some myths about Down syndrome and the results of studies investigating them are outlined in this section. A study conducted in the Kingdom of Saudi Arabia on the public knowledge of Down syndrome used a sample of 1253 Saudi individuals. The results of that study indicated that around 33.6% of the respondents believed that Down syndrome was curable (Alhaddad et al., 2018). In fact, Down syndrome is an incurable genetic disorder. However, the abilities of people with Down syndrome can improve through rehabilitation, education, and training (AlKhteeb, 2010). The misbelief also exists that all people with Down syndrome display severe cognitive delays (National Down Syndrome Society, 2023). Conversely, most studies indicate that most people with Down syndrome suffer from mild to moderate mental disabilities, and researchers are still exploring the learning potential of students with Down syndrome (AlKhteeb, 2010; National Down Syndrome Society, 2023). Reports of high divorce rates in families of people with Down syndrome are also incorrect (New South Wales, 2023). Studies have indicated low divorce rates in families of people with Down syndrome (Lederman et al., Urbano & Hodapp, 2007). Furthermore, most people think that older mothers give birth to children with Down syndrome (National Down Syndrome Society, 2023), which is not always valid (Alkhteeb, 2010; Alrousan, 2018; The Global Down Syndrome Foundation, 2023) Moric-Petrovic & Kalicanin; 1968). Births by older mothers are indeed associated with a higher rate of Down syndrome. However, 51% of Down syndrome babies are born to mothers under 35 because younger women display higher fertility rates (National Down Syndrome Society, 2023). It is also erroneously thought that people with Down syndrome cannot read and write. People with Down syndrome can develop reading and writing skills and can improve these abilities (Cologon, 2013; Haro et al., 2012; Snowling et al., 2008). People with Down syndrome can also sometimes attain a university education and accomplish graduate (High & Robinson, 2021).

The misbelief that children are negatively influenced by siblings with Down syndrome also exists (New South Wales, 2023). It appears that most children are not adversely affected by the presence of a sibling with Down syndrome (Lina Fernanda Martínez et al., 2021). A study conducted in the United States of America with a sample of 822 siblings of people with Down syndrome revealed the following findings. First, 96% of the study's participants reported sympathizing with people with Down syndrome, 94% of the older siblings stated they were proud of the affected individual, less than 10% felt embarrassed by the concerned sibling, only 5% asserted the desire to replace the related sibling, and 88% of the respondents stated they were better off because of the sibling with Down syndrome. Second, 90% of the study's participants reported that upon reaching adulthood, they

planned to share their lives with their Down syndrome siblings (Skotko et al., 2011). Further, it is a myth that scientists or lay people know everything about Down syndrome (Alsheikh et al., 2019; Cohen; 2020). Much has been learned about Down syndrome; for instance, parents of any age can bear a child with Down syndrome, but scientists have confirmed that advanced parental age is a risk factor. Nevertheless, the specific reasons for the occurrence of Down syndrome remain unelucidated (Cohen, 2020). Many mistakenly think that people with Down syndrome cannot live long (Alsheikh, et al., 2019; The Global Down Syndrome Foundation, 2023). People with Down syndrome can age comfortably (Allred et al., 2021) with a life expectancy of more than 60 years and can even sometimes age into their 80s (The Global Down Syndrome Foundation, 2023). Only 19% of the Saudi population believes accurately that Down syndrome can be diagnosed through an ultrasound and blood test (Alhaddad et al., 2018). Down syndrome can be detected prenatally in multiple ways (Alkhteeb, 2010; Alrousan, 2018); fetal nuchal translucency and maternal serum PAPP-A and free-beta HCG indicators may be used in the first trimester to screen for chromosomopathy (Durković et al., 2018). Thus, Down syndrome can be detected prenatally through a maternal ultrasound, blood test, and amniotic fluid examination (Alkhteeb, 2010; Alrousan, 2018). The misconception about the inability of people with Down syndrome to walk and play sports (The Global Down Syndrome Foundation, 2023) has been disproved; people with Down syndrome could exhibit delays in walking but can walk unassisted if they have no other disabilities (The Global Down Syndrome Foundation, 2023; Malak et al., 2013) and can also play sports (Barbu et al., 2021; The Global Down Syndrome Foundation, 2023; Sanyer, 2006). Some people incorrectly use the term “Mongolian” to denote a person with Down syndrome. This term is no longer used (Alkhteeb, 2021). Finally, the myth that people with Down syndrome are always happy is untrue (National Down Syndrome Society, 2023). People with Down syndrome experience emotions such as sadness like everyone else and can understand and respond to the feelings of others (Güneç, 2022).

1.2 Inclusion of Individuals with Down Syndrome:

The inclusion of people with Down syndrome in regular schools is restrained by the limited knowledge of this genetic condition and the negative attitudes harbored toward individuals with this disorder (Alsheikh, et al., 2019; Pace et al., 2010). It is thought that people with Down syndrome cannot learn in regular schools (Alsheikh, et al., 2019; New South Wales, 2023) and that their inclusion would negatively affect peers without impairments (Alsheikh, et al., 2019). It is therefore deemed that they should attend schools or centers meant exclusively for them (Alsheikh, et al., 2019; National Down Syndrome Society, 2023). Families can also oppose the idea of the successful inclusion of students with Down syndrome in regular schools and may thus require support to understand that the inclusion of their children with Down syndrome in regular schools could be a good experience (Alencar et al., 2019; Luiz et al., 2012). People with Down syndrome can benefit from being included in regular schools (Alabri, 2017; Alencar et al., 2019; National Down Syndrome Society, 2023; Sirlopu et al., 2008). It is generally indicated that appropriate education provided to children with Down syndrome in inclusive environments is more beneficial for them than the instruction they receive in exclusive schools or centers (Hughes, 2006). The successful inclusive schooling of individuals with Down syndrome requires the modification of public attitudes toward them. The relationship between positive attitudes and inclusion is reciprocal because inclusive education also improves attitudes toward people with Down syndrome (Hughes, 2006; Sirlopu et al., 2008).

1.3 Health Problems in People with Down Syndrome:

The belief exists that all people with Down syndrome suffer other health disorders such as Alzheimer’s disease (AD), epilepsy, heart defects, and leukemia (Alkhteeb, 2010; Alsheikh, et al., 2019; Altuna et al., 2021; New South Wales, 2023). Not everyone with Down syndrome develops AD; however, 40%–80% of people with this condition acquire AD-like dementia by their fifth or sixth

decade (Salehi et al., 2015). In addition, people with Down syndrome commonly suffer from epileptic seizures or epilepsy. It has been reported that epilepsy rates range between 1% and 13% in people with Down syndrome; 40% of such individuals suffer seizures before the age of one year and another 40% develop seizures after age 30 (Rahman & Fatema, 2019). Moreover, heart defects are not observed in all people with Down syndrome (Benhaourech et al., 2016), but congenital cardiac diseases do affect 40%–50% of children with Down syndrome (Elmagrpy et al., 2011). A new study has found that 50% of newborns with Down syndrome display congenital heart defects (Delany et al., 2021). Further, the incidence of leukemia in people with Down syndrome is 10–20-fold higher than in the general population (Al-Ain et al., 2022; Marlow et al., 2021). It is inaccurately believed that people with Down syndrome cannot speak or express themselves (Alhaddad et al., 2018). In fact, most people with Down syndrome speak and can articulate their thoughts and feelings. However, they exhibit delays in language acquisition (Arias-Trejo & Barrón-Martínez, 2017; Barbosa Lima et al., 2017). Finally, Down syndrome is erroneously thought to result in a diminished quality of life (Cohen, 2020). Appropriate care is imperative and can ameliorate the quality of life of people with Down syndrome (Cohen, 2020; Fucà et al., 2022; Lee et al., 2020).

1.4 *Self-Determination of People with Down Syndrome:*

In general, the self-determination abilities of people with intellectual disabilities are debatable (Etawi & Altarawneh, 2023). The belief exists that people with intellectual disabilities, including individuals with Down syndrome, cannot self-determine or make autonomous decisions; however, self-determination and decision-making skills can be inculcated in people with mental disabilities (AlTarawneh & Etawi, 2022; Mohaidat & Alkhatbeh, 2021). A previously conducted study indicated that individuals with intellectual disabilities can imbibe a moderate degree of self-determination (Mohaidat & Alkhatbeh, 2021).

1.5 *Social Life and Down Syndrome:*

Many people think that people with Down syndrome spend isolated lives and are rejected by their communities. Conversely, most people with Down syndrome live with their families; engage fruitfully in professional, recreational, and social activities; and participate as active members in their communities (National Down Syndrome Society, 2023). Many individuals help people with Down syndrome live like everyone else (Alhaddad, 2018). The inclusion of people with Down syndrome in social activities improves public attitudes toward them and better their quality of life (Pace et al., 2010). Their participation in social life also helps them make friends with discrete people as well as others living with Down syndrome (Hughes, 2006).

1.6 *Employment and Work for People with Down Syndrome:*

Many people think that adults with Down syndrome do not work (Alsheikh, et al., 2019; National Down Syndrome Society, 2023). Most people also believe that individuals with Down syndrome are unemployable and that unemployment rates are high for this group (Alhaddad, 2018). It is also believed that the presence of people with Down syndrome in the workplace would increase the chances of accidents (Pace et al., 2010). The employment of people with Down syndrome generally relates to societal attitudes toward them (Ceroni et al., 2020; Pace et al., 2010; Tarawneh, 2016). Advances in medical technology enable people with Down syndrome to lead productive lives. Employing people with Down syndrome contributes to their increased independence, helps them develop varied skills including social abilities, and enhances their self-esteem. There is evidence that people with Down syndrome can succeed in the workplace and productively assume work responsibilities (Güneç, 2022); however, their interests and inclinations must be considered.

1.7 *Marriage and Childbearing for People with Down Syndrome:*

Most people believe that people with Down syndrome cannot forge intimate relationships that culminate in marriage, fulfill marital responsibilities (Etawi & AlTarawneh, 2017; National Down Syndrome Society, 2023), or bear children (Azevedo Moreira & Damasceno Espirito Santo, 2013). In fact, some people with Down syndrome have had successful marriage experiences and birthed children without disabilities (Azevedo Moreira & Damasceno Espirito Santo, 2013; Brown, 1996).

The numerous myths and misconceptions about Down syndrome generate exaggeratedly negative or positive stereotypes about people with this condition. This study highlights some general myths and misconceptions about Down syndrome and offers factual information relating to the social and educational inclusion, health difficulties, self-determination, social life, work, and marital prospects of people living with this condition. Further, this study ascertains how female special education students at Mu'tah University stereotype people with Down syndrome.

2. **Study Questions**

- 1- What type of stereotypical image do special education students attending Mu'tah University hold of people with Down syndrome?
- 2- Does the stereotyped image of Down syndrome perceived by special education students attending Mu'tah University differ because of their academic year, taking a course on intellectual disability, or previous experience in dealing with individuals with Down syndrome?

3. **Methods**

This descriptive and analytical study discovers the stereotypical image of Down syndrome harbored by female special education students attending Mu'tah University. It further ascertains whether the stereotype differed according to the year of study of the participants, their taking a course on intellectual disability, and their previous experience in dealing with people with Down syndrome.

3.1 *Study Participants*

A total of 120 randomly selected female special education students attending Mu'tah University participated in the present study. Table 1 presents the participant characteristics according to the stated variables.

Table 1. Study participant characteristics (N = 120)

| Variable | Level of the variable | Number | Percentage (%) |
|---|-----------------------|--------|----------------|
| Academic year | First-Second | 62 | 51.7 |
| | Third-Fourth | 58 | 48.3 |
| Attending a course on intellectual disability | Yes | 62 | 51.7 |
| | No | 58 | 48.3 |
| Previous experience of dealing with people with Down syndrome | Yes | 57 | 47.5 |
| | No | 63 | 52.5 |

3.2 *Study Instrument*

The researchers prepared a study instrument titled the Down Syndrome Stereotypical Image Scale comprising 53 items distributed over seven dimensions listed sequentially below.

1. General information: items 1–10
2. Inclusion: items 11–21
3. Health problems: items 22–26
4. Self-determination: items 27–31
5. Social life: items 32–37
6. Employment: items 38–44
7. Marriage: items 45–53

The content validity of the scale was achieved and the scale's reliability was calculated using the Cronbach alpha equation. Table 2 displays the obtained values.

Table 2. Scale Reliability Ascertained Using the Cronbach Alpha Equation

| Dimension | Reliability |
|--|-------------|
| The first dimension: General information | 0.54 |
| The second dimension: Inclusion | 0.57 |
| The third dimension: Health problems | 0.76 |
| The fourth dimension: Self-determination | 0.72 |
| The fifth dimension: Social life | 0.71 |
| The sixth dimension: Employment | 0.52 |
| The seventh dimension: Marriage | 0.90 |
| Total | 0.89 |

The reliability of the scale's dimensions ranged between 0.52 and 0.90 and the general reliability of the scale was calculated at 0.89; these values were fitting for this study. The study instrument comprised 53 items, including 22 negative statements that were numbered 1, 2, 5, 6, 7, 8, 14, 17, 18, 20, 21, 22, 23, 24, 25, 26, 27, 32, 40, 41, 42, and 52.

The negative items were assigned the following values as follows:

- Always = 1
- Mostly = 2
- Sometimes = 3
- Never = 4

The positive items were computed as follows:

- Always = 4
- Mostly = 3
- Sometimes = 2
- Never = 1

The scores on the scale were then interpreted as follows:

- (1–1.99) = a negative stereotypical image
- (2–2.99) = a neutral stereotypical image
- (3–4) = a positive stereotypical image

3.3 Data Collection

The study instrument was digitized and electronically administered to a randomly selected sample of female special education students attending Mu'tah University. The respondents received a Google Drive link through the Microsoft Teams software.

4. Findings and Discussion

To answer the first question, the averages and standard deviations of the scores were calculated for the items and dimensions of the scale and the scale in general. These values are presented in Table 3.

Table 3. The Means and Standard Deviations of the Scores on the Scale

| First dimension: general information | | | | |
|---|--|------|--------------------|---------------------|
| # | Item | Mean | Standard deviation | Stereotypical image |
| 1 | People with Down syndrome have limited mental capabilities. | 2.22 | 0.68 | Neutral |
| 2 | All people with Down syndrome have (47) chromosomes instead of (46) chromosomes. | 1.40 | .82 | Negative |
| 3 | People with Down syndrome can live to a very old age. | 2.39 | .81 | Neutral |
| 4 | People with Down syndrome can form and maintain friendships with normal people. | 2.89 | .74 | Neutral |
| 5 | The media shows people with Down syndrome as having limited abilities. | 2.21 | 0.86 | Neutral |
| 6 | People with Down syndrome have behavioral problems that prevent them from living normally and independently. | 2.18 | 0.79 | Neutral |
| 7 | People with Down syndrome need continuous follow-up and supervision. | 1.51 | 0.76 | Negative |
| 8 | Down syndrome is very common. | 2.32 | .87 | Neutral |
| 9 | People with Down syndrome surprise people with their abilities. | 3.04 | .74 | Positive |
| 10 | People with Down syndrome have multiple talents. | 2.93 | .78 | Neutral |
| Total | | 2.31 | .31 | Neutral |
| Second dimension: inclusion | | | | |
| 11 | People with Down syndrome can learn in regular schools. | 2.33 | .97 | Neutral |
| 12 | The normal school environment is suitable for teaching students with Down syndrome. | 1.92 | .90 | Negative |
| 13 | Regular curricula are suitable for students with Down syndrome. | 1.88 | .98 | Negative |
| 14 | Students with Down syndrome are bullied in regular schools. | 1.82 | .77 | Negative |
| 15 | Ordinary students accept the presence of a student with Down syndrome among them. | 2.17 | .74 | Neutral |
| 16 | The teachers accept the presence of a student with Down syndrome with them. | 2.30 | .71 | Neutral |
| 17 | People with Down syndrome face problems in academic achievement. | 2.1 | .80 | Neutral |
| 18 | It is preferable to teach people with Down syndrome in their own centers. | 1.63 | .88 | Negative |
| 19 | People with Down syndrome can access university education. | 2.58 | .94 | Neutral |
| 20 | Children with Down syndrome, when they are included in regular school, raise the fear of ordinary children and their families. | 2.19 | .87 | Neutral |
| 21 | It is preferable to include students with Down syndrome at an older age and not at kindergarten age. | 2.13 | .99 | Neutral |
| Total | | 2.1 | .40 | Neutral |
| Third dimension: health problems | | | | |
| 22 | All people with Down syndrome have health problems. | 2.2 | .80 | Neutral |
| 23 | People with Down syndrome need continuous health care. | 1.64 | .81 | Negative |
| 24 | People with Down syndrome face health problems that prevent them from participating in various life activities. | 2.24 | .77 | Neutral |
| 25 | People with Down syndrome need great treatment and medical care. | 2.1 | .87 | Neutral |
| 26 | People with Down syndrome need supportive services (physiotherapy, occupational therapy, speech training) more than others. | 1.91 | .94 | Negative |
| Total | | 2 | .60 | Neutral |
| Fourth dimension: self-determination | | | | |
| 27 | People with Down syndrome can make important decisions in their lives with help. | 2.1 | .89 | Neutral |
| 28 | People with Down syndrome can defend their rights. | 2.18 | .94 | Neutral |
| 29 | People with Down syndrome do not need anyone to decide for them. | 2.1 | .98 | Neutral |
| 30 | People with Down syndrome can make their own decisions independently. | 2.1 | .95 | Neutral |
| 31 | People with Down syndrome can live independently from their families. | 1.89 | .94 | Negative |
| Total | | 2.1 | .58 | Neutral |
| Fifth dimension: social life | | | | |
| 32 | People with Down syndrome show behaviors that are socially unacceptable and embarrassing to their families. | 2.42 | .72 | Neutral |
| 33 | People with Down syndrome can form and maintain friendships with people. | 2.83 | 0.77 | Neutral |
| 34 | People with Down syndrome can communicate with other people easily. | 2.44 | .71 | Neutral |
| 35 | People with Down syndrome are cheerful and socially likable. | 2.24 | .81 | Neutral |
| 36 | People with Down syndrome can join sports clubs and participate in competitive games. | 2.96 | .83 | Neutral |
| 37 | People with Down syndrome can use social networking sites independently and effectively. | 2.53 | .90 | Neutral |
| Total | | 2.73 | .46 | Neutral |
| Sixth dimension: employment | | | | |
| 38 | People with Down syndrome can work in different professions. | 2.6 | .87 | Neutral |
| 39 | People with Down syndrome can assume different work responsibilities. | 2.35 | .85 | Neutral |
| 40 | It is preferable for people with Down syndrome to work in their own places. | 2.1 | .93 | Neutral |
| 41 | The productivity of people with Down syndrome is less than that of normal people. | 2.33 | .96 | Neutral |

| First dimension: general information | | | | |
|--------------------------------------|--|------|--------------------|---------------------|
| # | Item | Mean | Standard deviation | Stereotypical image |
| 42 | People with Down syndrome are exposed to ridicule and ridicule in the workplace. | 2.33 | 0.67 | Neutral |
| 43 | People with Down syndrome can advance in the professions in which they work. | 2.9 | .87 | Neutral |
| 44 | People with Down syndrome can create and succeed in their own projects. | 2.8 | .87 | Neutral |
| Total | | 2.5 | .48 | Neutral |
| Seventh dimension: marriage | | | | |
| 45 | People with Down syndrome can marry. | 2.74 | 1 | Neutral |
| 46 | People with Down syndrome can assume various responsibilities of marriage. | 2.41 | .88 | Neutral |
| 47 | People with Down syndrome can have healthy children. | 2.31 | .99 | Neutral |
| 48 | Males with Down syndrome can have children. | 2.58 | 1 | Neutral |
| 49 | A person with Down syndrome can establish a family | 2.50 | .86 | Neutral |
| 50 | Females with Down syndrome can have children. | 2.59 | .93 | Neutral |
| 51 | The marriage of people with Down syndrome can be successful. | 2.46 | .82 | Neutral |
| 52 | Married persons with Down syndrome need supervision and follow-up. | 2.2 | .95 | Neutral |
| 53 | People with Down syndrome can work and support their families independently. | 2.6 | .88 | Neutral |
| Total | | 2.5 | .67 | Neutral |
| Total (i1 to i53) | | 2.31 | 0.30 | Neutral |

Table 3 reveals that female special education students attending Mu'tah University harbor a neutral stereotypical image of people with Down syndrome on all dimensions and the scale in general. Their stereotypical perspective is neither negative nor positive. This neutral score indicates an insufficient knowledge of Down syndrome. Thus, awareness of this genetic disorder and its most important characteristics should be increased, especially on the international Down syndrome day designated by the United Nations. As confirmed by numerous scholarly reports, misconceptions and myths are formed and disseminated because of limited knowledge of Down syndrome (Alhaddad et al., 2018; ALTarawneh & Etawi, 2022; Cohen, 2020; The Global Down Syndrome Foundation, 2023; Mohaidat & AlKatatbeh, 2021; National Down Syndrome Society, 2023; New South Wales, 2023; Pace et al., 2010; Santoro & Steffensen, 2021; Schools, 2019; Urbano & Hadapp, 2007). Overall, this finding of inadequate awareness in special education students aligns with the assumption that better treatment of the condition owing to medical advancements and increasingly inclusive social practices relating to people with Down syndrome have also functioned to perpetuate the paucity of knowledge and misunderstandings regarding Down syndrome. Despite the myth that scientists know everything about Down syndrome (Cohen, 2020), it is difficult to obtain accurate and updated information on people with Down syndrome because of the continued paucity of medical and scientific research (The Global Down Syndrome Foundation, 2023).

The means and standard deviations of the scores marked on the study instrument were calculated to answer the second question. Table 4 displays this information.

Table 4. Means and standard deviations of scores marked on the Down Syndrome Stereotypical Image Scale

| Variable | Variable level | Means and standard deviations (Std. Deviation) | General information | Inclusion | Health problems | Self-determination | Social life | Employment | Marriage | Total |
|---|----------------|--|---------------------|-----------|-----------------|--------------------|-------------|------------|----------|-------|
| Academic year | First-Second | N | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 |
| | | Mean | 2.3 | 2.1 | 1.9 | 2.2 | 2.8 | 2.5 | 2.4 | 2.3 |
| | | Std. Deviation | 0.3 | 0.4 | 0.6 | 0.6 | 0.5 | 0.5 | 0.7 | 0.3 |
| | Third-Fourth | N | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 |
| | | Mean | 2.3 | 2.1 | 2.2 | 1.9 | 2.6 | 2.4 | 2.6 | 2.3 |
| | | Std. Deviation | 0.3 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.3 |
| Attending a course on intellectual disability | Yes | N | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 |
| | | Mean | 2.3 | 2 | 2.1 | 2 | 2.6 | 2.5 | 2.5 | 2.3 |
| | | Std. Deviation | 0.3 | 0.4 | 0.6 | 0.6 | 0.6 | 0.4 | 0.6 | 0.3 |
| | No | N | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 |
| | | Mean | 2.3 | 2.2 | 1.9 | 2.1 | 2.8 | 2.5 | 2.5 | 2.3 |
| | | Std. Deviation | 0.3 | 0.4 | 0.6 | 0.6 | 0.5 | 0.5 | 0.8 | 0.3 |

| Variable | Variable level | Means and standard deviations (Std. Deviation) | General information | Inclusion | Health problems | Self-determination | Social life | Employment | Marriage | Total | |
|---|----------------|--|---------------------|-----------|-----------------|--------------------|-------------|------------|----------|-------|----|
| Previous experience of dealing with people with Down syndrome | Yes | N | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | |
| | | Mean | 2.3 | 2.1 | 2 | 1.9 | 2.7 | 2.4 | 2.8 | 2.3 | |
| | | Std. Deviation | 0.3 | 0.4 | 0.6 | 0.6 | 0.5 | 0.5 | 0.7 | 0.3 | |
| | No | N | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 |
| | | Mean | 2.3 | 2.1 | 1.9 | 2.1 | 2.8 | 2.5 | 2.4 | 2.3 | |
| | | Std. Deviation | 0.3 | 0.4 | 0.6 | 0.6 | 0.4 | 0.5 | 0.7 | 0.3 | |

Table 4 reveals apparent differences in the arithmetic means. The researchers conducted a multiple analysis of variance (MANOVA) to determine whether the differences were statistically significant. Table 5 presents the MANOVA results.

Table 5. MANOVA Test Results

| Source | Dependent Variable | Df | Mean Square | F | Sig |
|---|---------------------|-----|-------------|-------|--------|
| Academic year Hotelling's Trace (0.002*) | General Information | 1 | 636.6 | 0.04 | 0.85 |
| | Inclusion | 1 | 563.8 | 0.61 | 0.44 |
| | Health Problems | 1 | 485.3 | 7.7 | 0.007* |
| | Self-Determination | 1 | 501.1 | 2.7 | 0.1 |
| | Social Life | 1 | 891 | 1.8 | 0.2 |
| | Employment | 1 | 729.5 | 0.9 | 0.35 |
| | Marriage | 1 | 738.4 | 2.8 | 0.1 |
| | Total | 1 | 638.2 | 0.43 | 0.5 |
| Attending a course on intellectual disability Hotelling's Trace (0.143) | General Information | 1 | 0.1 | 0.9 | 0.33 |
| | Inclusion | 1 | 0.6 | 3.6 | 0.1 |
| | Health Problems | 1 | 0.2 | 0.5 | 0.5 |
| | Self-Determination | 1 | 0.1 | 0.2 | 0.7 |
| | Social Life | 1 | 0.2 | 0.9 | 0.3 |
| | Employment | 1 | 0.1 | 0.4 | 0.5 |
| | Marriage | 1 | 0.4 | 0.9 | 0.4 |
| | Total | 1 | 0.1 | 1.3 | 0.3 |
| Previous experience of dealing with people with Down syndrome Hotelling's Trace (0.351) | General Information | 1 | 0.002 | 0.02 | 0.9 |
| | Inclusion | 1 | 0.1 | 0.5 | 0.5 |
| | Health Problems | 1 | 0.0 | 0.001 | 0.9 |
| | Self-Determination | 1 | 0.2 | 0.73 | 0.4 |
| | Social Life | 1 | 0.005 | 0.03 | 0.9 |
| | Employment | 1 | 0.24 | 1 | 0.31 |
| | Marriage | 1 | 0.7 | 1.5 | 0.23 |
| | Total | 1 | 0.007 | 0.1 | 0.8 |
| Error | General Information | 116 | 0.1 | | |
| | Inclusion | 116 | 0.2 | | |
| | Health Problems | 116 | 0.34 | | |
| | Self-Determination | 116 | 0.33 | | |
| | Social Life | 116 | 0.21 | | |
| | Employment | 116 | 0.23 | | |
| | Marriage | 116 | 0.44 | | |
| | Total | 116 | 0.1 | | |

Table 5 discloses the absence of statistically significant differences in the stereotyping of people with Down syndrome because of the academic year, attending a course on intellectual disability, and previous experiences of dealing with people with Down syndrome. However, significant differences due to the academic year were found in favor of third- and fourth-year students regarding health problems, probably because female special education students positioned in these years have imbibed more information and have dealt with people with Down syndrome during their field training. The absence of significant differences because of attending a course on intellectual disability can be explained by the fact that this course does not focus on people with Down syndrome.

5. Conclusions

The study sample of female special education students attending Mu'tah University harbored a neutral stereotypical image of people with Down syndrome, implying that the respondents had insufficient knowledge of the capabilities and characteristics of people living with this genetic condition. This finding indicates the need to increase the general awareness of Down syndrome and encourage scientific research because people with Down syndrome now exhibit improved capabilities due to medical advances and better treatment options (The Global Down Syndrome Foundation, 2023).

The myths and misconceptions harbored by female special education students were investigated in this study to discover the fallacies of pre-service teachers. This knowledge can contribute to the improvement of public attitudes toward people with Down syndrome.

The researchers observed that most extant studies on people with Down syndrome comprise medical research attending to poor abilities, diagnoses, health problems, and weaknesses. Therefore, increased scholarly attention is mandated in the educational and psychological research domains to ascertain the capabilities of people with Down syndrome and focus on their strengths from an educational perspective to understand their education and employment potential.

People with Down syndrome need training, education, rehabilitation, and care to lead normal lives, actualize their rights, and function as productive members of society.

6. Recommendations

- 1- Increasing the public awareness of Down syndrome and the actual capabilities of those living with this condition
- 2- Studying societal attitudes toward people with Down syndrome and trying to modify negative positions
- 3- Conducting additional studies that can help educate university students and community members regarding people with Down syndrome
- 4- Conducting studies on the self-determination skills of people with Down syndrome
- 5- Using appropriate tests and scales to investigate the mental abilities of people with Down syndrome
- 6- Encouraging awareness of Down syndrome through various media, specifically on the international day designated by the United Nations to mark this genetic condition
- 7- Studying Jordanian stereotypes of people with Down syndrome
- 8- Encouraging scientific research related to Down syndrome to better understand the capabilities and characteristics of people living with this condition

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