

The self-esteem and anxiety of children with and without mentally retarded siblings

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Background: The study was carried out with the aim of determining the factors affecting and to evaluate anxiety situations and self-esteem of children with and without mentally retarded siblings. **Materials and Methods:** The sampling included 227 healthy children: 108 of them have mental retarded sibling and 119 of them do not have mental retarded sibling. The context of this study consisted of 15-18 year of age healthy children with mentally retarded siblings and 15-18 year of aged healthy children having at least one sibling between the dates February 15st and June 26st 2010. Personal Information Form, Rosenberg Self-Esteem Scale and Trait Anxiety Scale were used. **Results:** It was found out that trait anxiety of 17-18 aged of children with mental retarded sibling (47.04 ± 7.3) was higher than that of the children without mental retarded siblings (44.05 ± 11.23) ($P < 0.05$). It was observed that self-esteem of children with mentally retarded sibling was not affected from the handicap of their siblings ($P > 0.05$). Trait anxiety score averages of children with mentally retarded sibling and experience some difficulties due to his or her siblings's handicap (47.00 ± 7.76) were found higher than those of those of the children without any problem with the environment (42.61 ± 7.48) ($P < 0.05$). **Conclusion:** Although the average score of trait anxiety and self-esteem in both groups were not significant different, score of trait anxiety for children with mentally disabled siblings was higher in comparison. It was concluded that anxiety of children with and without mentally retarded siblings increased as self-esteem of these children decreased.

Key words: Mental retardation, self-esteem, sibling, trait anxiety

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INTRODUCTION

Mental retardation is a constant state of regression and inadequacy in effective adaptive behaviours that arises as a result of ongoing senescence, discontinuation and regression in development and functionality due to various reasons before birth, during birth and after birth. [1] According to the World Health Organisation, 10% of the population in developing countries and 12% of the population in developing countries is disabled. [2]

According to the results of the 2002 Turkish Disabled Research there are 1.772.315 disabled people, which is 12.29% of the overall population. Among the disabled group, 18.6% (331.215 persons) are mentally disabled and rank number two on the list. [3]

Children create self-concept based on the knowledge obtained from their parents, siblings and friends. Appreciation and adoption of self-concept bring about self-esteem. The symptoms of anxiety in children are unhappiness, feeling empty, easy and frequent crying, not doing their likes, anhedonia, feeling worthless and guilty, hopelessness, being nervous and distressed,

short temper, appetite disorders, sleep disorders, sensitiveness, distractibility, poor school performance, breakdown in family relations, increasing friendship problems and feeling rejected and alone.

The child with low self-esteem will have difficulty in not only the academic field but also all areas of social skills. In addition, similarly, the child with a high level of anxiety will face failures in the social life.

Having a disabled child in the family may adversely affect the quality of sibling relations, as well as the social development of the other child. [4] Social psychologists argue that those in close relations, such as siblings and friends, are influenced by each other. [5,6]

Growing up with a disabled sibling affects the daily life of the healthy sibling in many ways and causes them to experience psychological adaptation and development difficulties. [7] As cited by Apalaçi, [8] Howlin states "one of the most important factors that affect the sibling's psychological and behavioural adaptation is the level to which the disability is distinctive." Dyson *et al.* [9] indicated that the disability of the child has various

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effects on other siblings; deprivation of parental interest, increase in sibling care responsibilities and exposure to pressure caused by the disabled sibling's limitations, being labelled by society, deprivation of normal sibling interaction and role changes within the family.

Meyer and Vadasy^[10] categorized the concern of children with disabled siblings under eight headings; feeling guilty because of their sibling's disorder, feeling embarrassed and avoiding contact with their sibling because of their behavior or the way they look, feeling frightened because they might get the same illness as their sibling, feeling jealous or angry because they are paid less attention, isolating themselves because they think nobody understands what they are going through, feeling pressurised to achieve more in order to compensate for what their sibling cannot achieve, feeling that they are obligated to look after their sibling even if it coincides with other responsibilities and plans they have made with their friends and feeling the need to learn more about their sibling's disorder.

Orsmond and Seltzer^[11] expressed that, in general, disabled children tend not to think much about their siblings through life. According to Atasoy^[12] determining the needs of children with disabled siblings in terms of influence and development is extremely important in self development, family interaction and developing a support system.

It is necessary to determine the difference between those with and without disabled siblings and define the issues in order to inform healthy children about their disabled siblings, share their emotions and relieve their psychological pressure. In conclusion, defining problems may help the futures of families, with both disabled and healthy children and help them adapt to society.

Literature review has various studies that touch upon the subject of sibling relations (between the healthy and the disabled) and parental anxiety;^[13-17] however, there are not so many studies available that comparatively investigate the various variables that affect the anxiety and self-esteem of children with and without disabled siblings.^[18-20]

The purpose of this study is to investigate the self-esteem and anxiety state of children with and without disabled siblings and determine the effective factors.

MATERIALS AND METHODS

Sample

This study is a cross-sectional study. The population of the study comprises of healthy children aged between 15 and 18 that have mentally disabled siblings, registered with Private Education and Rehabilitation Centers of the Directorate of

National Education and healthy children aged between 15 and 18, attending Directorate of National Education High Schools, having at least one sibling and with no disabled siblings. The sample group comprised of at 15-18 age of siblings of children that were diagnosed with a mental disability at least 6 months ago, registered with Private Education and Rehabilitation Centers of the Directorate of National Education in central Erzurum (City in the east of Turkey) willing to participate in this study, were literate and available (118). In the event that mentally disabled children had more than one literate healthy sibling, the sibling with the smallest birth year, within the given age range was chosen to participate in this study. 108 children were included in the group as seven children with mentally disabled siblings did not attend the interview and three children left the interview half-way through. (1) The sibling of children diagnosed with mental retarded 6 months ago. (2) Those who are smaller or older than 15 and 18 years of age. (3) Those who are diagnosed with psychiatric. (4) Those who aren't communicated with. (5) Those who are illiterate are excluded from the study content.

A multistage sampling method was used for children without disabled siblings; By clustered sampling method^[21] two high schools were drawn among 36 Directorate of National Education High Schools in central Erzurum and one class was chosen from every year (year 9, year 10, year 11 and year 12). A total of 119 individuals were chosen from these classes using a simple random sampling method. The total number of individuals participating in the study was 227. Children in the control group weren't matched with the case group.

Data collection

A Personal Information Questionnaire, the Rosenberg Self-Esteem Scale and the Trait Anxiety Scale were used to gather data for the study. The Personal Information Questionnaire, prepared by the researcher in accordance with information in literature,^[1,4,7,12,13] comprised of two sections; the first section comprised of common questions based on the sociodemographic characteristics of children with and without mental disabled siblings; the second section comprised of questions that asked those with disabled siblings about their siblings.

Rosenberg self-esteem scale

Rosenberg developed the Rosenberg Self-Esteem Scale in 1965 as an instrument to measure the self-esteem directed at adolescents. The scale was adapted to Turkish by Çuhadaroğlu in 1985.^[22] Answers of the items of the likert-type scale are designed of four options. Adolescents are expected to choose from one of the four points; "strongly agree," "agree," "disagree" and "strongly disagree."

The reliability-validity coefficient of the scale is 0.71. The Cronbach Alpha for the scale in our study was 0.70. The

minimum score for Rosenberg Self-Esteem Scale is 0 and the maximum is 6.

Trait anxiety scale

The "Trait Anxiety Scale" of the State-Trait Anxiety Inventory, developed by Spielberger *et al.* (1970.^[23-25]) to measure the anxiety level of individuals aged 14 and above, was used. The Trait Anxiety Scale is a 20-item, four-point likert type scale. The minimum score for the Trait Anxiety Scale is 20 and the maximum is 80. A high score indicates a high level of anxiety, while a low score indicates a low level of anxiety.^[23-25]

The reliability-validity coefficient of the scale is between 0.83 and 0.87.^[23,24] The Cronbach Alpha for the Trait Anxiety Scale in this study was 0.84.

Ethical considerations

Prior to the study, ethical permission was obtained from the Ethical Board Directorate, Clinical Researches, Provincial Directorate of Health, Governorship of Erzurum and official approval was received from the Provincial Directorate for National Education, Governorship of Erzurum. It was key that the children and families participating in the study were doing so voluntarily. Both written and oral permission was obtained for families, after explaining the purpose of the study.

Statistical analysis

Statistical analyses were performed using the statistical software program SPSS (SPSS Inc., Chicago, IL, USA) for

Windows (version 10). Percentage distribution, mean, the *t*-test for independent groups, the Chi-square test, the Kruskal-Wallis test, the Mann-Whitney U test (non-parametric tests were used with the aim of testing variables of ashamed and guilty due to having mental retarded sibling [Mann-Whitney U test] and age when the mental retardation occurred and the reason of mental retarded [the Kruskal-Wallis test]) and variance analysis was used to analyse data. For all the analyses, $P < 0.05$ was considered to be statistically significant.

RESULTS

45.4% of children with mentally disabled siblings participating in the study were aged between 17 and 18, of which 47.2% were boys. 48.7% of children without mentally disabled siblings participating in the study were aged between 17 and 18, of which 47.1% were girls. No significant difference was found between the groups with mentally disabled siblings and without mentally disabled siblings when compared according to age, gender, occupation of mother, occupation of father, and what number child they were [Table 1].

It was determined that the average age of mentally disabled children was 13.02 ± 6.32 years, 58.3% were boys, the reason for their mental disability was unknown for 31.5% and 62.1% were congenitally-disabled. 68.5% of children with mentally disabled siblings feared that they would become mentally disabled, 77.8% were embarrassed of their disabled

Table 1: A comparison of the demographic characteristics for children with and without mentally disabled siblings*

Demographic characteristics	Children with mentally disabled siblings (n = 108)	Children without mentally disabled siblings (n = 119)	Total	P value
	n (%)	n (%)	n (%)	
Age				
15-16	59 (54.6)	61 (51.3)	120 (52.9)	$\chi^2=0.14,$
17-18	49 (45.4)	58 (48.7)	107 (47.1)	$P=0.708$
Gender				
Girl	57 (52.8)	56 (47.1)	113 (49.8)	$\chi^2=0.530,$
Boy	51 (47.2)	63 (52.9)	114 (50.2)	$P=0.467$
Occupation of mother				
Employee	9 (8.3)	6 (5.0)	15 (6.6)	$\chi^2=0.532,$
House wife	99 (91.7)	113 (95.0)	212 (93.4)	$P=0.466$
Occupation of father				
Worker	28 (25.9)	20 (16.8)	48 (21.1)	$\chi^2=3.043,$
Employee	40 (37.0)	53 (44.5)	93 (41.0)	$P=0.218$
Self employed	40 (37.1)	46 (38.7)	86 (37.9)	
What number child they are				
1 st child	24 (22.2)	39 (32.8)	63 (27.7)	$\chi^2=4.723,$
2 nd child	33 (30.6)	36 (30.3)	69 (30.4)	$P=0.193$
3 rd child	26 (24.1)	27 (22.7)	53 (23.4)	
4 th child and above	25 (23.1)	17 (14.2)	42 (18.5)	
Total	108 (100.0)	119 (100.0)	227 (100.0)	

*Column percent is taken in the table

sibling, 4.6% felt guilty about their sibling's disability and 34.3% experienced issues with society because of their sibling's disability. The trait anxiety score mean for children with mentally disabled siblings (44.12 ± 7.82) was higher compared with the trait anxiety score mean for children without mentally disabled siblings (43.67 ± 11.15). However, there was no significant statistical difference between their trait anxiety scores [Table 2]. The trait anxiety score mean for children with mentally disabled siblings (47.04 ± 7.53) aged between 17 and 18 was higher in comparison to the trait anxiety score mean for children without mentally

disabled siblings (44.05 ± 11.23) aged between 17 and 18 [$P < 0.05$, Table 3]. The trait anxiety score mean for girls with mentally disabled siblings was 47.14 ± 12.90 and the trait anxiety score mean for girls without mentally disabled siblings was 46.05 ± 7.90 ($P < 0.05$).

No significant difference was found among the average self-esteem score mean according to the age of children [$P > 0.05$ Table 4].

There was no significant statistical difference between the trait anxiety score mean and the self-esteem score mean among groups determined by the gender of the mentally disabled sibling, the reason behind the mental retardation and age the mental retardation occurred ($P > 0.05$).

There was no significant statistical difference between the trait anxiety score mean and the self-esteem score mean among children with mentally disabled siblings according to the fear of becoming disabled like their siblings, being embarrassed by their siblings and their parents showing their mentally disabled siblings more attention [$P > 0.05$, Table 5].

Table 2: A comparison between score means of the trait anxiety and self-esteem for children with and without mentally disabled siblings

Demographic characteristics	Trait anxiety	Self-esteem
	X ± SD	X ± SD
Children with mentally disabled siblings (n=108)	44.12±7.82	1.78±1.46
Children without mentally disabled siblings (n=119)	43.67±11.15	1.86±1.67
P value	0.725	0.708
Score range	20-80	0-6

SD = Standard deviation

Table 3: A comparison between score means of the trait anxiety scale for children with and without mentally disabled siblings based on their demographic characteristics

Demographic characteristics	Trait anxiety				Test and significance
	Children with mentally disabled siblings (n = 108)		Children without mentally disabled siblings (n = 119)		
	n (%)	X ± SD	n (%)	X ± SD	
Age					
15-16	59 (54.6)	41.69±7.27	61 (51.3)	43.31±11.14	t=-0.944, P=0.347
17-18	49 (45.4)	47.04±7.53	58 (48.7)	44.05±11.23	t=1.636, P=0.040
P value	t=-3.742, P=0.000		t=-0.361, P=0.719		
Gender					
Girl	57 (52.8)	47.14±12.90	56 (47.1)	46.05±7.90	t=-0.541, P=0.049
Boy	51 (47.2)	41.96±7.21	63 (52.9)	40.58±8.27	t=0.932, P=0.353
P value	t=2.797, P=0.006		t=3.254, P=0.002		
Occupation of mother					
Employee	9 (8.3)	43.11±9.55	6 (5.0)	38.83±15.32	MWU=1.298, P=0.194
House wife	99 (91.7)	44.21±7.70	113 (95.0)	43.92±10.91	t=0.220, P=0.826
P value	MWU=-0.262, P=0.794		MWU=-1.543, P=0.123		
Occupation of father					
Worker	28 (25.9)	44.28±8.72	20 (16.8)	41.10±9.85	t=1.182, P=0.243
Employee	40 (37.0)	43.75±7.46	53 (44.5)	45.01±11.31	t=-0.650, P=0.517
Self employed	40 (37.1)	44.37±7.70	46 (38.7)	43.23±11.48	t=0.545, P=0.588
P value	F=0.071, P=0.932		F=0.952, P=0.389		
What number child they are					
1 st child	24 (22.2)	43.29±7.20	39 (32.8)	44.66±11.22	t=-0.592, P=0.556
2 nd child	33 (30.6)	45.09±7.89	36 (30.3)	43.47±10.00	t=0.741, P=0.461
3 rd child	26 (24.1)	47.26±8.25	27 (22.7)	40.92±11.95	t=2.239, P=0.070
4 th child and above	25 (23.1)	40.36±6.46	17 (14.2)	46.17±12.02	t=-2.926, P=0.082
P value	F=4.004, P=0.061		F=0.937, P=0.425		
Score range			20-80		

SD = Standard deviation, MWU = Mann Whitney U test

Table 4: A comparison between the score means of self-esteem scale for children with and without mentally disabled siblings based on their demographic characteristics

Demographic characteristics	Self-esteem				P value
	Children with mentally disabled siblings (n = 108)		Children without mentally disabled siblings (n = 119)		
	n (%)	X ± SD	n (%)	X ± SD	
Age					
15-16	59 (54.6)	1.64±1.9	61 (51.3)	2.01±1.73	t=1.291, P=0.199
17-18	49 (45.4)	1.95±1.2	58 (48.7)	1.70±1.61	t=0.826, P=0.410
P value	t=-1.118, P=0.266		t=1.006, P=0.316		
Gender					
Girl	57 (52.8)	1.82±1.45	56 (47.1)	1.89±1.79	t=0.222, P=0.825
Boy	51 (47.2)	1.74±1.8	63 (52.9)	1.84±1.57	t=-0.332, P=0.740
P value	t=0.281, P=0.779		t=0.167, P=0.868		
Occupation of mother					
Employee	9 (8.3)	1.88±1.6	6 (5.0)	0.83±0.98	MWU=0.071, P=0.944
House wife	99 (91.7)	1.77±1.1	113 (95.0)	1.92±1.69	t=-0.668, P=0.505
P value	MWU=-0.241, P=0.810		MWU=-1.582, P=0.114		
Occupation of father					
Worker	28 (25.9)	1.82±1.41	20 (16.8)	1.20±1.10	t=1.637, P=0.108
Employee	40 (37.0)	1.55±1.41	53 (44.5)	1.84±1.64	t=-0.921, P=0.359
Self employed	40 (37.1)	2.00±1.3	46 (38.7)	2.17±1.85	t=-0.469, P=0.640
P value	F=0.960, P=0.386		F=2.412, P=0.094		
What number child they are					
1 st child	24 (22.2)	1.62±1.6	39 (32.8)	1.84±1.72	t=-0.522, P=0.604
2 nd child	33 (30.6)	1.93±1.3	36 (30.3)	1.91±1.66	t=0.057, P=0.955
3 rd child	26 (24.1)	1.96±1.5	27 (22.7)	1.62±1.57	t=0.797, P=0.429
4 th child and above	25 (23.1)	1.56±1.2	17 (14.2)	2.17±1.84	t=-1.607, P=0.107
P value	F=0.816, P=0.518		F=0.380, P=0.768		
Score range				0-6	

SD = Standard deviation, MWU = Mann Whitney U test

Table 5: A comparison between score means of the trait anxiety scale and self-esteem scale for children with mentally disabled siblings, depending on their views about their mentally disabled sibling (n = 08)

Views	n (%)	X ± SD	
		Trait anxiety	Self-esteem
Fear of becoming disabled			
Frightened	74 (68.5)	44.59±8.10	1.83±1.53
Not frightened	34 (31.5)	43.08±7.19	1.67±1.29
P value		t=0.928, P=0.355	t=0.532, P=0.596
Feeling guilty about their sibling's disability			
Yes	84 (77.8)	49.62±10.28	2.37±1.59
No	24 (22.29)	43.68±7.48	1.74±1.44
P value		MWU=211.000, P=0.026	MWU=296.500, P=0.211
Being embarrassed about their sibling's disability			
Yes	5 (4.6)	49.00±7.84	2.40±1.94
No	103 (95.4)	43.88±7.78	1.75±1.43
P value		MWU=170.500, P=0.203	MWU=222.000, P=0.593
The extra attention the family show the disabled sibling			
Yes	8 (7.4)	44.08±8.02	1.76±1.47
No	100 (92.6)	44.25±7.25	1.87±1.42
P value		t=-0.092, P=0.927	t=-0.333, P=0.740
Experiencing social issues because of having a mentally disabled sibling			
Yes	37 (34.3)	47.00±7.76	2.16±1.64
No	71 (65.7)	42.61±7.48	1.59±1.32
P value		t=2.850, P=0.005	t=1.953, P=0.053
Score range		20-80	0-6

SD = Standard deviation; MWU = Mann Whitney U test

The trait anxiety score mean for children that felt guilty about their sibling's disability was higher in comparison to the trait anxiety score mean for children that felt no guilt about their sibling's disability; there was a significant statistical difference between the two groups ($P < 0.05$).

The trait anxiety score mean for children with mentally disabled siblings that experienced issues in society (47.00 ± 7.76) was higher than those that did not experience issues (42.61 ± 7.48); there was a significant statistical difference between the two groups ($P < 0.05$).

The self-esteem score mean for children experiencing problems with society due to their mentally disabled sibling (2.16 ± 1.64) was lower in comparison to those that did not experience issues (1.59 ± 1.32).

In this study, there was a negative relationship ($P < 0.01$) between score means of the Trait Anxiety Scale and Self-Esteem Scale for those with mentally disabled siblings ($r = 0.466$), and those without mentally disabled siblings ($r = 0.536$). Anxiety and self-esteem were inversely proportional for children with and without mentally disabled siblings; as self-esteem decrease, anxiety increased ($P < 0.01$).

DISCUSSION

The difference, by age, gender, parents' occupation and what number of the child, have been found insignificant across the significance level ($P > 0.05$, Table 1). This finding indicates that the children have similar features in terms of the stated variables.

In this study, 31.5% of children with mentally disabled siblings did not know the reason as to why they were disabled and the mental retardation was congenital mostly. In another study, disability reasons of 30% of those with severe mental disability, and 50% of those with mild mental disability were not known.^[26] In a study conducted by Sarihan,^[27] he indicated that 38% of disabilities occurred congenitally and 37% did not know the reason behind the disability.

In this study, more than half of children with mentally disabled siblings were frightened of becoming disabled (68.5%), were embarrassed because of their disabled sibling (77.8%), yet felt no guilt about their sibling's disability (95.4%). Meyer and Vadasy^[10] stated that children with mentally disabled siblings had various concerns; feeling guilty because of their sibling's disorder, feeling embarrassed and avoiding contact with their sibling because of their behaviour and the way they look and feeling frightened because they might get the same illness as their sibling.

After interviewing children with siblings that had various disabilities, McHugh^[28] stated that nearly all of them suffered from guilt, embarrassment, fear and other similar emotional reactions. Findings of this study coincide with those found in studies conducted by Farber and Rychman, cited from Apalaçi^[8] and McHale and Gamble.^[7]

According to Lobato's^[29] compilation, 45% of students with a disabled sibling stated the disadvantages of having a disabled sibling in a study conducted by Grossman, in which he interviewed 83 university students that had mental retardation. These emotions included guilt, embarrassment, neglect, and anger toward their disabled sibling.

In the study, only 8% of families paid more attention to the disabled sibling. 65.7% of children with a mentally disabled sibling stated that they did not experience social issues because of having a mentally disabled sibling. In his study, Sarihan^[27] stated that 68% of parents with disabled children put time aside for their children, while 87% of parents without disabled children put time aside for their children.

The trait anxiety score mean for children with mentally disabled siblings was higher in comparison to trait anxiety score mean for children without mentally disabled siblings; however, there was no significant statistical difference among both groups [$P > 0.05$, Table 2]. Şenel^[20] found that the trait anxiety mean for children with disabled siblings was significantly higher than those with healthy siblings.

There was no significant statistical difference between the self-esteem score means for children with and without disabled siblings [$P > 0.05$, Table 2]. Similar to our findings, Auletta and DeRosa^[30] compared the self-concept of 70 adolescents with severe mentally disabled siblings to the self-concept of 70 adolescents with healthy siblings. There was no significant difference between the self-concept of both groups. Dyson^[31] compared the self-esteem of 71 brothers and sisters; 37 with siblings suffering from the developmental disorder (physically and mentally handicapped, growth deficiency, speech impediment, learning disability and hyperactivity) and 34 with healthy siblings. He concluded that there was no significant between both groups in terms of self-esteem. Rodrigue *et al.*^[32] compared the self-esteem of three groups; 19 children with severely autistic siblings, 20 children with siblings suffering from Down syndrome and 20 children with healthy siblings. They concluded that there was no significant difference between their self-esteem. These findings are similar to that of this study. In a study conducted by Verté *et al.*,^[33] they stated that children with disabled siblings receiving good social support had a high level of self-esteem. Van

Riper^[34] also stated that the level of self-esteem was high for children with disabled siblings. Furman and Buhrmester^[35] emphasised that healthy children living with disabled siblings were more complacent toward personal differences. Aydın^[36] stated that having a disabled sibling enables the child to develop empathy, especially increasing helpful behaviors, which ultimately increased the level of self-esteem.

The level of trait anxiety for children with mentally disabled siblings aged between 17 and 18 was higher than those without mentally disabled siblings. The ages of children with and without mentally disabled siblings affected the level of trait anxiety. The reason why the level of trait anxiety is high in children with mentally disabled siblings may be because their responsibility toward their disabled sibling increases with age and they become more aware of the adverse results caused by the disability and the healthy children are in constant contact with their disabled sibling.

The level of trait anxiety for girls with mentally disabled siblings was higher in comparison to the level of trait anxiety for girls without mentally disabled siblings [$P < 0.05$, Table 3]. According to Breslau *et al.*^[37] healthy siblings, older than their disabled sibling, especially girls, experience more difficulties when adapting. In their studies, McHale and Gamble,^[7] Gath and Gumley,^[38] McHale and Harris^[39] and Gold^[40] stated that girls took on more responsibilities regarding the houseworks and caring for their disabled sibling in comparison to the boys in the family. Lindsey and Stewart^[41] emphasised that extensive responsibility increases adverse behaviour. McHale and Gamble^[7] conducted a study, in which they assessed the psychological adaptation and sibling relationships of children with and without mentally disabled siblings. They concluded that sisters (girls) had a higher depression and anxiety score than brothers (boys); sisters were left to attend and look after their siblings more often, sisters were more adversely affected than brothers and that the difference between the score mean of children with mentally disabled siblings and the score mean of children without mentally disabled siblings was significant.

Self-esteem showed statistically no significant difference for children with and without mentally disabled siblings based on age, gender, occupation of mother, occupation of father, and what number child they were (Table 4) In this study, the difference between the trait anxiety and self-esteem for children with and without mentally disabled siblings was not significantly statistical based on the gender of the disabled sibling, the reason behind the disability, the age at which the disability occurred, the fear of becoming disabled, being embarrassed by the disabled sibling, and the amount of attention parents paid to the disabled sibling ($P > 0.05$).

Kraemer and Blacher^[42] conducted a study on 77 parents with healthy children aged between 7 and 18 and children with Down syndrome. They concluded that having a disabled child in the family had no adverse affect; in fact they had a positive effect on their healthy siblings. Taking on important family roles increases the self-confidence of healthy children, makes them feel responsible and enables them to mature.

In the study, the level of trait anxiety was higher for those that felt guilty about their sibling's disability in comparison to those that felt no guilt about their sibling's disability. McHugh^[28] stated that growing up with a disabled sibling was extremely distressful for a child, and that the guilt felt adversely affects their lives for many years. Gargiulo^[43] emphasised that healthy siblings frequently felt guilty because of their bad feelings towards their disabled sibling, or as a result of being mean to their disabled sibling.

Children afraid of being disabled and children embarrassed by their disabled sibling had a higher trait anxiety score mean. Gargiulo^[43] stated that healthy children embarrassed by their disabled siblings faced fear. They fear that they may become disabled in the future, or that their children will be disabled.

There was a significant statistical difference in trait anxiety score means based on whether or not the child with the disabled sibling experienced social issues [$P < 0.05$, Table 5]. The level of trait anxiety was higher in children experiencing social issues. McHale and Gamble^[7] emphasise that growing up with a disabled sibling changes the daily life of healthy siblings in many ways and caused psychological adaptation and development difficulties.

There was a negative relationship between the trait anxiety and self-esteem of children with and without mentally disabled siblings. As self-esteem decreased, trait anxiety increased. McHale and Gamble,^[7] and Apalaçi^[8] stated in their study that self-esteem decreased as trait anxiety increased. These findings support our study.

CONCLUSION

Although the average score of trait anxiety and self-esteem in both group were not significant different, score of trait anxiety for children with mentally disabled siblings was higher in comparison to the trait anxiety score for children without mentally disabled siblings. Self-esteem showed no significant difference for children with and without mentally disabled siblings based on age, gender, occupation of mother, occupation of father, and what number child they were. The trait anxiety of children experiencing social issues because of their sibling's disability was higher in comparison to those that did not experience any social issues.

In the study, it was concluded that anxiety of children with and without mentally retarded siblings increased as self-esteem of these children decreased.

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