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Sounding the alarm regarding mental health of children and adolescents in relation to parenting style

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Abstract

Background Childhood and adolescence are critical periods for physical and mental development. For that, sounding the alarm for the warning signs and red flags of children's mental health disorders is important to promote good health and mental wellness throughout the lifespan. The aim of the study was to assess children's and adolescents' mental health in relation to parenting styles.

Methods This study used a descriptive cross-sectional design. From early May 2022 until late October 2022, Zagazig University in Egypt hosted this investigation. Subjects: For this study, 400 parents of Zagazig University staff, employees, and workers who agreed to engage in the current study were gathered as a convenience sample. Tools: In order to get the required data, three tools were utilized. Tool I: A questionnaire for interviews to gather demographic information about the participating parents and their children. Tool II: Adapted Ontario Child Health Study Emotional Behavioural Scale: Parent Version (for children 4–17 years). Tool III: Parenting style scale.

Results It was found that criteria for conduct disorder constituted the highest followed by criteria for attention deficit hyperactivity disorder and major depression disorder with a mean and standard deviation of 15.10 ± 3.7 , 12.83 ± 3.4 , and 11.9 ± 2.8 . Also, 66% of the participating parents practiced a permissive parenting style while 18% of them practiced the authoritative style and 16% for the authoritarian style.

Conclusion It was determined that criteria of conduct disorder were the most prevalent, followed by criteria of attention deficit hyperactivity disorder and major depressive disorder. Additionally, there was high statistical significance between mental health disorders, parenting styles, and parental educational level. In order to protect children's and adolescents' mental health, this study recommended alerting parents and teachers about red flags and warning signs of mental health disorders for early detection and management. Additionally, educate parents about effective parenting methods and how to behave correctly with their children. Psychological counseling centers for seeking help should be available everywhere and announced.

Keywords Mental health, Children, Adolescent, Parenting style

Background

Growing up mentally well includes meeting developmental and emotional milestones, gaining healthy social abilities, learning positive social skills, and learning how to deal with setbacks. Children with mental health enjoy a better quality of life and can function successfully at home, school, and in their communities. Significant

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changes in the typical learning, behavior, or emotional regulation patterns of children with mental disorders lead to distress and difficulties navigating day-to-day living. If the child's symptoms are severe, and persistent and interfere with their play, schooling, or other activities, a mental disorder may be suspected. A handful of the most common mental diseases that are identifiable are anxiety, behavior disorders, and attention-deficit/hyperactivity disorder (ADHD) [1].

Mental illness affects one in seven 10–19 years' olds, representing 13% of the disease burden for this age group. Adolescents' illnesses and disabilities are caused by behavioral anxiety and depression disorders. Failing to address adolescent mental health conditions can have long-term effects on an individual's physical and mental well-being, as well as their ability to lead satisfying adult lives [2].

Although there is not much information available on mental health in Egypt, what is known from studies suggests that this is a problem that has to be given priority, for example. 10.5% of preschoolers in the Gharbia Governorate had ADHD [3]. The prevalence of psychiatric illnesses among Egyptian male adolescents in urban settings has increased in Cairo [4]. Teachers reported a high prevalence of emotional and behavioral symptoms (34.7%) and parents reported a high prevalence (20.6%) of the same symptoms in a survey of 1186 children in the Minia Governorate [5]. ADHD (85.3%) and disruptive behavior disorders were the most common diagnoses in Mansoura University Hospitals, followed by intellectual disability (7.8%) and autistic spectrum disorder (5.1%) [6]. An additional investigation found that 37% of the patients had ADHD, 18% had mental problems, 8% had disruptive behavior disorder and 13% had serious depressive disorder [7]. According to the results of another study, 43.4% of children can experience behavioral or emotional issues. The most prevalent problems were behavioral and emotional symptoms (39.1% and 39.4%, respectively), which were followed by problems related to prosocial behavior, hyperactivity, and peer relationships [8].

The most effective institution of society is the family, which plays a significant role in the person's life especially children despite the influences of peers and society [9]. Also, parenting styles are the most effective psychological constructs in investigating the parents' strategies used in raising their children [10]. Parental attitudes and practices that set an emotional environment for parent–child relationships and child development as well as parents' broad behavioral patterns which control and socialize children constitute parenting styles. There are different types of parenting styles, permissive parenting (amiable and undemanding),

authoritarian parenting (a little warm and extremely dominating personality), and authoritative parenting which is characterized by a warming and firm personality [11].

Significance of the study

Children's and adolescents' developmental possibilities are impacted by mental health problems, which may persist into adulthood. Childhood or adolescence is the starting point for more than half of all adult mental health problems. However, mental health issues can arise later in life for people of all ages, not just those with recognized mental illnesses. Furthermore, children and adolescents with symptoms that do not fully meet the criteria for the diagnosis of a mental disorder are at great risk for impaired mental health in adulthood [12]. Children's and teenagers' mental health is closely related to how well their parents are doing and how they interact with the families in which they reside. These relationships are a significant risk factor for the development of psychological disorders whether they are abusive, threatening, consistently negligent, or in some other way psychologically harmful.

The aim of the study was to assess children's and adolescents' mental health in relation to parenting styles.

The aim of the study was fulfilled through the following objectives:

1. Explore criteria of mental health disorders among children and adolescents from parent's perspective.
2. Identify parenting style.
3. Examine the relationship between parenting style and the mental health of children and adolescents.
4. Assess parental perception of their children's mental health problems and seeking for help and treatment.

Research questions

The research questions that guided this study were as follows:

- 1) Do children and adolescents have signs as red flags for mental health disorders?
- 2) What are the most common mental health disorders among children and adolescents?
- 3) Is there a relation between parenting style and mental health disorders in children?
- 4) Do parents realize that their children have mental health problems?
- 5) Do parents seek help and treatment for their children's mental health problems?

Methods

Research design

This study used a descriptive cross-sectional design.

Setting

This study was performed at Zagazig University, Egypt, from early May 2022 until late October 2022.

Subjects

A convenience sample was composed of 400 parents of children from Zagazig University staff members, employees, and workers who agreed to participate in the present study.

- Inclusion criteria for children: normal children of both sexes, aged from 4 to 17 years.
- Exclusion criteria for children: children with chronic disease, children with special needs, and children with previous confirmed diagnoses of psychotic or psychiatric disease.
- Inclusion criteria for parents: parents who accept to participate in the study.
- Exclusion criteria for parents: parents have narcotic or psychotic or psychiatric drugs (we asked the parent general question “are you have any medication?” From this question, the researchers detect the type of medication, if the parents have narcotics or any psychotic or psychiatric drugs, the researchers excluded the parent from the study).

Sample size

We calculate the sample size based on the provided information from the study by Khodabakhsh et al. [13] with a desired power of 90% and a confidence level of 90%, we need to specify an estimate of the proportion or prevalence of the characteristic of interest. The minimum sample size required for the study is 384, with an additional 16 subjects included to account for potential loss during data collection. Therefore, the final sample size for the study was 400 participants.

Tools of data collection

To get the data required to meet the study goals, three tools were utilized. Tools written in simple Arabic language were as follows:

Tool I

An Interview sheet for demographic data of the participating parents and those of their children such as parents' age, gender, education, and occupation as well as marital status. In addition to the children's age, gender, and birth order.

Tool II: Ontario Child Health Study Emotional Behavioural Scale: Parent Version (for children 4–17 years)

The scale was developed by McMaster University (2018) [14] and adapted by researchers.

Scoring system

The scale is composed of 52 items which are scored on a 3-point Likert scale (0=not at all, 1=sometimes or somewhat, 2=often or very true). Item scores can be summed together for the following item sets to generate scale scores for the following seven Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5) disorders. Conduct disorder (11 items), opposition defiant disorder (6 items), attention deficit hyperactivity disorder (8 items), social phobia-social anxiety disorder (5 items), separation anxiety disorder (7 items), generalized anxiety disorder (6 items), and major depressive disorder (9 items). Item scores are calculated to determine the scale scores. All 52 items can be summed together to generate a total score.

Tool III: Parenting Style Scale

Parenting styles developed by Robinson et al. (1995) [15] and adopted in the study consist of 30 items, 13 statements for each of both types of parenting style (authoritative-authoritarian) and 4 statements for the permissive type.

Scoring system

The scoring system of each statement ranges from “never” to “always” on a 3-point scale. At the end of each segment, add up the scores and divide it by the total number of questions in that segment. The calculated score is the total score. The preferred parenting style is indicated by the highest score.

Validity and reliability

For validity assurance purposes, the tools were tested for content validity by five experts (two assistant professors of pediatric nursing, one professor of psychiatric nursing, one assistant professor of community health nursing, one faculty of nursing, and one professor of pediatric, faculty of medicine). The recommendations for modifications were done and the final form was ready for use.

Reliability

The internal consistency of the final scales was measured using Cronbach's alpha test reliability coefficient. The parenting scale's reliability score was 0.837 which indicates good internal consistency of the tool. Ontario Child Health Study Emotional Behavioural Scales:

Parent Version has reliability with internal consistency of $\alpha = 0.936$.

Pilot study

The pilot study was performed on 10% of the examined parents in the study settings to test the applicability of the developed tools and the clarity of the included questions related to data collection tools. Also, the pilot study served to determine the needed time for each parent to answer the study's questions and fill in the questionnaire. The pilot's results indicated that no changes were needed so, the participating parents of the pilot study were included in the main study sample.

Field work

Data was collected over a 6-month period, beginning in early May 2022 and ending in late October 2022. Three practical faculties were selected including the faculty of medicine, the faculty of nursing, and the faculty of science. Convenient sample was collected randomly according to sample size and acceptance of the participants. The sample was completed by the faculty of arts for the purpose of comparing theoretical and practical staff, but it was difficult to get their agreement to participate in the research for that comparison was canceled from the results. After getting the official permission the pilot testing of the study tools was done and analyzed. The researchers interviewed the parents individually; the objective of the study was explained and obtained their verbal consent. They were met by the researchers 6 days per week from Saturday to Thursday from 10:00 a.m. to 12:00 p.m. and asked to fill out the questionnaire under the guidance of researchers it took 15:20 min.

Ethical consideration

The research ethics committee of Zagazig University's Faculty of Nursing (ID/Zu.Nur.REC #:0016) gave the study its approval. Before any data was collected and after the study's nature and goal were explained, oral consent was obtained from each parent. Throughout the course of the study, the researchers ensured the confidentiality and anonymity of the data they obtained. They were made aware of their freedom to withdraw from the study at any moment, for any reason, and without responsibilities.

Statistical design

SPSS 20.0 for Windows (SPSS Inc., Chicago, IL, USA, 2011) was used to collect, tabulate and statistically analyze all of the data. Quantitative data were expressed as the mean \pm SD and qualitative data were expressed as absolute frequencies (number) and relative frequencies (percentage). The one-way analysis of variance (ANOVA) test was utilized to compare more than two different

groups of normally distributed quantitative data. The student "t" test was used for the comparison of means of two independent groups of quantitative data which were normally distributed. The percentage of categorical variables was compared using the chi-square test or Fisher's exact test when appropriate. A correlation coefficient "Pearson correlation" is a numerical measure of some type of correlation, meaning a statistical relationship between two variables. Multiple linear regression was also utilized to predict the variables that impact overall mental health. The internal consistency of the scales was evaluated by calculating the Cronbach alpha coefficient. Statistical significance was defined as a p value < 0.05 , high statistical significance as a p value < 0.001 , and statistical non-significant as a p value > 0.05 .

Results

Socio-demographic characteristics of the participating parents and their children are shown in (Table 1). It was found that 75.50% of parents were within the age group of 20 to less than 40 years with a mean of age 37.29 ± 6.46 years, while 63.75% of them were females and 59.75% were from rural areas. Concerning educational level 48.25% of participating parents were postgraduates (had master's and PHD) and 50% were employees and workers and 46.50% of the staff members were working in practical faculty. Regarding marital status, 96.50% of the participating parents were married. Also, the participating parents reported that 52.75% of their children were aged from 6 to less than 12 years with a mean of age 9.4 (3.8) years and 54% of their children were male as well and 48.50% were the first child.

Distribution of the children and adolescents who are at risk for mental health disorders as reported by participating parents, it was found that the most common health problems were conduct disorder followed by ADHD and major depressive disorder as reported by parents with a mean of 15.1 ± 3.7 , 12.83 ± 3.4 , and 11.9 ± 2.8 respectively, while the mean \pm SD of generalized anxiety disorder was 6.31 ± 1.99 . As well as the least health problems were opposition defiant disorder, separation anxiety, and social phobia/social anxiety with mean 4.54 ± 2.58 , 4.23 ± 2.65 , and 3.12 ± 2.9 respectively (Table 2).

Criteria for conduct disorder that were reported by parents represented as severe in 4.0% of children, moderate in 26.5%, and mild in 66.0%, while only 3.5% of children had none of the conduct disorder criteria. This is an alarm because it means that there are 96.5% had criteria for conduct disorder. While, criteria for ADHD that were reported by parents represented as severe in 12.0% of them, moderate in 36.3%, and mild in 47.5%, while only 4.2% had none of the ADHD criteria. This is an alarm

Table 1 Socio-demographic characteristics of the participating parents and their children (n = 400)

Items	No	Percentages
Age(years):		
20– < 40	302	75.50
40–60	98	24.50
Mean (SD)	37.29(6.46)	
Gender:		
Male	145	36.25
Female	255	63.75
Residence		
Rural	239	59.75
Urban	161	40.25
Education level:		
Primary and preparatory	13	3.25
Secondary or technical	95	23.75
High qualification	99	24.75
Postgraduate	193	48.25
Category:		
Staff	200	50.00
Employee and workers	200	50.00
Faculty:		
Employee and workers	200	50.00
Practical (staff)	186	46.50
Theoretical (staff)	14	3.50
Marital status:		
Married	386	96.50
Divorced	5	1.25
Widow	9	2.25
Child age (years):		
4– < 6	67	16.75
6– < 12	211	52.75
12–17	122	30.50
Mean (SD)	9.4 (3.8)	
Child gender:		
Male	216	54.00
Female	184	46.00
Birth order:		
First	194	48.50
Middle	101	25.25
Last	105	26.25

because it means that there are 95.8% had criteria for ADHD.

Concerning major depressive disorder, represented as (severe, moderate, and mild) with percentages of (6.3%, 18.0%, and 65.0%) while 10.7% of children and adolescents had none of the major depressive disorder criteria as reported by participating parents. This is an alarm

Table 2 Distribution of children and adolescents who are at risk for mental health disorders as reported by participating parents

Mental health	Number	%	Mean (SD)
Conduct disorder:			
Severe	16	4.00	15.10 ± 3.7
Moderate	106	26.50	
Mild	264	66.00	
None	14	3.50	
ADHD:			
Severe	48	12.00	12.83 ± 3.4
Moderate	145	36.30	
Mild	190	47.50	
None	17	4.20	
Generalized anxiety disorder			
Severe	25	6.30	6.31 ± 1.99
Moderate	131	32.70	
Mild	213	53.30	
None	31	7.70	
Major depressive disorders:			
Severe	25	6.30	11.9 ± 2.8
Moderate	72	18.00	
Mild	260	65.00	
None	43	10.70	
Opposition defiant disorder			
Severe	6	1.50	4.5 ± 2.58
Moderate	32	8.00	
Mild	53	13.25	
None	309	77.25	
Social phobia/social anxiety			
Severe	4	1.00	3.1 ± 2.9
Moderate	24	6.00	
Mild	29	7.25	
None	343	85.75	
Separation anxiety			
Severe	8	2.00	4.2 ± 2.65
Moderate	20	5.00	
Mild	70	17.50	
None	302	75.50	
Total:			
Severe	12	3.00	58.2 ± 20.02
Moderate	149	37.30	
Mild	235	58.70	
None	4	1.00	

None 0, mild 33%, moderate 33%, severe 33%

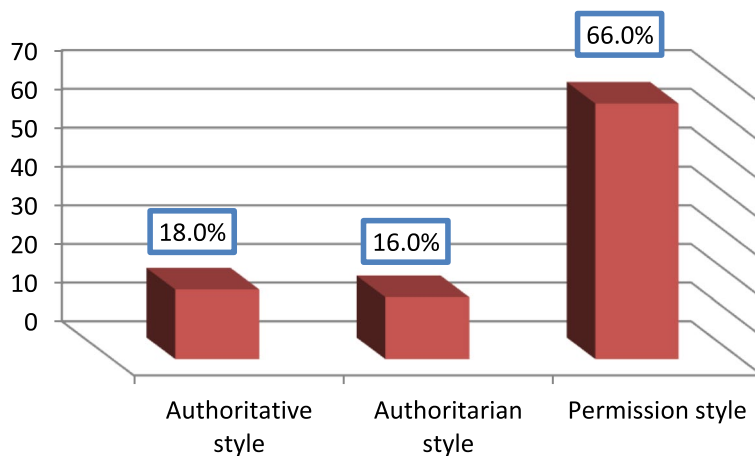
because it means that there are 89.3% had criteria for ADHD. As well as generalized anxiety disorder was represented as severe in 6.3% of children, moderate in 32.7%, and mild in 53.3%, while only 7.5% of children had none of the generalized anxiety disorder criteria.

This is an alarm because it means that there are 92.3% had criteria for generalized anxiety disorder as reported by their parents.

Regarding opposition defiant disorder only 1.5% of studied children and adolescents have severe criteria as reported by their parents, and 8% had moderate criteria. 13.2% had mild signs while 77.3 had no criteria for opposition defiant disorder. This means that 22.7% of them had criteria for opposition defiant disorder. The participating parents reported that 85.7% of their children and adolescents had no criteria for social phobia/social anxiety, while 7.3% had mild criteria, 6.0% had moderate criteria and only 1% had severe criteria. This is an alarm because it means that there are 14.3% had criteria for social phobia/social anxiety. Concerning

separation anxiety, it was found that 75.5% of studied children and adolescents had no criteria for separation anxiety, while 17.5% had mild criteria, 5% had moderate criteria and only 2.0% had severe criteria. This is an alarm because it means that there are 24.5% had criteria for separation anxiety as reported by their parents. Finally, 58.7% of the studied children and adolescents had mild criteria for mental health disorders, 37.3% had moderate criteria, and only 3.0% had severe criteria as reported by their parents.

Figure 1 clarifies the frequency distribution of the participating parents in relation to their parenting style. It was found that 66.0% of the participating parents practiced the permissive style while 18.0% practiced the authoritative style and 16.0% for the authoritarian style.



Parenting styles

Fig. 1 The distribution of the participating parents in relation to their parenting styles (n=400)

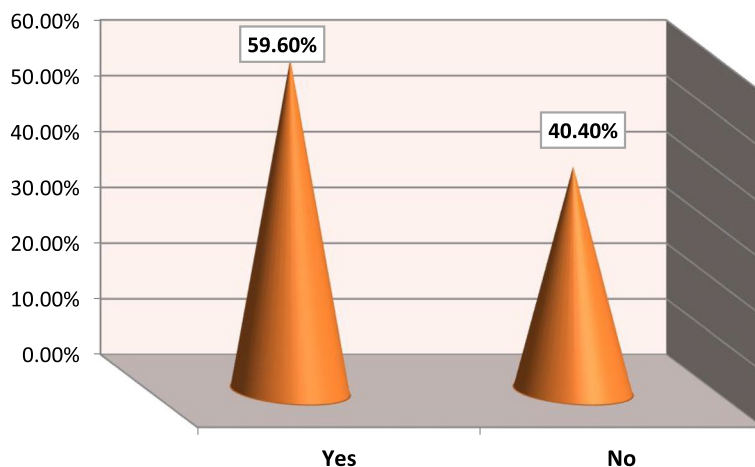


Fig. 2 The distribution of the participating parents regarding their perception of work stress makes them nervous with their children (n=400)

Data in Fig. 2 shows that 59.6% of the participating parents reported that their work stress made them nervous with their children, while 40.4% of them mentioned that their work stress did not make them nervous with their children.

When the participating parents were asked if their children had any other health problems, 83.0% of them mentioned that they observed other health problems and 17.0% mentioned that their children did not have health problems (Fig. 3).

The participating parents reported other problems that they observed in their children. It was found that 98% of their children had phone addiction and nomophobia, 30% had anxiety and nervousness, 25% had stubbornness or obstinacy, 19% had rebellion and not

obeying orders, 16% lying, 12.7% had arguing and unashamed, 12.7% had insults, 11.5% had aggressiveness and 11% had an inability to concentrate (Fig. 4).

The distribution of participating parents according to their seeking help and treatment for their children and adolescents at risk for mental health disorders was portrayed in Fig. 5. It was found that 8% of them seeking help and treatment while 92% of them not seeking help.

The relationship between the educational level of the participating parents and their parenting style is illustrated in Table 3. It was found that 66.66 of post-graduated parents practiced an authoritative parenting style, 42.18 of them practiced an authoritarian style and 44.69% of postgraduated parents practiced a permissive style.

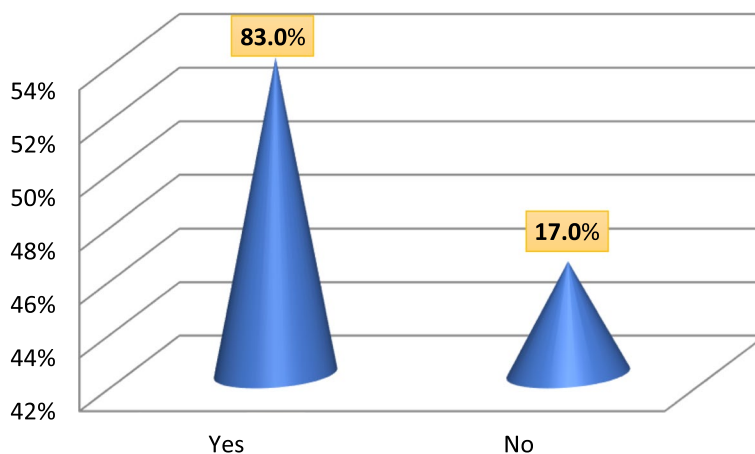


Fig. 3 The distribution of the participating parents related to their perception about if their children have any other health problems (n = 400)

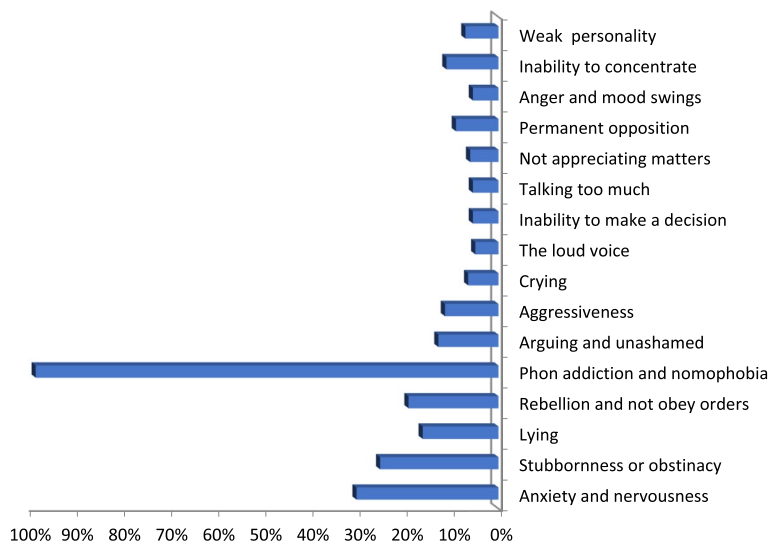


Fig. 4 Description of the children's problem as reported by the participating parents

Seeking for help

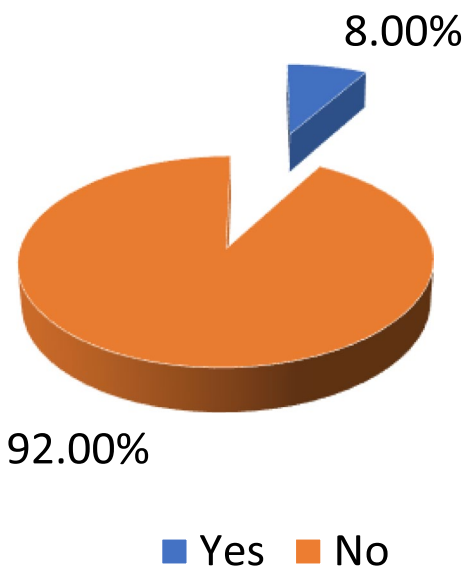


Fig. 5 The distribution of the participating parents according to their seeking help and treatment for their children's health problems (n=332)

Concerning permissive style, 44.69% of permissive parenting styles were postgraduated while 26.50% of them were highly qualified, 25.37% had technical or secondary education and 3.40% had primary or preparatory education. University staff represented 46.60% of permissive

parenting style. In relation to authoritarian parenting style, 42.18% were postgraduated, 23.42% were highly qualified, 29.68% had technical or secondary education and 4.68% had primary or preparatory education. University staff represented 43.75% of authoritarian parenting style.

Regarding authoritative parenting style, 66.66% were postgraduated, 19.44% were highly qualified, 12.50% had technical or secondary education and 1.40% had primary or preparatory education. University staff represented 68.10% of authoritative parenting style. In particular, practical faculties' staff represented 59.72% of authoritative parenting style opposite to 9.72% of theoretical faculties. There was statistical significance between the educational level of the participating parents and the parenting style that they practice with their children.

The relation between the total mean scores of children and adolescents at risk for mental health disorders and the socio-demographic characteristics of participating parents and their children was illustrated in Table 4. It was found there was a highly statistically significant relation between total mean scores of children and adolescents at risk for mental health disorders and the gender of parents with means of 34.13 ± 17.75 for female parents and 25.26 ± 15.39 for male parents. Also, there is a significant difference between married and unmarried (widow and divorced) parents with means of 30.64 ± 17.53 and 38.57 ± 13.16 respectively.

Concerning parents' educational level, the total mean score of children and adolescents at risk for mental health disorders for parents who had secondary

Table 3 Relation between the educational level of participating parents and their parenting style (n=400)

Demographic characteristics	Parenting style						χ ² (p value)
	Authoritative (n=72)		Authoritarian (n=64)		Permission (n=264)		
	No	%	No	%	No	%	
Education level							
Primary and preparatory	1	1.40	3	4.68	9	3.40	13.712 (0.033*)
Secondary or technical	9	12.50	19	29.68	67	25.37	
High qualification	14	19.44	15	23.42	70	26.50	
Postgraduate	48	66.66	27	42.18	118	44.69	
Category							
Staff	49	68.10	28	43.75	123	46.60	11.616 (0.003**)
Employee and workers	23	31.94	36	56.25	141	53.40	
Faculty							
Employee and workers	22	30.60	36	56.30	142	53.78	19.865 (0.001**)
Practical faculties staff	43	59.72	26	40.62	117	44.31	
Theoretical faculties staff	7	9.72	2	3.12	5	1.89	

χ² chi-square test. Non-significant (p > 0.05)

* Statistically significant (p < 0.05)

** Statistically highly significant (p < 0.001)

Table 4 Relation between the overall mean scores of children and adolescents who are at risk of mental health problems and the socio-demographic characteristics of the parents and children under study (n = 400)

Socio-demographic characteristics	Total mental health score Mean ± SD	Test of significance and p value
Gender of parents		
Male	25.26 ± 15.39	t = 5.031
Female	34.13 ± 17.75	P = 0.001**
Education level		
Primary and preparatory	34.00 ± 12.40	F = 4.221
Secondary or technical	34.84 ± 19.92	p = 0.006**
High qualification	26.24 ± 14.43	
Postgraduate	31.18 ± 17.39	
Marital status		
Married	30.64 ± 17.53	t = 2.185
Unmarried (widow and divorced)	38.57 ± 13.16	P = 0.045*
Child age		
4– < 6	27.05 ± 14.47	F = 3.583
6– < 12	32.27 ± 18.24	p = 0.029*
12–17	32.39 ± 18.28	
Birth order		
First	32.44 ± 17.99	F = 3.032
Middle	31.16 ± 18.51	p = 0.049*
Last	26.94 ± 13.86	
Effect of parental work stress on children		
Yes	33.67 ± 16.99	t = 4.159
No	26.27 ± 17.31	P = 0.001**
Parent’s perception about if their children have any other health problems		
Yes	37.11 ± 16.63	t = 7.667
No	24.60 ± 15.93	P = 0.001**

F one-way ANOVA, t Student’s t test, non-significant (p > 0.05)

* Statistically significant (p < 0.05)

** Statistically highly significant (p < 0.001)

or technical education was 34.84 ± 19.92, followed by 34.00 ± 12.40 for parents had primary or preparatory education and 31.18 ± 17.39 for postgraduated as well as 26.24 ± 14.43 for high qualified parents. The difference was highly statistically significant with p value of 0.006. The same table also revealed that there was a high statistically significant difference between total mean scores of mental health and the effect of parental work stress on their children and their perception about if their children have any other health problems with means 33.67 ± 16.99 and 37.11 ± 16.63 respectively.

Table 5 illustrates the relationship between total mean scores of children and adolescents at risk for mental health disorders and parenting style. It was found that there was high statistical significance between total mental health

Table 5 Relationship between parenting style and the total mean scores of children and adolescents at risk for mental health disorders

Parenting style	Total mental health disorders score (Mean ± SD)	F (p value)
Authoritative style	25.25 ± 7.68	31.13 (0.001**)
Authoritarian style	35.31 ± 8.72	
Permission style	29.70 ± 7.00	

F one-way ANOVA

** Statistically highly significant (p < 0.001)

score and parenting styles, the highest statistical significance was for authoritarian parenting style with a mean and SD of 35.31 ± 8.72, followed by permissive parenting style with M and SD of 29.70 ± 7.00, and authoritative parenting style with M and SD of 25.25 ± 7.68.

The correlation between the total mean scores of children and adolescents who are at risk for mental health disorders and parenting style was clarified in Table 6. The table revealed that there was a highly negative statistical significance correlation between authoritative parenting style and mental health (this means that when parents practiced authoritative parenting style, this increased the occurrence of mental health problems among their children). Also, there was a high positive statistical significance between authoritarian and permissive parenting styles with mental health (this means that when parents practiced authoritarian and permissive parenting styles, this means mental health problems decreased among their children).

Table 7 clarifies that the highest significant model detected through the F test value was 9.850 with p value. 000. This model explained that 41% of the variation in total mental health was detected through an R² value of 0.414. It was found that the authoritative style had a high-frequency negative effect on mental health at p value < 0.01**. While authoritarian and permissive styles had a high-frequency positive effect on mental health at p value of < 0.01**. As well as the last birth order of children and married parents had a slight positive effect on the mental health of children at p value < 0.05*.

Discussion

Parent’s approaches and behaviors towards their children create an emotional environment in which the child is growing up. Mental health problems are not only related to parental psychopathology but also closely related to parenting practices and the parent–adolescent relationship [16]. The aim of the current study was to assess children’s and adolescents’ mental health in relation to parenting styles.

Table 6 Correlation between parenting style and the total scores of children and adolescents who are at risk for mental health disorders

		ADHD	Conduct	Anxiety	Depression	Total
Authoritative style	<i>r</i>	-.228*	-.567**	-.342**	-.420*	-.447**
	<i>p</i>	0.011	.000	.005	.017	.000
Authoritarian style	<i>r</i>	.579**	.409**	.343**	.462**	.468**
	<i>p</i>	.000	.000	.004	.000	.000
Permission style	<i>r</i>	.358**	.352**	.332**	.506**	.509**
	<i>p</i>	.002	.002	.008	.000	.000
Age of parent	<i>r</i>	-.068	-.078	.090	-.044	-.053
	<i>p</i>	.175	.119	.071	.385	.295
Age of children	<i>r</i>	-.047	-.003	.410**	.362**	.076
	<i>p</i>	.354	.949	.000	.001	.130
Birth order	<i>r</i>	-.068	-.063	-.090	-.343**	-.312*
	<i>p</i>	.177	.208	.073	.004	.025

** Highly significant ($p < 0.001$)

* Statistically significant ($p < 0.05$)

$R^2 = 0.104$. ANOVA: $F = 11.492$. $P < 0.001$

Table 7 Multiple linear regression model for total mental health ($n = 400$)

	Unstandardized coefficients		Standardized coefficients		P value
	B		B	T	
Authoritative style	-.928		-.240	5.063	.000**
Authoritarian style	.901		.245	4.890	.000**
Permission style	.945		.199	3.986	.008**
Age of parent	-.097		.037	.624	.533
Age of children	.242		.055	.952	.342
Birth order (last)	-.661		.228	2.908	.011*
Child gender	-.0346		-.055	-1.174	.241
Marital status (married)	0.335		0.106	2.528	.012*
Education	-2.915-		-.151-	-3.052	0.001**
Model	R^2	Df	F	P value	
Regression	0.414	7	9.850	.000**	

a. Dependent variable: total mental health

b. Predictors: (constant): authoritative style, authoritarian style, permission style, age of parent, age of children, birth order (last), child gender, marital status (married)

c. * statistically significant ($p < 0.05$)

** statistically highly significant ($p < 0.001$)

Regarding socio-demographic characteristics of the studied parents and their children

The results of the current study revealed that three-quarters of the studied parents were aged from 20 to less than 40 years with a mean of age 37.29(6.46) years and three-fifths were female. As well as about half of the studied parents were postgraduated and about one quarter had a highly qualified education. In addition, most of them were married.

Similarly, Berengur et al. [17] found that mothers of children with ADHD had an average age of 40.57 years. 2.7% of them were single and the majority were married.

In terms of education, about a quarter of mothers in the control group had a university degree. Only 10.8% had finished upper secondary education and less than one-fifth had finished primary education. Slightly more than half were from rural areas. This result was contradicted by other studies [18–20] reported that more than three-quarters of the studied samples lived in urban areas. This may be due to that more Egyptians are living in rural areas than in cities. Egypt’s urban population was at the level of 43% in 2023, while Egypt’s rural population was 67%. The urban population is projected to outnumber people living in rural areas for the first time in 2041 [21].

In this study, slightly more than half of the studied children were male and aged from 6 to less than 12 years with a mean of age 9.4 (3.8) years. These findings were matched with [20, 22, 23].

Regarding parenting style

The present study illustrated that two-thirds of the participating parents (66%) practice permissive parenting style and less than one-fifth of them (18%) were authoritative and (16%) were authoritarian. This may be due to the fact that, in Egypt, there are no mandatory programs about parenting and raising children neither before nor after marriage. Child rearing and discipline may need more training programs for parents about parenting and parenting practices. These programs must be a condition for membership, such as medical examinations before marriage and ensuring the mental health of both spouses.

In a study by Garcia et al. [24] that is in agreement with the current study result, the studied adolescents reported the permissive parenting style as the most common parenting style that parents practice with them. In contrast, the permissive was the least reported parenting style in other studies [25]. In addition, other studies [22, 23] found that the authoritative parenting style was the most common configuration for the whole study sample. Also, the findings of the present study were not in harmony with Yang and Zhao [26] who found that Chinese parents practice authoritarian parenting styles while only the high social classes practice the permissive parenting style.

Regarding mental health

The current results, it was found that the participating parents reported criteria for conduct disorder as the most common mental health problem, followed by criteria for ADHA, major depressive disorder, generalized anxiety disorder, opposition defiant disorder, separation anxiety, and social phobia/social anxiety. In the same line with the present study results, a study conducted in Romania [27] mentioned conduct disorders as the most common, followed by attention deficit hyperactivity disorder. Other studies [28] reported conduct disorders as the second most common followed by hyperactivity disorders. Also, another study [29] found that the most common diagnosis was ADHD.

National Healthcare Quality and Disparities [30] stated that attention deficit disorder was the most common mental health disorder diagnosed in children aged 3 to 17 in 2016–2019. Also, Karaer and Akdemir [31] mentioned that half of the control group had major depressive disorder, followed by anxiety disorders and disruptive behavior disorders. Seleem [32] found that the most prevalent diagnostic categories were depression, disruptive behavior disorders, and ADHD, while anxiety disorder was the least prevalent diagnosis.

Concerning the relationship between children-related characteristics and parenting style

The gender of parents played a significant role in determining the type of parenting style as there was a statistically significant relationship gender of parents and parenting style. It was found that there was no statistically significant relationship between the age and gender of the children and their parenting style in harmony with [33] who stated the same result. This may be due to the cultural changes and differences of the Egyptians. In difference with urban culture, in rural areas, there may be more fear and overprotection for girls which may be translated into an authoritative parenting style, while more flexibility for boys which may be translated into a permissive parenting style. In addition, the different cultures of Upper Egypt may be translated into authoritarian parenting styles regardless age or gender of the children.

Concerning relation between parent characteristics and total mental health score

The education of parents was the main predictor of mental health problems whereby children from families with higher-educated parents had a lower risk of developing mental health problems than their peers with low-educated parents [34]. This result was in agreement with the finding of the current study where there was a high statistically significant relation between parents' educational level and total mental health score as well as parenting styles. Parents with high educational levels may be more open-minded than those with low educational levels this result matched with [28].

The current study findings showed a statistically significant relationship between the total mental health score and marital status. This result was supported by [18, 34] who mentioned that living without both biological parents was linked to higher mental health problems and they attributed this to the timing and presence of caregiver's relationship disruptions, parental psychopathology, single parenthood, and family stressors. Wallenborn et al. [35] stated that children with divorced parents are known to be more likely to experience behavioral problems; however, this association may manifest itself during specific stage of child's development.

Concerning the relation between birth order and total mental health score, the present study found that there was a statistically significant relation between birth order and total mental health score. These results are supported by [36, 37]. While contradicted by [38] who found that birth order was not related to psychological distress or mental health problems in adult life. From the researchers' point of view, the mental health of children may be affected by birth order depending on parents' communication and collaboration. The first child may

get more care than other siblings if parents are good at communicating and collaborating. While if they are not divorced the child may be neglected or get inconsistent parenting disciplines. Other opinions are in contrast with that as they see the first child cannot get more care than other siblings because of low parent experience in child rearing and discipline.

Parental stress has a negative impact on child-rearing. It can be a contributing factor for parents being insufficiently responsive and affectionate to their children. Many detrimental effects, like as aggressive and disruptive behaviors, social disengagement, low self-esteem, and a sense of rejection, can result from poor parenting [39]. According to Rakhshani et al. [40] when the parents face emotional challenges or stress in their daily life and without sufficient information about children rearing, their developmental stages, and psychological needs, children grow and establish their personality in unfavorable conditions.

The finding of the current study revealed that there was a high statistically significant relation between total mental health score and work stress reported by the participating parents. This result was supported by [17, 41]. This could be due to the daily life pressures, problems, and challenges faced by working mothers and fathers who spend a long period of time at work and return home full of fatigue, exhaustion, and negative energy that is unconsciously projected onto the children without spending a longer period of time with their children, especially, which negatively affects the mental health of children. Parents that are less distressed usually seem warm, more responsive, rational, and moderate in the form of discipline they use with children. The characteristics of children relating to such parenting practices include school success, high self-esteem, competent social skills, and the capacity to maintain a balance between conforming to parents and acquiring autonomy [39].

Regarding the relationship between total mental health score and parenting style

The finding of the current study revealed that there was a high statistically significant relation between parenting style and total mental health score. This result was supported by [32]. Also, Muraco et al. [42] reported that children and teenagers from authoritarian families characterized by high demands and low responses generally do well academically and do not engage in problem behavior; however, they also tend to have poor social skills, worse self-esteem, and greater rates of depression. While children and teenagers from permissive homes characterized by elevated levels of responsiveness as well as reduced levels of demandingness are at greater risk of engaging in problem behavior and doing poorly

academically, they also tend to have stronger social skills, lower levels of depression, and higher self-esteem.

Authoritarian parenting has a positive association with children's anxiety, depression, and other related psychological problems. It is also linked to avoidant interactions. Parents who utilize an authoritarian parenting style may cause children to lack psychological flexibility and maturity [43]. When compared to alternative parenting approaches, authoritative parenting has been linked to improved results, such as decreased levels of internalizing and externalizing issues in children of all ages [44].

When parents are sensitive to and supportive, their children learn to control and manage their emotions. Inadequate parenting has been found to cause children to simultaneously display higher levels of externalizing symptoms and internalizing symptoms [45]. Children who have unsupportive and uncooperative connections with their parents are more likely to experience depression. Positive parenting is characterized by cooperative and supportive connections between parents and children, which lower the likelihood of depression in children. Research indicates that children develop a negative cognitive style and a poor self-image from parents who demand who receive less warmth, acceptance, compliance, or an elevated level of criticism and rejection [46].

Conclusion

It was determined that criteria for conduct disorder were the most prevalent, followed by criteria for attention deficit hyperactivity disorder and major depressive disorder as reported by the studied parents and practiced permissive parenting style. It was found that the authoritative style had a high-frequency negative effect on mental health. While authoritarian and permissive styles had a high-frequency positive effect on mental health. Additionally, there was high statistical significance between mental health disorders and parental educational level.

Recommendations

1. Educating parents on how to behave correctly with their children and learning the best parenting styles and appropriate behavior with children and adolescents.
2. Psycho-education such as guidance and support for parents is an effective prevention strategy in families.
3. Encouraging integrated familial relationships and enhancing parents' parenting skills can be effective approaches to promoting children's and adolescent's mental health.
4. Educating parents about mental health promotion programs.
5. Evaluate the emotional and behavioral needs of students; offer individual or group therapy; and promote conflict resolution, problem-solving, anger control, and resilience.

6. Assessing the student's relevant behavioral, mental health, and academic performance as a component of a complete evaluation.
7. Activating the responsibility of the school psychologist, whose main focus is on the emotional, social, and academic health of children and adolescents in the school environment.
8. Further research on large sample sizes to be representative and generalized for the population, more focused research on the mental health of children and adolescents to foster youth and adult health, and the development of randomized and non-randomized clinical trial training programs for parents regarding child-rearing and discipline.

Limitations of the study

The findings of this study have to be seen in light of some limitations

The sample size was calculated with the purpose of comparing the mental health of children between parents of practical faculties and parents of theoretical faculties. Because of difficult agreements and permissions to conduct our research in the theoretical faculties, we excluded the objective of the comparison from the research. The sample size is not sufficient to ensure that the sample is considered representative of a population and that the statistical result can be generalized to a larger population.

Abbreviations

ADHD Attention deficit hyperactivity disorder.
DSM-5 Diagnostic And Statistical Manual Of Mental Disorders Fifth Edition

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Authors' contributions

All authors of this research contributed to the conception of the study. N.M. contributed to the study design, material preparation, data collection, and writing manuscript. F.N. contributed to the study design, material preparation, data analysis, and writing the manuscript. R.A. contributed to the study design, material preparation, data collection, and reviewing the manuscript. All authors contributed to and approved the final manuscript.

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Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

The study received ethics approval from the research ethics committee of the Faculty of Nursing, Zagazig University. Oral consent was obtained from all individual participants included in the study.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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