

adolescents receiving regimens that contained abacavir in Africa, found a pooled incidence of hypersensitivity reaction to be 2.2% (95% CI 0.4 to 5.2), discontinuation of abacavir to be 10.9% (95% CI 2.1 to 24.3) and adverse events other than hypersensitivity reaction to be 21.5% (95% CI 2.8 to 48.4). But when they analysed only the randomized controlled trials with comparative data, there was no increase in the risk of hypersensitivity reaction [pooled RR 1.08; 95% CI 0.19 to 6.15].

In India, Chakravarty, *et al.* [8] reported hypersensitivity in 7.9% children receiving abacavir-based therapy. Out of 8 children who developed hypersensitivity to Abacavir, 2 carried the HLA-B*5701 allele.

We conclude that Abacavir-based regimen appears to be effective in HIV- infected children and adolescents, with no major side effects.

Contributors: PP, DKS: designing the study, analysis of data and writing the manuscript; RR, AS: data collection and critical evaluation of the manuscript; MM: collection of data, analysis and writing of the manuscript.

Funding: None; *Competing interest:* None stated.

**PRINCE PAREEK, DK SINGH*, RUCHI RAI,
ANUBHA SRIVASTAVA AND MANISHA MAURYA**
*From Department of Pediatrics, MLN Medical College,
Allahabad, Uttar Pradesh, India.
drksingh1999@gmail.com

REFERENCES

1. World Health Organization. Consolidated Guidelines on the Use of Antiretroviral Drugs for Treatment and Preventing HIV Infection. Recommendations for a Public Health Approach. 2nd edition 2016. WHO. Available from: <http://www.who.int/hiv/pub/arv/arv-2016/en>. Accessed September 27, 2018.
2. National AIDS Control Organization Guidelines 2013. Ministry of Health and Family Welfare, Government of India. Available from: www.naco.gov.in/sites/default/files/Pediatric. Accessed September 25, 2015.
3. Clay PG. The Abacavir hypersensitivity reaction: a review. *Clin Ther.* 2002; 24:1502-14.
4. Technau KG, Lazarus E, Kuhn L, Abrams EJ, Sorour G, Strehlau R, *et al.* Poor early virologic performance and durability of abacavir-based first-line regimens for HIV-infected children. *Pediatr Infect Dis J.* 2013; 32:851-5.
5. Johnson VA. Abacavir. *In:* Eds Dolin R, Masur H, Saag M, editors. *AIDS Therapy.* 3rd ed. Philadelphia: Churchill Livingstone, Elsevier 2008; p. 207-24.
6. Cruciani M, Mengoli C, Malena M, Serpelloni G, Parisi SG, Moyle G, *et al.* Virological efficacy of abacavir: systematic review and meta-analysis. *J Antimicrob Chemother.* 2014; 69:3169-80.
7. Jesson J, Dahourou DL, Renaud F, Penazzato M, Leroy V. Adverse events associated with abacavir use in HIV-infected children and adolescents: a systematic review and meta-analysis. *Lancet HIV.* 2016;3:e64-75.
8. Chakravarty J, Sharma S, Johri A, Chourasia A, Sundar S. Clinical abacavir hypersensitivity reaction among children in India. *Indian J Pediatr.* 2016; 83:855-8.

Relationship of Leisure Time Activities and Psychological Distress in School Children

This questionnaire study on 400 school children found that severe psychological distress using the K 10 scale was seen in 38 (9.5%), and 162 (40.5%) had less than 2 hours of leisure time daily. The prevalence of severe distress was lower in children who had daily time with parents and daily leisure time.

Keywords: *Adolescents, Depression, Physical activity.*

Leisure time appears to be decreasing with increased academic pressures on urban children, especially after Class 8. In this study, we aimed to assess the current levels of leisure time available to school children, and its relation to levels of psychological distress.

This was an observational, questionnaire-based study conducted in an urban English-medium school in Indore between November 2017 and April 2018. Inclusion criteria were children studying in class 8-10. Children with known chronic illnesses were excluded. The study protocol was cleared by the Institutional ethics committee. Permission was obtained from the principal of the school for conducting the study. Parental consent and students' assent was also obtained.

The children were instructed on how to fill the questionnaire, meaning of questions were clarified, and they were given 20 minutes to complete the questionnaire. Details of the student (age, sex, class, family and occupation of parents), coaching, frequency and duration of free time, type of leisure activities, amount of free time with either parent and questions of the Kessler Psychological Distress Scale (K10) [1,2] were recorded in English. Scores of 20-24, 25-29 and ≥ 30 were considered

TABLE I CLASS-WISE AND GENDER-WISE DISTRIBUTION OF PSYCHOLOGICAL DISTRESS IN SCHOOLCHILDREN, INDORE 2017-18 (N=400)

	<i>Normal</i>	<i>Mild distress</i>	<i>Moderate distress</i>	<i>Severe distress</i>
Overall				
Girls (n=173)	75 (43.3)	45 (26)	31 (17.9)	22 (12.7)
Boys (n=227)	119 (52.4)	64 (28.2)	28 (12.3)	16 (7)
Class 8 (n=130)	61 (46.9)	40 (30.8)	22 (16)	7 (5.5)
Girls (n=56)	26 (46.4)	16 (28.6)	9 (16)	5 (8.9)
Boys (n=74)	35(47.3)	24 (32.4)	13 (17.6)	2 (2.7)
Class 9 (n=187)	105 (56.1)	42 (22.5)	19 (10.2)	21 (11.2)
Girls (n=81)	41 (50.6)	18 (22.2)	9 (11.1)	13 (16)
Boys (n=106)	64 (60.4)	24 (22.6)	10 (9.4)	8 (7.5)
Class 10 (n=83)	28 (33.7)	27 (32.5)	18 (21.7)	10 (12.1)
Girls (n=36)	8 (22.2)	11 (30.5)	13 (36.1)	4 (11.1)
Boys (n= 47)	20 (42.6)	16 (34)	5 (10.6)	6 (12.8)

All values in number (%).

mild, moderate and severe psychological distress, respectively. The association of degree of psychological distress with leisure time activities and other factors were analyzed using chi square test and odds ratio, as appropriate.

We included 400 children (227 boys) in the survey. Ages ranged from 12-16 years with 130 (32.5%), 187 (46.8%) and 83 (20.7%) studying in class 8, 9 and 10, respectively. Almost half (196, 49%) of the children belonged to a joint family, and 296 (74%) had mothers who were homemakers. Majority (332, 83%) children attended coaching classes after school. The details of leisure time in children are given in **Web Table I**. The commonest indoor activity was television and outdoor was badminton.

A normal K10 score was seen in 194 (48.5%) students. Mild psychological distress was seen in 109 (27.3%), moderate in 57 (14.3%) and severe in 38 (9.5 %) students. Severe psychological distress was more common in girls (12.7%) than boys (7%) (OR 1.92, 95% CI 0.97, 3.7; $P=0.6$) (**Table I**). The prevalence of severe distress in children with daily, alternate day or once-a-week free time was 8.6%, 9.6% and 11.7%, respectively. There was a statistically significant association between prevalence of severe psychological distress *versus* time spent with parents (OR 2.7, 95% CI 1.14, 6.4; $P=0.023$) with only 5.9% having severe psychological distress, if they spent time daily with their parents. There was no statistically significant difference in prevalence of severe psychological distress with type of family or occupation of mother. However, children with businessmen as fathers had statistically higher rates of severe distress (11.4% *vs*

5.9% ($P=0.047$). Severe psychological distress was commoner in children who played indoor games (13%) *vs* those who played outdoor games (4.8%) ($P<0.01$).

Earlier studies from India have reported psychological distress in 13-45% school children [3]. The prevalence across high-income countries varies from 8-57%, and for low- and middle-income countries, it varies from 10-20% [4,5]. In a large recent study conducted in 12-19 years olds using the K10 scale in Kerala, psychological distress was reported in 20% [6]. Prevalence of mild, moderate and severe distress was 10.5%, 5.4% and 4.9%, respectively. In this study, older age, not living with both parents, and urban residence were significantly associated with psychological distress. A study of 100 adolescents from Chandigarh has also shown an inverse relationship between amount of leisure time and psychological distress using the Child Behavior Checklist [7]. Physical activity has also been shown to be beneficial in reducing psychological distress [8].

The main limitation of our study is that assessment of psychological distress was based on students' self-reported responses. No detailed diagnostic interview was conducted. However, this study highlights the need to sensitize pediatricians and parents to the issue of psychological distress among adolescents, and the importance of allocating time for leisure.

Contributors: PB: acquisition and analysis of data; AA: conception and design of the study and critical review of intellectual content; GRP: conception and design of the study, analysis and interpretation of data, drafting the manuscript.

Funding: None; **Competing interests:** None stated.

PALLAVI BHAD, ALPANA AWASTHI AND

GOURI RAO PASSI*

*Department of Pediatrics,
Choithram Hospital and Research Centre,
Indore, Madhya Pradesh, India.
gouripassi@gmail.com

REFERENCES

1. Kessler RC, Andrews G, Colpe LJ, Hiripi E, Mroczek DK, Normand SL, *et al.* Short screening scales to monitor population prevalence and trends in non-specific psychological distress. *Psychol Med.* 2002;32:959-76.
2. Chan SM, Chak T, Fung T. Reliability and validity of K10 and K6 in screening depressive symptoms in Hong Kong adolescents. *Vulnerable Child Youth Stud.* 2013;9:75-85.
3. Kumar V, Talwar R. Determinants of psychological stress and suicidal behavior in Indian adolescents: a literature review. *J Indian Assoc Child Adolesc Ment Health.* 2014;10:47-68.
4. Kieling C, Baker-Henningham H, Belfer M, Conti G, Ertem I, Omigbodun O, *et al.* Child and adolescent mental health worldwide: evidence for action. *Lancet.* 2011;378:1515-25.
5. Patel V, Flisher AJ, Hetrick S, McGorry P. Mental health of young people: A global public-health challenge. *Lancet.* 2007;1369:1302-13.
6. Jaisoorya TS, Geetha D, Beena KV, Beena M, Ellangovan K, Thennarasu K. Prevalence and correlates of psychological distress in adolescent students from India. *East Asian Arch Psychiatry.* 2017;27:56-62.
7. Verma S, Sharma D, Larson RW. School stress in India: Effects on time and daily emotions. *Int J Behav Dev.* 2002;26:500-8.
8. Teychenne M, Ball K, Salmon J. Physical activity and likelihood of depression in adults: A review. *Prev Med.* 2008;46:397-411.

WEB TABLE I EVALUATION OF FREE TIME IN SCHOOL CHILDREN
(N=400)

<i>Frequency of free time</i>	<i>No. (%)</i>
Daily	208 (52)
Alternate day	124 (31)
Weekends	68 (17)
<i>Amount of free time</i>	
1-2 hours	162 (40.5)
2-3 hours	134 (33.5)
3-4 hours	82 (20.5)
>4 hours	22 (5.5)
<i>Type of leisure activity</i>	
Indoor	169 (42.3)
Outdoor	126 (31.5)
Both	105 (26.3)
<i>Time spent with parents</i>	
Daily	238 (59.5)
Alternate day	71 (17.8)
Weekends	69 (17.3)
Nil	22 (5.5)
