

Research Article

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Relationship of leisure time activities and psychological distress in adolescent school children

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Abstract

Background: With the ever-growing competition in every field throughout the world, the academic pressure on students is increasing with a decrease in leisure time, which can result in psychological stress. The prevalence of psychological distress varies between countries. This study aimed at finding out the prevalence of psychological distress, and the association of the degree of distress with the availability of leisure time as well as leisure time activities.

Materials and methods: This is a cross-sectional questionnaire-based observational study among students studying in standard 8th till standard 12th, using Kessler Psychological Distress Scale (K-10). A score of 10-19 signifies a student is likely to be well, a score between 20 & 24 signifies a student is likely to have a mild disorder, a score between 25 & 29 signifies a student is likely to have a moderate disorder, while a score between 30 & 50 signifies student likely to have a severe disorder. The data was analyzed using SPSS version 24. Descriptive statistics, Chi-square test, and Odds ratio as appropriate were used to compare variables with p value less than 0.05 taken as significant. **Results:** Out of 219 respondents, 150 (68.5%) were males and 69 (31.5%) were females. The median leisure time was 2-3 hours ranging between 1- 6 hours. 57.5% of students played outdoor games and 46.5% preferred indoor games. Psychological distress was seen

Keywords

Leisure time,
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activities,
Psychological
distress,
Adolescent children

in 27.3% of students and the majority were mild (19.1%). Moderate distress was seen in 2.7% and severe distress was seen in 5.4% of students. The distress was more seen in students with less leisure time, but it was not statistically significant ($p=.829085$). Furthermore, students who had pure indoor leisure time activities were significantly more likely to be distressed as compared to those with outdoor activities ($p=.001$). Furthermore, severe psychological distress was significantly commoner in children who played indoor games vs those who played outdoor games across all ages of students ($p=.0074$).

When compared between girls and boys, the girls were older [mean age 12.65 ± 1.4 vs 13.14 ± 0.62 ; $p<0.5$] and preferred indoor activities ($p=.037$) but the amount of leisure time did not differ between groups. The prevalence of psychological distress did not differ between boys and girls ($p=.067$).

Conclusion:

The psychological distress in students is mostly mild and it mainly depends on the type of activities done during leisure time. Doing some form of outdoor activity during leisure time is associated with less likelihood of psychological distress. There is an urgent need to sensitize the parents, school health counselors, and pediatricians on the issue of psychological distress among school children.

Background

Adolescence is a phase characterized by the development in all aspects of an individual's life, that necessitates new psychological adaptations. Changes in duties and interpersonal interactions, as well as increased educational obligations, are all possible stresses during this phase of change and transition. Leisure time is 'the combination of free time with the expectation of preferred experience', whereby the 'preferred experience' is personally defined [1,2]. How people spend their leisure time is an important factor in maintaining psychological health [3]. With the ever-growing competition in every field throughout the world, the academic pressure on students is increasing. As a result, leisure time appears to be dwindling in tandem with growing academic requirements, particularly among children in higher grades, ultimately leading to psychological stress.

We define enjoyable leisure activities broadly as the pleasurable activities that individuals engage in, voluntarily when they are free from the demands of work or other responsibilities. These might include hobbies, sports, socializing, or spending time in nature. The prevalence of psychological distress varies among different countries. 57% in high-income countries and between 10-20% in middle and low-income countries [4,5,6]. Studies from India show the

prevalence of psychological distress to be 13-45% [7,8,9]. Different studies have also shown an inverse relationship between psychological stress and the availability of leisure time [9,10]. In a study in Abu Dhabi on school psychology, a Mindfulness-Based Intervention has been advocated for coping with psychological distress [11]. No study has been reported in Ras al Khaimah on this aspect yet. We intend to find out the prevalence of psychological distress, and the association of the degree of distress with the availability of leisure time as well as leisure time activities. The results will help to sensitize the parents, school health counselors, and pediatricians on the issue of psychological distress among school children.

For adults, children, and adolescents alike, leisure time is incredibly vital. It provides a valuable setting for the development of social and communication skills, as well as tolerance, self-esteem, self-confidence, and creative expression. An individual's basic needs, such as the need for enjoyment, independence, a sense of belonging, and self-actualization, can be met during their leisure time. A person gets alleviated of accumulated tension when their demands are met.

Activities in leisure time are intrinsically motivated; young people engage in them because of their personal enjoyment, and they select those

activities according to their personal choice. It is important to help them and guide them to find activities that will provide them with inner satisfaction, but also encourage their personal growth and development.

Leisure activities may facilitate adolescents' developmental needs for social relatedness and can contribute to one's identity as an important and valued member of a group[12]. In such activities, adolescents have the opportunity to be with other people, cooperate with them, and feel respected and liked.

Various risk factors for psychological distress have been identified across studies. Higher rates of psychological discomfort are linked to increasing age and feminine gender. Poverty, familial dysfunction, and socioeconomic disadvantage have all been linked to teenage mental distress. Violence, abuse, and academic stress have all been linked to a higher risk of suicide. Adolescents who are experiencing psychological distress are more likely to utilize substances like alcohol and cigarettes. The most frequent mental health issues among teenagers are depression and anxiety. Depressive symptoms are reported by 20% to 50% of adolescents. Suicide is one of the most agonizing consequences of psychological anguish.

Although researchers have indicated a positive association between leisure participation and well-being, there are a number of studies that suggest the picture is more complicated. However, leisure time is also a space suitable for a number of negative peer influences [13]. To fully comprehend the complexities of leisure participation's impact on psychological well-being, several factors must be considered, including both the leisure type and the mediating effect of students' leisure satisfaction on the relationship between leisure participation and students' well-being over time[14]. Parents and educators will be better able to comprehend their children's mental health if they consider both the direct and indirect consequences of leisure participation.

Aims and objectives

1. To determine how much leisure time students are getting and what activities they are engaged in during their leisure time.
2. To study the prevalence of psychological distress among these children [aged 13-18]
3. To determine if there is a correlation between the type of activities engaged during leisure time and distress.

Methodology

This was a cross-sectional questionnaire-based observational study that was conducted among the students of two public schools at Ras al Khaimah, United Arab Emirates, from the 8th to 12th standard between October 2019 and March 2020. Consecutive sampling was used to include the students in the given age group.

The sample size was calculated using Sample Size Calculator software available at Calculator.net. In this study, the significance level () for p-values was set at 5%; population proportion at 50%, population size at 400, and confidence intervals (CI) at 95%. This calculation provided the minimum required sample size (n = 197) that needed to be recruited to generate adequately sized subgroups to ensure the statistical robustness of analyses. Considering the number of refusals and non-responders of around 11%, the sample size was fixed at 219 respondents.

After due ethical clearance [RAKMHSU-REC-04-2019-UG-M], and due written permission from the principal of the schools, the students were approached. Our team visited the schools and explained the aims and objectives of our research to students who verbally agreed to be a part of the study. Students were informed that the survey was anonymous and had no impact on their school work. The children were then instructed on the consent process and how to fill out the questionnaire by explaining the meanings of the questions and clarifying their doubts. The link to the online questionnaire (with an incorporated consent form) was then sent to their

parents through email, to ensure parental consent and participation. Responses of students with known chronic illnesses or psychiatric illnesses were excluded from the analysis.

Socio-demographic profile (age, gender, area of residence) was recorded using a checklist. A questionnaire incorporating a Kessler Psychological Distress Scale (K-10) was used for the collection of responses from the students [15] [Table 1]. Scores were interpreted as mild distress if between 20 and 24, moderate if 25-29, and severe if 30-50. A student with a score of 10-19 however was considered to be well [16]. A question on known chronic or psychiatric illness

was included to identify responses to be excluded. For the purpose of this research, all outdoor games, and sports activities (e.g running, cycling, swimming, and physical games played indoors like table tennis) were considered outdoor activities. Similarly, online/computer games, talking over the phone, talking with friends, painting, singing, dancing, and games like chess, and carrom were considered indoor activities. The data was analyzed using Statistical Package for the Social Sciences (SPSS) version 24. Descriptive statistics, Chi-square test, t-test, and odds ratio as appropriate were used to compare among variables with a p-value less than 0.05 taken as significant.

Table1: Questionnaire incorporating K10 [15]

**Ref No: Age: Sex: DOB: Class: Curriculum:
Address for correspondence and Contact No-**

History of chronic illness / on regular medication (Diabetes, Hypertension, endocrine problems, Congenital/acquired heart diseases, Rheumatologic diseases, Chronic respiratory problems including asthma, Genitourinary problems, allergies...)

Any other known diseases-

Leisure time and activity-

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Leisure time per day							
Leisure activities							

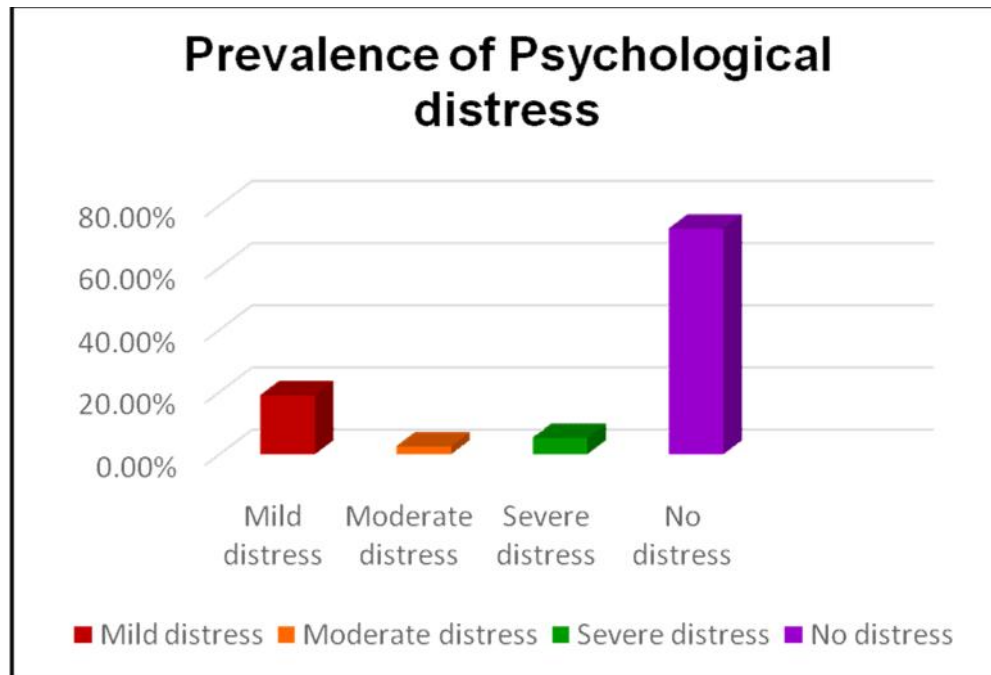
K10 Test

These questions concern how you have been feeling over the past 30 days. Tick a box below each question that best represents how you have been.

1. During the last 30 days, about how often did you feel tired out for no good reason?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time
2. During the last 30 days, about how often did you feel nervous?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time
3. During the last 30 days, about how often did you feel so nervous that nothing could calm you down?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time
4. During the last 30 days, about how often did you feel hopeless?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time
5. During the last 30 days, about how often did you feel restless or fidgety?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time
6. During the last 30 days, about how often did you feel so restless you could not sit still?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time
7. During the last 30 days, about how often did you feel depressed?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time
8. During the last 30 days, about how often did you feel that everything was an effort?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time
9. During the last 30 days, about how often did you feel so sad that nothing could cheer you up?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time
10. During the last 30 days, about how often did you feel worthless?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time

- Questionnaire had 3 components [Demography, leisure time and activities, K10]
- 5 point scale [None=1, A little=2, Some=3, Most=4, All of the time=5]
- Likelihood of having a mental disorder (psychological distress)
- 10 - 19 Likely to be well; 20 - 24 Likely to have a mild disorder; 25 - 29 Likely to have a moderate disorder; 30 - 50 Likely to have a severe disorder; 30 - 50 Likely to have a severe disorder

Results



Graph 1-Prevalence of psychological distress among adolescent school children

A total of 226 children responded and filled up the questionnaire. 7 responses were excluded due to the presence of diabetes, and autoimmune diseases in the participants. This study included 219 children, out of which 150 (68.5%) were males and 69 (31.5%) were females. Ages ranged from 13-18 years with a mean (\pm SD) of mean age = 14.56 ± 1.79 years and a median age of 13 years. Students of classes 8th to 12th participated in the study. The majority of students belonged to class 8 ($n=79$; 36%) followed by class 11 and the least belonged to class 10 (9.13%) [Table-2].

The median leisure time was 2-3 hours ranging between 1- 6 hours. 57.5% of students played outdoor games and 46.5% preferred indoor games. Psychological distress was seen in 27.3% of students and the majority were mild (19.1%). Moderate distress was seen in 2.7% and severe

distress was seen in 5.4% of students [Graph-1]. The distress was more seen in students with less leisure time, but it was not statistically significant ($p=.829085$). Students who had pure indoor leisure time activities were significantly more likely to be distressed as compared to those with outdoor activities ($p=.001$). Furthermore, severe psychological distress was significantly commoner in children who played indoor games vs those who played outdoor games across all ages of students ($p=.0074$). When compared between girls and boys, the girls were younger [mean age 13.79 ± 1.32 vs 14.92 ± 1.87 ; $p<0.05$] and preferred indoor activities ($p=.037$) but the amount of leisure time did not differ between groups [Table-3]. The prevalence of psychological distress did not differ between boys and girls ($p=.067$).

Table 2 – Leisure time and type of activity according to the year of study

Year of study (n)	Hours of leisure time (Mean± SD)	Type of leisure activity	Score (Mean± SD)	Any psychological distress* [n=total] (%)	p-value
8 (79)	3.18 ± 2.57	Indoor-39 Outdoor-30	17.64 ± 5.45	18 (13+0+5) (22.7)	chi-square statistic is 13.96 <i>p</i> = .0074
9 (32)	3.67 ± 2.57	Indoor-13 Outdoor-19	16.25 ± 4.93	6 (5+0+1) (18.75)	
10 (20)	2.62 ± 1.11	Indoor-14 Outdoor-6	19 ± 6.61	7 (2+2+3) (35)	
11 (53)	3.30 ± 1.87	Indoor-24 Outdoor-29	15.79 ± 5.45	11 (7+1+3) (20.7)	
12 (35)	3.75 ± 1.88	Indoor-27 Outdoor-8	15.79 ± 5.45	18 (15+3+0) (51.4)	

[*Any psychological distress=mild distress+ moderate distress+ severe distress]

Table 3- Gender differences in type of activity and psychological stress

Variable	Boys (n=150)	Girls (n=69)	<i>p</i> -value
Age (Mean±SD)	14.92± 1.87	13.79± 1.32	<i>t</i> = -4.501; <i>p</i> =.0001
Hours of leisure time	3.46±1.94	3.32±2.92	<i>t</i> = 0.3631; <i>p</i> =.717 NOT significant
Type of leisure activity	Outdoor-77 Indoor-73	Outdoor-25 Indoor-44	4.3315. The <i>p</i> -value is .037414
Chronic conditions	4 (allergies)	2 (1 allergy and 1 asthma)	
Long-term Medications	None	None	
Psychological distress			Mean score-
Mild	33	9	Boys= 16.76 ± 5.21
Moderate	3	3	Girls= 18.30 ± 5.95
Severe	6	6	<i>t</i> = 1.8485; <i>p</i> = .067
No distress	108	51	NOT significant

The most common indoor activity was television and online games whereas outdoor activities were football followed by cricket and cycling.

Discussion

Mental health problems, such as depression and anxiety, have been recognized as major global public health concerns. Regular physical activity has been proven to have therapeutic benefits, such as treating psychiatric illnesses, supporting brain injury recovery, and resisting neurodegenerative diseases[17-20]. The advantageous effects of activity on brain functions have been attributed to increased capacities of metabolism reserve and

antioxidation [21,22]. Furthermore, regulations of the secretion of neurotrophic factors, vasculotropic factors, inflammatory mediators, and neurotransmitters are also involved in exercise's influence on brain function[23]. This is one of the studies on the prevalence of psychological distress in the United Arab Emirates among the students of Public schools from 8th to 12th standard. The total number of participants in our study was 219, out of which 150 (68.5%) were males and 69 (31.5%) were females.

The average amount of leisure time was between 2-3 hours [ranging from 46 minutes to 7 hours]. Outdoor sports were favored by 57.5% of kids, while indoor activities were preferred by 46.5 %, with about 4% of students preferring to spend equal time in both types of activities. The prevalence of psychological distress in our sample was 27.3%. In a similar study, Jaisoorya *et al* found that 21.8 % of the participants were distressed, whereas Bhad *et al* found that 51.5 % of the participants were distressed, which is much higher. Among them 19.1% were mildly distressed, 2.7% had moderate and 5.4% had severe psychological distress. In our study, moderate distress was found less common than severe distress, compared to 27.3 % mildly distressed, 14.3 % moderate, and 9.5 % severe in the Bhad *et al* study.

The prevalence reported in research varies from 8% to 57 percent in high-income nations, and from 10% to 20% in low- and middle-income countries. According to research from India, rates range from 13% to 45%. Various methodological techniques, such as different definitions of psychological distress and different evaluation tools, might explain the disparities in prevalence estimates (e.g. structured interviews, self-report, self-made items). Different exposures to risk and protective variables between nations, as well as cultural settings of manifestation of these problems, have been suggested as potential reasons for this variation.

Students who spent less leisure time showed severe distress compared to those who spent more time, although the difference was not statistically significant ($p=.82$). Our findings are comparable to those of earlier studies by Teychenne *et al* and Verma *et al*, who found that physical exercise reduces psychological distress and that more leisure time is related with decreased distress, respectively. In contrast to our study, Bhad *et al* found a statistically significant connection between the prevalence of severe psychological distress and leisure time ($p=0.023$). Those who played Indoor games experienced more psychological anguish than those who played outdoor games ($p=.001$). Similar to our

study, Bhad *et al* found that children who played indoor activities experienced more severe psychological distress than those who played outdoor games ($p=0.01$). Passive activities have been linked to a lower level of well-being in studies. They discovered that lower levels of self-reported physical activity and greater levels of sedentary behavior were associated with lower levels of well-being on psychological strengths.

Conclusion

Leisure time appears to be decreasing in children as they go to higher classes due to academic pressure. Physical activity is associated with decreased risk of mental disorders and an increase in life expectancy. Mild psychological distress is more common among students and playing outdoor activities during leisure time improves mental health. There is an urgent need to sensitize the parents, school health counselors, and pediatricians on the issue of psychological distress among school children. This study has indicated the importance of leisure participation in improving the psychological well-being of adolescents. The findings from this study have important implications for education and social policy.

These results suggest that teenagers feel happy and satisfied when they express their potential vitality while engaged in active leisure. Due to academic demands or rules for school conduct, students often find that in their academic setting, there is little chance to express themselves, engage in various activities, or have little time to interact freely with their peers. Therefore, knowing the relevance of leisure participation on students' well-being is the need of the hour. Thus, leisure influences adolescents to gain social, behavioral, athletic, and scholastic competencies, which in turn boosts mental health.

The main limitation of our study is that it relied on students' self-reported responses to determine psychological distress. There was no comprehensive diagnostic interview.

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Declaration

All the authors declare that there is no conflict of interest

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