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RESEARCH ARTICLE

PREVALENCE OF EATING DISORDERS IN A PEDIATRIC POPULATION IN THE EASTERN REGION OF MOROCCO

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Abstract

Biopsychosocial diseases, particularly eating disorders (EDs), are increasingly prevalent and involve different body systems and individual aspects as well as their social relationships. This study aims at finding out the extent to which eating disorders are prevalent in a population and enumerating any factors-related. The survey is cross-sectional carried out on a sample of 520 children. A self-administered questionnaire on sociodemographic characteristics, lifestyle, and dietary habits was used. Screening for EDs was performed using the Eating Attitudes Test (EAT-26) and the EDY-Q (Eating Disorders in Youth-Questionnaire). These tools detected an EDs prevalence of 19% in our study, with children at risk of EDs. The average age of the children was 13 years, with minimum being 7 years while maximum was 17 years old. 77.5% were girls. In the sample, the most affected age group was 13 to 17 years, with the majority coming from families with more than one child (91%). Among these children, 47% were impacted by a family event, and 58% had excessive media exposure. Additionally, 47% expressed concerns about their body image, with the majority being girls (36%). Furthermore, a quarter of the children experienced school bullying, and 39% suffered from study-related stress. The susceptibility to present an anorexia nervosa was noted in 22% of cases, bulimia in 13%, and pica in 19%.

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Introduction:-

Eating disorders (ED) are increasingly prevalent and emerging as a major public health concern, particularly among older children. They consist of a complex set of attitudes and behaviors related to an incessant preoccupation with weight and body aesthetics [1]. EDs are impacted by various biological, psychological, and sociocultural causes [2]. The most commonly diagnosed ones include anorexia nervosa, bulimia nervosa and binge eating disorder together with the newly emerged Avoidant/Restrictive Food Intake Disorder (ARFID), having three variants: Selective Eating (SE), Functional Dysphagia (FD) and Food Avoidance Emotional Disorder (FAED) [3,4]. We aim in this study to estimate the prevalence of eating disorders (EDs) in children and identify risk factors associated with these behaviors.

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Materials and Methods:-

This is a descriptive cross-sectional study carried out at the University Hospital Mohamed VI in Oujda and private educational institutions over a period of 5 months (from January 1 to May 31, 2024). The survey comprised of 520 children who were selected randomly ensuring each member of the survey population possess equal chances of being part of the sample size. We applied EDY-Q (Eating Disorders in Youth Questionnaire) and EAT-26 (Eating Attitudes Test), widely recognized tools for screening eating disorders among children and teenagers through self-evaluation [5,6].

The EDY-Q is a 14-item instrument, with twelve items covering the criteria for Avoidant/Restrictive Food Intake Disorder (AFRID) as described in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5; American Psychiatric Association, APA, 2013), including its three proposed variants: **Food Avoidance Emotional Disorder (FAED), Selective Eating (SE), and Functional Dysphagia (FD).** However, there are two additional items where pica and rumination disorder are briefly mentioned; two other eating disorders that are recognized to have early onset and are described in the DSM-V (APA, 2013) [5].

The EAT-26 helps determine people's likelihood of having an eating disorders (EDs). Widely studied and validated in both healthy populations and those affected by such disorders, it is the most commonly used screening tool for eating disorders in France [6].

The collected data were recorded follows data recording tools, the data analysis used Microsoft excel to input the collected data and data analysis was done using SPSS software. To be specific, the significance threshold was set at $p < 0.05$.

Target Population:

1. Patients who had attended the pediatric emergency department of Mohamed VI University Hospital Oujda.
2. Patients hospitalized in the pediatric department of Mohamed VI University Hospital, Oujda, Morocco.
3. Students from educational institutions.

Inclusion Criteria:

1. Age between 7 and 17 years old.
2. Ability to self-assess.

Exclusion Criteria:

1. Eating disorders secondary to an organic cause, whether digestive or extra-digestive.
2. Children who refused to participate in the survey.

Results:-

The questionnaires for screening the eating disorders, EDY-Q and EAT-26 helped identifying 102 children (19% out of 520) who may suffer from eating disorders.

The average age of the children was 13 years with extremes ranging from 7 to 17 years. We observed a clear predominance of females (77,5%, 79 girls) compared to males (22,5%, 23 boys). The sex ratio was 2.5, and the most affected age was 13 to 17 years. The vast majority of children came from families with more than one child (91%), and nearly half of them were firstborns (49%) (Table 1).

The children of our series were from a high socioeconomic background in 28% of cases, moderate in 62% of cases, and 10% from a low socioeconomic status. The educational level is reported to be poor and it was so in 18,6% of cases, average in 47% and good in 25.5%, and only 9% considered the performance as excellent (Table 1).

We used body mass index (BMI) to classify the children with the following findings; 26% who were under weight (27 cases), 14% over weight (14 cases), 2% obesity (2 cases) while 58% had normal weight (59 children).

Among the children in our series, 47% were affected by a family event, including 23.5% who were victims of family conflicts, 15% whose parents were divorced, 7% who were victims of parental neglect, especially following the arrival of a new sibling, and 2% who had experienced the death of a close relative (Table 2).

Moreover, attention towards screens and media lasting more than many hours was observed in 58% of the children (Table 2).

About the school climate, it is pointed out that the children identified through the two questionnaires are victims of school bullying and feelings of insecurity at school, 23,5% of them. 39% of the children suffered from study-related stress, and 7% reported they had no sense of belonging or could hardly fit into the school environment (Table 2).

Nearly half of the children, 47% to be precisemostly girls in 36% of cases, were perceived as vulnerable to thinness ideas, first because of social pressure that favours thinness next because of dissatisfaction with body size.

Following the use of the two questionnaires, susceptibility to anorexia nervosa was noted in 22% of cases, bulimia in 13%, and pica in 19% (including 2 cases of trichophagia and trichotillomania, one case of pagophagia, and the rest geophagia and chalk ingestion). Avoidant/Restrictive Food Intake Disorder (ARFID) was observed in 44% of cases, with 29% exhibiting selective eating and 15% showing food avoidance.

Moreover, we did not detect any susceptibility to binge eating disorder or functional dysphagia among the children in our sample.

On a statistical level, the study of correlation between susceptibility to developing eating disorders (EDs) and associated factors showed that age, female sex, family and school environment, excessive media exposure, and bodily changes during puberty were significantly associated with the risk of developing an ED. However, the results showed that the socioeconomic status and academic performance were not significantly related to this risk. It should be noted that correlation results are considered significant if $p < 0.05$ (Table 3).

Table 1:- The sociodemographic characteristics of the children.

Characteristics	N (%)
Age* (years)	13 (07-17)
Sex	
- Male	- 23 (22.5)
- Female	- 79 (77.5)
Schoollevel	
- Low	- 18 (18.6)
- Medium	- 48 (47)
- Good	- 26 (25.5)
- Excellent	- 9 (9)
Socio-economiclevel	
- High	- 29 (28)
- Medium	- 63 (62)
- Low	- 10 (10)
Siblings	
- Present	- 93 (91)
- Absent	- 9 (9)
Rank	
- Elder	- 50 (49)
- 2 nd	- 31 (30.4)
- 3 rd	- 19 (18.6)
- 4 rd or more	- 2 (2)

*expressedbyaverage (extremes).

Table 2:- Characteristics of family and school climate.

Family environment	N (%)
- Parental conflicts	- 24 (23.5)

- Parental divorce	- 15 (15)
- Parental negligence	- 7 (7)
- Death of a family member	- 2 (2)
Overexposure to the media	- 59 (58)
School climate	
- Schoolbullying	- 24 (23.5)
- Stress related to studies	- 40 (39)
- Difficult adaptation	- 7 (7)

Table3:- Study of the correlation between the susceptibility to develop EDs and psychosocial factors.

Variables	EDY-Q / EAT26 Positive (n = 102)	EDY-Q / EAT26 Négative (n = 418)	P-value
Average age (years)	13	11.5	0.012
Sex(female)(n)	79	184	0.002
Socio-economic level(low) (n)	10	33	0.30
Family climate(bad) (n)	47	79	0.007
School climate(bad) (n)	67	92	0.004
Level of schooling (low) (n)	18	67	0.25
Overexposure to the media(n)	59	87	0.003
Bodily changes (n)	47	-	0.003

Discussion:-

The prevalence of eating disorders (Eds) found in the present study is 19% with a clear female predominance, which is consistent with the findings of two studies conducted at Morocco and Spain [7,8]. A cross-sectional study conducted on 80 Moroccan adolescents with a mean age of 16 years confirmed the presence of an ED severity using the SCOFF questionnaire with a prevalence of 37,5% [9]. Another similar study conducted in France in 2013 included 3344 students from middle schools; the incidence of eating disorders (Eds) reported was 34,9% [10].

A cohort study PEDIANUT based in the Seine-Maritime found an eating disorder incidence of approximately 11,4% out of the pediatric population aged between 0 and 18 years old [11].

Regarding family climate and parental profile of the children, the findings of our series show a statistically significant link between the presence of Eds and the variables explored and as supported by other study showing that family separation has a significant association with EDs [12, 13].

There are various factors that are postulated to cause an eating disorder, and body dissatisfaction is one that is widely considered to be significant in etiology[14].

The findings of this study reveal that dissatisfaction with a body image was detected in half of the children (47%), predominantly observed in girls in 36% of cases. Looking at the study by Bartsch (2007), it was found that more than half of the surveyed middle school students were either very concerned with their physical appearance or a particular body part. Their main concern seems to be fear of gaining weight or not being thin enough [15]. Furthermore, because parents play a role of relaying culture attachments to a child, any remarks about weight and appearance that are negative are likely to cause body dissatisfaction and encourage a child towards a desire to lose weight [14, 16].

Research analysis has shown that comments by peers concerning eating behaviors and weight lead to eating disorders [17].

The recent counterpart meta-analysis published in JAMA Pediatrics in 2023 comprises 32 studies enrolled 63,000 children and adolescents, 6-18 years in total, from 16 countries. The results provided a scary outlook for children and youths, whereby one in every five children were discovered to be suffering from eating disorders at 22%. Since a lot of research encompasses gender, girls were found to be more affected with approximately 30% of them suffering from eating disorders. Moreover, the study confirmed the association of disorder eating, age and body mass index, with the observation that these factors are on the rise [18].

Statistics regarding mental health disorders in puberty in France in 2019 revealed that 25% of the adolescent girls suffer from an eating disorder, while 20% of the boys have the same problem; thus, indicating that eating disorders are more prevalent among girls than boys [19].

Like any sort of survey study, it is necessary to notice some definite limitations of this investigation: In some cases respondents either refused answering the questions or were not present at the time when the questionnaires had been filled in, some of the questionnaires had been filled incompletely and, thus, it was impossible to obtain additional information from the participants.

Conclusion:-

Summing up, the findings of this study highlight the significant rate of susceptibility of developing eatings disorders (EDs), the presence of several factors determining the onset of these disorders, the harmful consequences and negative outcomes can this entity bring constituting a veritable public health issue. On the same note, a comprehensive knowledge of this illness combined with methodical screening would be a useful strategy to stop the spread of this plague

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