

Bullying And Its Effect On School Achievement Among Hearing Impaired Adolescents: A Comparative Study

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Abstract

Background: School bullying becomes a significant problem facing school –aged children world- wide and adolescents with visible cues of disability who educated in mainstream schools may be of greater risk. **Aim of the study:** was to assess effect of bullying on school achievement among adolescents with hearing impairment. **Subjects and Methods: Research design:** A case control design was conducted in that study. **Setting:** The study was conducted at audiometry unit and ENT outpatient clinic at zagazig university hospital and four preparatory and secondary schools at Fakous city. **Subjects:** a matching sample of 50 hearing impaired adolescents with hearing aids or cochlear implant and 50 control, aged 12-18 years. **Tools of data collection:** Three tools were used for data collection. Tool (I): A structured interview questionnaire. Tool(II) Retrospective Bullying Questionnaire (RBQ).)Tool(III): Student performance assessment form. **Results:** The study revealed a significant negative correlation between bullying victimization and school achievement in hearing impaired adolescents ($r = -0.445$) and control group($r = -0.517$)and($p < 0.001$) **Conclusion:** Hearing impaired adolescents were more vulnerable to bullying victimization than control group. Bullying at schools is a major problem that affect school achievement negatively. **Recommendations:** Educational programs are required to raise awareness of children, parents and the whole community members about the phenomena of bullying, its causes, consequences and prevention.

Keywords: Bullying, Hearing impairment, School Achievement, Adolescents.

Introduction:

Nowadays, School violence and bullying become major social problems within school environments that form a stumbling block for children and adolescents from getting their basic right to education in safe learning environments. (Menesini and Salmivalli, 2017).

It is estimated that one in three adolescent experiences bullying victimization by peers at school (Koyanagi et al., 2019). Bullying behavior is a major public health problem that requires coordination and attention of parents, educators and school administrators, health care providers, families and other who concerned with children care because of the negative biological and psychological consequences of bullying on children and adolescents health(National Academies of Science, Engineering, and Medicine ,2016). Hearing loss in children is a global challenge and considered the second most prevalent developmental disability which affects approximately 15.5 million children under the age of five years worldwide (Olusanya et al. ,2018). Hearing impairment is defined as any impairment in the ability to hear sounds at thresholds that considered normal, a pure tone threshold average of more than 15 decibels at 500, 1000, 2000, and 4000 hertz is considered outside the normative range in children. Hearing impairment ranges from hard of hearing to total deafness. Hard of hearing includes some degrees of hearing loss that ranges from mild to moderate to moderately severe in person who often benefits from hearing aids. Deafness is often used as an alternative term to profound hearing loss in which a person cannot hear typical conversations without hearing amplification (Lieu et al., 2020).

Half of students worldwide aged 13 to 15 constituted about 150 million report experienced bullying or a physical fight, that not only affects their learning negatively but has a significant impact on their health and well-being.(**UNICEF,2019**). About 32% of students in around 144 countries have ever been bullied by their peers at school (**UNESCO, 2019**) Adolescents with hearing impairment feel that they are less socially accepted and have some problems in their emotion regulation and communication so these factors make them more prone to bullying victimization. (**Broekhof et al., 2018**).Also, they are perceived as less powerful or visibly different from their peers so there are an increasing risk to be victimized or bullied. (**Aboalola,2022**).

Bullying in schools may negatively lead to lower academic self-perceptions , lower school engagement and lower academic achievement(**Hellfeldt et al., 2018**). **Cythia (2014)** assumed that impact of bullying on student's performance may occur in short or long term ,also she found that there are differences in relationship between bullying level and academic performance depending on student's academic achievement. School nurses can help victims to understand and discover feelings about bullying and recognize if they are able to do something to deal with and find ways that increase their own personal power. They also ensure an educational plan for students with physical or learning disabilities including emotional support, establish trusting relationships and create a safe and welcoming environment at school (**Zinan ,2017**).

Aim of the study: was to assess bullying and its effect on school achievement among adolescents with hearing impairment.

Research questions:

- Are hearing impaired adolescents more prone to bullying?
- What is the effect of bullying on school achievement for hearing impaired adolescents?

Research design: Case- control research design was conducted to achieve the aim of the study.

Setting: The study was conducted at:

- Audiometry unit and ENT outpatient clinic at Zagazig University Hospital.
- Four schools that were randomly selected from Fakous city. These schools were El-Azazy mixed preparatory school , El-Azazy mixed secondary school, El-Shahid Gamal Hafiz El-Jinde preparatory school and El-Shahid Ibrahim Safa secondary school.

Subjects: The study was conducted on a matching sample of 50 adolescents with hearing impairment used hearing aids or cochlear implant and abled to communicate orally and 50 control of normal hearing children .

Tools of data collection:

Tool I: A structured interview questionnaire was developed by the researcher after reviewing pertinent scientific literature and articles in periodicals to collect the required data. It composed of **two main parts**:

Part 1: Demographic data of the studied

This part of the questionnaire is concerned with socio- demographic data and composed of 8 closed-ended questions about child's age, gender, residence, family type, number of siblings, birth order, educational grade and type of school.

Part II: Data about medical history of Hearing impaired adolescents

This part of questionnaire is concerned with medical history of the disability and composed of 5 closed-ended questions about onset of diagnosis of hearing impairment, causes, type of hearing loss, degree of hearing loss and assistive listening devices.

Tool II: Retrospective Bullying Questionnaire (RBQ):

This scale was adopted from Schäfer et al 2004 and utilized to identify victims and non-victims of bullying

including three types physical, verbal and social bullying that began with definition of bullying.

The participants were classified from their responses regarding types of bullying victimization as **not exposed** to bullying victimization, exposed to **physical** bullying only , exposed to **verbal** bullying only , exposed to **indirect** bullying only and **combined** exposed to more than one of the three types of bullying together .

This questionnaire was translated into Arabic by the researcher , validated and reliability test was done (Cronbach's Alpha was 0.76 with acceptable consistency).

Tool III: Student performance assessment form)

This Scale was developed by **Bartosh(2003)**. The Arabic version of this scale was translated by **Abdelrhman (2018)** who used it to assess school achievement and was utilized in this study. The scale consisted of 5 domains including learning motivation, learning characteristics , behavioral performance in class , creativity and concentration ability. Each domain has some items. The responses were on a six point scale no comment , never, seldom, sometimes, often and always.

Scoring system

(The scale consists of 42 items the score of each item range from 0 to 5)

It consists of five domains:

1-Learning Motivation :(4 items) scored from 0 to 20

2- Learning Characteristics:(4 items) scored from 0 to 20

3- Behavioral Performance :(6 items) scored from 0 to 30

4- Creativity :(5 items) scored from 0 to 25

5- Concentration Ability:(23 items) scored from 0 to 115 (There are 10 items scored from 0 to 5 (**A, B, C, D, E, F, G, H, O and V**) and 13 items with reversed score from (5 to 0) (**I, J, K, L, M, N, P, Q, R, S, T, U, W**)

The total score is from 0 to 210 which divided into **low achievement**($<50.0\% = <105$), **Moderate achievement** (50.0 to less than 75.0% =105 to less than 157.5) and **high achievement** ($\geq 75.0 \Rightarrow 157.5$).

Administrative and ethical consideration:

An official permission was obtained by submission of formal letters derived from the dean of Faculty of Nursing, Zagazig University to:

- The responsible authorities of Audiometry unit and ENT outpatient clinic at zagazig university hospitals to attain their permission for data collection.
- The Sharkia Education Directorate at Zagazig city which referred the researcher to the director of the Educational Administration at Fakous city who directed the researcher to the selected schools with approval letters.

Pilot study:

The pilot study was carried on 10 % children (5 hearing impaired and 5 control). To assess applicability, feasibility and practicality of the tools. The children involved in the pilot study were excluded from the study sample

Field work:

The fieldwork for the current study was done through the following steps:

The aim of the study was explained and oral consent was obtained from hearing impaired adolescents and their parents who accepted to participate in the study after that the researcher interviewed hearing impaired adolescents to collect the necessary data. It took about 25-40 minutes of each child for data collection.

The researcher attended the Audiometry unit and ENT outpatient clinic at Zagazig University Hospital for 3 days/week (Saturday, Monday and Wednesday) for data collection from 10 A.M to 1:30 P.M. The data was collected from hearing impaired adolescents (cases) during 3 months and half , starting from July 2022 to Mid- October 2022. After collecting the data from the cases, the researcher went to the selected schools and explained to their directors the study aim and the tools used for data collection, gave them a copy from the tool and approved letters from Fakous Educational Administration.

The researcher selected the number of students (control) from each school with matchmaking of the studied hearing impaired adolescents (cases) regarding the same age, gender, residence and educational grade. Then the researcher explained to the selected students the aim of the study and the nature of the tools after taking oral consents from them. After that the researcher interviewed the control adolescents individually for 4 days/week (Sunday, Monday and Tuesday, Wednesday) from 9.30A.M to 12 P.M. The process of data collection for each child took about 20-30 minutes. It took one month to complete data collection from selected students starting from mid-October 2022 to the mid- November2022.

Content validity& Reliability:

Content validity for the tools was established by three experts (one professor of community health nursing, one assistant professor of psychiatric health nursing and one professor of psychiatric medicine). The recommended modifications were done and the final form was ready for use.

Statistical analysis:

All data were collected, tabulated and statistically analyzed using SPSS 20.0 for windows (SPSS Inc., Chicago, IL, USA 2011). Quantitative data were expressed as the mean \pm SD and qualitative data were expressed as absolute frequencies (number) and relative frequencies (percentage). Chi-square test (X²) or Fisher's exact test (FET) was used to assess percent of categorical variables were compared using Chi-square test or Fisher's exact test when appropriate. Spearman correlation coefficient (r) was calculated to: assess relationship between study variables, (+) sign indicate direct correlation & (-) sign indicate inverse correlation, also values near to 1 indicate strong correlation & values near 0 indicate weak correlation.

Results:

Table 1: shows characteristics of the studied adolescents. Regarding the age, **62%** of both hearing impaired and control groups were 12 to 14 years with a mean age of **14.24 \pm 2.16**. Also, **60%** of both groups were males. In addition to, **52%** of both groups were from rural areas.

The same table presents that **96%** of hearing impaired adolescents live with both parents compared to **90%** in the control group. Also, **34%** and **36%** of hearing impaired and control groups respectively were the first birth order in the family. Regarding the educational grade, **70%** of both groups were in preparatory grade

Table 2: Medical history of hearing impaired adolescents is represented in table (2). It was found that **54%** of hearing impaired adolescents were diagnosed with hearing impairment since birth. Regarding the causes of hearing impairment, **50%** were related to congenital causes followed by frequent otitis media that constituted **26%** from the acquired causes.

The same table reveals that **64%** of hearing impaired adolescents had Sensorineural hearing loss and **32%** had conductive type. As regards the degree of hearing loss, **42%** had profound degree and **34%** had sever degree).

Table 3: shows frequency and percentage distribution of studied adolescents regarding types of bullying victimization experience. It was found that hearing impaired adolescents were more prone to bullying victimization than control group as **48%** of control group reported not exposed to any type of bullying at their schools compared to **20%** of hearing impaired adolescents.

As regards the types of bullying, **40%** of hearing impaired adolescents exposed to combined types compared to **28%** of control group. In addition to, **28%** and **10%** of hearing impaired and control groups respectively exposed to indirect (social) bullying only. The results were statistically significant (P=0.018).

Table 4: illustrates mean scores of total school achievement and its domains of the studied adolescents. It was shown that there was a statistically highly significant difference between control and hearing impaired groups concerning to school achievement with a mean score of 140.00 \pm 23.4 and 117.22 \pm 22.67 of both groups respectively (p= 0.001).

It was revealed that 70.38 ± 12.67 was a mean score of concentration ability domain of control group compared to 58.42 ± 14.69 of hearing impaired adolescents and the difference was statistically highly significant ($p = 0.001$)

Table 5: shows relation between bullying victimization experience and total score of achievement of the control group. A statistically significant relation between bullying victimization and achievement was revealed as **83.3 %** of control group with high school achievement were not exposed to bullying at school. But, **80%** with low achievement exposed to combined types of bullying and ($p = 0.021$).

Table 6: Relation between bullying victimization experience, total score of achievement of the hearing impaired adolescents is demonstrated in Table (6). It was found a statistically significant relation between bullying victimization and school achievement among hearing impaired adolescents as **100%** of adolescents with high achievement announced not exposed to bullying at school. In contrary with **76.9** of adolescents with low achievement exposed to combined types of bullying. ($p = 0.011$).

Table 7: Correlation coefficient between bullying victimization, total scores of achievement of the studied adolescents. The table indicated statistically highly significant negative correlation between bullying victimization and school achievement in hearing impaired adolescents ($r = -0.445$) and control group ($r = -0.517$) and ($p < 0.001$). This means that school achievement decreases with increasing exposure to bullying victimization.

Discussion:

The results of the present study revealed that more than half (54%) of our studied hearing impaired adolescents were diagnosed since birth. Also, over half of them (52%) used hearing aids and the rest (48%) used cochlear implant. Despite their disability that didn't hinder them from entering schools early like their normal peers as the majority of the studied adolescents (70%) were in preparatory schools. All students in both groups attended regular schools but hearing impaired adolescents joined regular school with integrated system. This could be supported by the fact that with early detection and diagnosis of hearing loss, early auditory intervention and rehabilitation either by hearing aids or cochlear implants provide hearing impaired adolescents great benefits for early language acquisition, improve communication skills and good educational outcomes. As regards the causes of hearing impairment, the current study showed that half (50%) of cases were related to congenital causes followed by frequent otitis media that constituted more than quarter (26%) of the acquired causes. On contrary **Abdel Hamid et al., (2007)** who performed a national household survey about prevalence and patterns of hearing impairment in **Egypt** found that the commonest cause of hearing impairment was otitis media with effusion constituted (30.7%) but genetic causes accounted (6.29%).

Regarding the type of hearing loss, the findings of the current study showed that less than two thirds 64% of hearing impaired adolescents had Sensorineural hearing loss and less than one third 32% had conductive type. These findings came in the same line with **Abdel-Rhman et al., (2007)** who conducted a study about Prevalence and risk factors for hearing disorders in secondary school students in Ismailia, Egypt, found that 70.0% of students had sensorineural hearing loss, 14.2% had bilateral conductive hearing loss. Concerning the degree of hearing loss, It was found that less than half of hearing impaired adolescents (42%) had a profound degree and more than one third (34%) had a severe degree. These results goes in the same line with **Hammad and Awed (2020) in Saudi Arabia** who carried out a study to investigate prevalence of cyberbullying and traditional bullying and their relationship to self esteem among hearing-impaired adolescents reported that over half 59.25% of hearing impaired adolescents had a profound degree of hearing impairment and more than one third (37.03%) had a severe degree. The current study revealed that hearing impaired adolescents were more prone to bullying victimization than control group as slightly less than half (48%) of control group not exposed to any type of bullying at their present schools compared to less than one quarter (20%) of hearing impaired adolescents and the difference was statistically significant ($P = 0.018$). This was also supported in a study conducted by **Dixon et al., (2004)** in one mainstream secondary school examined the various aspects of peer group dynamics including social aggression and exclusion towards students with hearing impairment found that risk of bullying increased in hearing impaired adolescents especially social exclusion and teasing as a result of their disability they were considered as second class citizens and being socially excluded and marginalized. On contrary **Bauman and Pero (2011)** who conducted an exploratory study about bullying and cyberbullying among deaf students and their hearing peers, found that there was no significant differences between deaf or hard of hearing and hearing students regarding experiences with bullying and cyberbullying and in need of further investigation.

Bullying at school may affect academic achievement as bullied children feel fear and weak. Also, it affects students' personality traits and self-confidence which makes bullied students unable to follow or to pay attention at classroom or do not like to go to school. (Al-Raqqad et al.,2017). The present study showed that there was a statistically highly significant difference between control and hearing impaired groups concerning to school achievement with a mean score of 140.00±23.4 and 117.22± 22.67 of both groups respectively (p= 0.001). These findings agreed with Choudhry et al.,(2021) who carried out a study to assess the academic performance of children with hearing impairment who received early intervention in Lahore, concluded that there was difference in academic achievement of hearing impaired students compared to hearing children in which lack of parental support, lack of educational support or ignorance of their special needs were among factors affecting their performance. The current study revealed a statistically highly significant negative correlation between bullying victimization and school achievement in hearing impaired adolescents (r= -0.445) and control group(r= -0.517)and (p=<0.001). This means that school achievement decreases with increasing exposure to bullying victimization. Kibriya et al. (2016) who analyzed the impact of bullying on academic achievement in a sample of 7323 8th grade students in Ghana , found that being the victim of bullying had a negative effect on students' academic achievement. Additionally, Haroon (2018) in Turkey who carried out a study to identify impact of bullying on academic performance of high school students, showed that there was a negative correlation between bullying and academic achievement among students (r= -.827)and (P =.000).

Conclusion:

It was concluded that hearing impaired adolescents were more prone to bullying than their hearing peers that negatively affect their school achievement.

Recommendations:

Based upon the findings of the current study , the following recommendations are suggested:

- 1-Implement anti- bullying campaigns at schools in order to reduce bullying among students and its negative outcomes especially on school achievement.
- 2- Further researches are needed to assess bullying among children with disabilities and its effects on their physical and psychological health.

Table (1): Characteristics of the studied adolescents (n=100).

| Child characteristics | Groups | | | |
|------------------------|----------------|------|-------------------------|------|
| | Control (n=50) | | Hearing impaired (n=50) | |
| | No | % | No | % |
| Age (years) | | | | |
| 12- | 31 | 62.0 | 31 | 62.0 |
| 14- | 8 | 16.0 | 8 | 16.0 |
| 16-18 | 11 | 22.0 | 11 | 22.0 |
| Mean ± SD | 14.24±2.16 | | 14.26±2.14 | |
| Gender | | | | |
| Male | 30 | 60.0 | 30 | 60.0 |
| Female | 20 | 40.0 | 20 | 40.0 |
| Residence | | | | |
| Rural | 26 | 52.0 | 26 | 52.0 |
| Urban | 24 | 48.0 | 24 | 48.0 |
| Family Type | | | | |
| Live with both parents | 45 | 90.0 | 48 | 96.0 |
| One parent | 5 | 10.0 | 2 | 4.0 |
| Others | 0 | 0.0 | 0 | 0.0 |

| Number of siblings | | | | |
|---------------------------------------|----|-------|----|-------|
| 1 | 3 | 6.0 | 6 | 12.0 |
| 2 | 17 | 34.0 | 19 | 38.0 |
| 3 | 17 | 34.0 | 13 | 26.0 |
| 4 or more | 13 | 26.0 | 12 | 24.0 |
| Birth order | | | | |
| The first | 18 | 36.0 | 17 | 34.0 |
| The second | 9 | 18.0 | 17 | 34.0 |
| The third | 12 | 24.0 | 11 | 22.0 |
| More | 11 | 22.0 | 5 | 10.0 |
| Educational grade | | | | |
| Preparatory | 35 | 70.0 | 35 | 70.0 |
| Secondary | 15 | 30.0 | 15 | 30.0 |
| Type of school | | | | |
| Regular school | 50 | 100.0 | 0 | 0.0 |
| Regular school with integrated system | 0 | 0.0 | 50 | 100.0 |
| Special school | 0 | 0.0 | 0 | 0.0 |

Table (2): Medical history of hearing impaired adolescents (n=50):

| Medical history | no | % |
|--|----|------|
| Onset Of diagnosis of hearing impairment | | |
| Since birth | 27 | 54.0 |
| less than 5 years | 5 | 10.0 |
| More than 5 years | 18 | 36.0 |
| Causes of hearing impairment | | |
| a. Congenital | 25 | 50.0 |
| b. Acquired | | |
| Frequent otitis media | 13 | 26.0 |
| Infections | 0 | 0.0 |
| Head injury | 1 | 2.0 |
| Ototoxic drugs | 0 | 0.0 |
| Neoplasm | 0 | 0.0 |
| Other | 11 | 22.0 |
| Type of hearing loss | | |
| Sensorineural hearing loss | 32 | 64.0 |
| Conductive hearing loss | 16 | 32.0 |
| Mixed hearing loss | 2 | 4.0 |
| Degree of hearing loss | | |
| Mild | 0 | 0.0 |
| Moderate | 12 | 24.0 |
| Severe | 17 | 34.0 |
| Profound | 21 | 42.0 |
| Assistive listening devices | | |
| Hearing Aid | 26 | 52.0 |
| Cochlear Implant | 24 | 48.0 |

Table (3): Frequency and percentage distribution of studied adolescents regarding types of bullying victimization experience (n=100).

| Bullying-victimization | Groups | | | | |
|---|----------------|------|-------------------------|------|-----------------------|
| | Control (n=50) | | Hearing impaired (n=50) | | |
| | No | % | No | % | |
| Types of bullying victimization experience | | | | | χ^2 (p-value) |
| Not exposed | 24 | 48.0 | 10 | 20.0 | 11.89 (0.018*) |
| Physical | 4 | 8.0 | 2 | 4.0 | |
| Verbal | 3 | 6.0 | 4 | 8.0 | |
| Indirect (social) | 5 | 10.0 | 14 | 28.0 | |
| combined | 14 | 28.0 | 20 | 40.0 | |

χ^2 : Chi square test, *: statistically significant (p<0.05).

Table (4): Mean scores of total school achievement and its domains of the studied adolescents (n=100).

| School achievement domains | Groups | | T | p-value |
|---------------------------------|-------------------|-------------------------|-------|---------|
| | Control (n=50) | Hearing impaired (n=50) | | |
| | Mean \pm SD | | | |
| Learning Motivation / Attitude | 14.76 \pm 3.08 | 13.34 \pm 2.54 | 2.516 | 0.013* |
| Learning Characteristics | 14.92 \pm 3.81 | 12.56 \pm 2.74 | 3.555 | 0.001** |
| Behavioral Performance in Class | 22.88 \pm 4.85 | 18.28 \pm 3.56 | 5.398 | 0.001** |
| Creativity | 17.06 \pm 3.98 | 14.62 \pm 2.77 | 3.551 | 0.001** |
| Concentration Ability | 70.38 \pm 12.67 | 58.42 \pm 14.69 | 4.358 | 0.001** |
| Total | 140.00 \pm 23.4 | 117.22 \pm 22.67 | 4.960 | 0.001** |

t: student t-test, *: statistically significant (p<0.05), **: statistically highly significant (p<0.001)

Table (5): Relation between bullying victimization experience and total score of achievement of the control group (n=50).

| Parameter | Achievement score of control group | | | | | | χ^2 (p-value) |
|-------------------------------|------------------------------------|------|-----------------|------|-------------|------|-----------------------|
| | Low (n=5) | | Moderate (n=33) | | High (n=12) | | |
| | no | % | no | % | no | % | |
| Bullying victimization | | | | | | | |
| Not exposed | 0 | 0.0 | 14 | 42.4 | 10 | 83.3 | 18.028 (0.021*) |
| Physical | 1 | 20.0 | 2 | 6.1 | 1 | 8.3 | |
| Verbal | 0 | 0.0 | 2 | 6.1 | 1 | 8.3 | |
| Indirect | 0 | 0.0 | 5 | 15.2 | 0 | 0.0 | |
| Combined | 4 | 80.0 | 10 | 30.3 | 0 | 0.0 | |

χ^2 : Chi square test, *: statistically significant (p<0.05), **: statistically highly significant (p<0.001)

Table (6): Relation between bullying victimization experience and total score of achievement of the hearing impaired adolescents (n=50).

| Parameter | Achievement score of hearing impaired group | | | | | | χ^2 (p-value) |
|-----------|---|---|-----------------|---|------------|---|-----------------------|
| | Low (n=13) | | Moderate (n=35) | | High (n=2) | | |
| | no | % | no | % | no | % | |

| Bullying victimization | | | | | | | |
|------------------------|----|------|----|------|---|-------|--------------------|
| Not exposed | 0 | 0.0 | 8 | 22.9 | 2 | 100.0 | 19.849 (0.011*) |
| Physical | 1 | 7.7 | 1 | 2.9 | 0 | 0.0 | |
| Verbal | 1 | 7.7 | 3 | 8.6 | 0 | 0.0 | |
| Indirect | 1 | 7.7 | 13 | 37.1 | 0 | 0.0 | |
| Combined | 10 | 76.9 | 10 | 28.6 | 0 | 0.0 | |

χ^2 : Chi square test, *: significant (p<0.05), **: statistically highly significant (p<0.001)

Table (7): Correlation Coefficient between bullying victimization, total score of achievement of the studied adolescents .

| Parameter | | Achievement score | | | |
|---------------------------|---------------------|-------------------|----------|------------------------|----------|
| | | Control group | | Hearing impaired group | |
| | | (r) | P | (r) | P |
| Bullying Victimization | Control | -0.517 | <0.001** | | |
| | Hearing impaired | | | -0.445 | <0.001** |

*: significant (p<0.05), **: statistically highly significant (p<0.001), r: correlation coefficient

References:

1-Menesini E and Salmivalli C. (2017). Bullying in schools: the state of knowledge and effective interventions. Psychology, health & medicine, 22(1), 240-253.

2-Koyanagi AI, Oh H, Carvalho AF, Smith L, Haro JM, Vancampfort D and devylder JE. (2019). Bullying victimization and suicide attempt among adolescents aged 12–15 years from 48 countries. Journal of the American Academy of Child Adolescent Psychiatry, 58(9), 907–918.

3-National Academies of Science, Engineering, and Medicine. (2016). Preventing bullying through science, policy, and practice. Washington, DC: The National Academies Press.

4-Olusanya BO, Davis AC, Wertlieb D, Boo NY, Nair MK, Halpern R, et al. (2018). Developmental disabilities among children younger than 5 years in 195 countries and territories, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016, Elsevier BV, The Lancet Global Health: 6 (10) [https://doi.org/10.1016/s2214-109x\(18\)30309-7](https://doi.org/10.1016/s2214-109x(18)30309-7). e1100–e1121.

5- Lieu JEC, Kenna M, Anne S and Davidson L. (2020) .Hearing Loss in Children: A Review. J Amer Med Assoc ,324(21):2195-2205.

6- United Nations Children's fund (UNICEF),(2019).Bring bullying to an end. Available at : <https://blogs.unicef.org/blog/bring-bullying-to-an-end> . Accessed on (12 October 2022 At 5 pm).

7-United Nations Educational Scientific and Cultural Organization (UNESCO). (2019). Behind the numbers: Ending school violence and bullying. Paris, France: UNESCO.

8- Broekhof, E., Marieke G., Camodeca ,M., and Rieffe, C. (2018):Longitudinal Associations Between Bullying and Emotions in Deaf and Hard of Hearing Adolescents. Journal of Deaf Studies and Deaf Education, 23(1):17–27.

9- Aboalola, N. A. (2022). Bullying Among Deaf/Hard Of Hearing: Parents' Perspectives. Journal of Positive School Psychology, 6(9), 584-587.

10- Hellfeldt K , Gill PE and Johansson B. (2018). Longitudinal Analysis of Links Between Bullying Victimization and Psychosomatic Maladjustment in Swedish Schoolchildren. Journal of School Violence, 17(1), 86–98. <https://doi.org/10.1080/15388220.2016.1222498>

11- Cynthia V. (2014). The Effects of Bullying on Academic Achievement. Desarro. soc. 74, 275-308.

12- Zinan N.(2017). School Nurses' Perspectives on Bullying. In Rosen LH, DeOrnellas K and Scott SR. eds. Bullying in School: Perspectives from School Staff, Students, and Parents, Springer Nature, Nature America Inc.113-126.

13- Abdel Hamid, O., Khatib, O. M. N., Aly, A., Morad, M., & Kamel, S. (2007). Prevalence and patterns of hearing impairment in Egypt: a national household survey. EMHJ-Eastern Mediterranean Health Journal, 13 (5), 1170-1180, 2007.

- 14- **Abdel-Rhman AG , Meky FAS , Allam MF , El-Tabakh M and El-Gaffary MM. (2007).** Prevalence and risk factors for hearing disorders in secondary school students in Ismailia ,Egypt. *Eastern Mediterranean Health Journal* ,13(3).586-594
- 15- **Hammad MA and Awed HS. (2020).** prevalence of cyberbullying and traditional bullying and their relationship to self-esteem among hearing-impaired adolescents. *Humanities & Social Sciences Reviews*,8,(2),167-178.
- 16- **Dixon, R., Smith, P., and Jenks, C. (2004).** Bullying and difference: a case study of peer group dynamics in one school. *Journal of School Violence*, 3(4), 41-58.
- 17-**Bauman, S., and Pero, H. (2011).** Bullying and cyberbullying among deaf students and their hearing peers: An exploratory study. *Journal of deaf studies and deaf education*, 16(2), 236-253.
- 18- **Al-Raqad, H. K., Al-Bourini, E. S., Al Talahin, F. M., & Aranki, R. M. E. (2017).** The Impact of School Bullying on Students' Academic Achievement from Teachers Point of View. *International Education Studies*, 10(6), 44-50.
- 19- **Choudhry FA., Noor HS., Shahid, R., Mukhtar, T., Zahra, SM., and Butt, GA. (2021).** Academic Performance of Hearing Impaired Children Who Received Early Intervention. *Journal of Pharmaceutical Research International*, 33(57A): 227-234.
- 20- **Kibriya, S., Xu, Z. P., & Zhang, Y. (2016).** The negative consequences of school bullying on academic performance and mitigation through female teacher participation: Evidence from Ghana. *Applied Economics*, 49(25), 2480–2490. [https://doi.org/ 10.1080/00036846.2016.1240350](https://doi.org/10.1080/00036846.2016.1240350)
- 21- **Haroon T.(2018).** Impact of bullying on academic performance of high school students, *International Journal of Multidisciplinary Educational Research*, 7(4). https://www.academia.edu/36585991/Impact_of_bullying_on_academic_performance_of_high_school_students.
- 22- **Schäfer M, Korn S, Smith PK, Hunter SC, Mora-Merchán JA, Singer MM, et al. (2004).** Lonely in the crowd: Recollections of bullying. *British Journal of Developmental Psychology*. 22, 379–394.
- 23- **Bartosh O .(2003).**Environmental Education improving Student achievement, Master Thesis of Environmental Studies, The Evergreen State College.
- 24- **Abdelrhman HS.(2018).** Parasitic Infestation and Its Effect on Growth and School Achievement Among Primary School Children in Hehia Center, Master Thesis, Faculty of Nursing , Zagazig University. Page: 70-72.