The Teen Addiction Severity Index Around the Globe: The Tower of Babel Revisited

Yifrah Kaminer, MD, MBA

ABSTRACT. The objectives of this article are, first, to provide a brief review of screening and assessment of adolescents substance use and substance use disorders; second, to describe the work done with the Teen Addiction Severity Index (T-ASI) in different countries; and third, to address challenges and opportunities in order to improve international collaboration between health professionals responsible for providing substance abuse services for youth and families. It is recommended that the International Society of Addiction Medicine (ISAM) sponsor and coordinate the efforts to disseminate the benefits accrued from already developed assessment and treatment of substance use disorders of youth into different countries and regions. Addiction professionals representing a myriad of cultures, ethnic, and racial groups would be encouraged to translate the assessments into relevant languages and dialects and with the support of the original authors conduct reverse translation and then test the psychometric properties before a wider use commences.

KEYWORDS. Adolescent substance abuse, assessment, Teen Addiction Severity Index, T-ASI

Everyone on earth had the same language and the same words. As they migrated from the east, they came upon a valley in the land of Shinar and settled there. . . . And they said, "come, let us build a city, and a tower with its top in the sky, to make a name for ourselves, else we shall be scattered all over the world." The Lord came down to look at the city and tower that man has built, and the Lord said. "If, as one people with one language for all, this is how they have begun to act, then nothing they may propose to do will be out of their reach. Let us then go down and confound their speech, so that they shall not understand one another's speech." Thus the Lord scattered them from there over the face of the whole earth. (Genesis 11:1–9)

Yifrah Kaminer is affiliated with the Alcohol Research Center, Department of Psychiatry, University of Connecticut Health Center, Farmington, CT.

Address correspondence to: Yifrah Kaminer, MD, MBA, Professor of Psychiatry, Alcohol Research Center, Department of Psychiatry, University of Connecticut Health Center, Farmington, CT 06030-2103 (E-mail: kaminer@psychiatry.uchc.edu).

List of international collaborators and contact information: Patricia Bijttebier, PhD, University of Leuven, Leuven, Belgium (E-mail: Patricia Bijttebier@psy.kuleuven.be). Roberto Secades Villa, PhD, University of Oviedo, Spain (E-mail: secades@uniovi.es). Rosa Diaz, PhD, Instituto de Neurociencias, Barcelona, Spain (E-mail: diaz@clinic.ub.es). Pablo Dragatto, PhD, Buenos Eires, Argentina (E-mail: dragattofrank@uolsinectis.com.ar). Maria-Lucia Formigoni, PhD, University of Sao Paulo, Brazil (E-mail: mlformig@psicobio.epm.br). Nael Hasan, MD, Behman Hospital, Cairo, Egypt (E-mail: nael68@gmail.com). Dafne Tamar Gurol, MD, Istanbul, Turkey (E-mail: defnegurol@hotmail.com). Carlos Hernandez-Avila, MD, PhD, University of Connecticut, Farmington, CT (E-mail: hernand@psychiatry.uchc.edu). Solja Niemela, MD, Turko, Finland (E-mail: solnie@utu.fi). Gal Shoval, MD, Tel Aviv University, Israel (E-mail: shovgal@post.tau.ac.il). Dr. Augusto Consoli, University of Torino, Italy (E-mail: augusto.consoli@tin.it).

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INTRODUCTION

Substance use, abuse, and dependence by youth remain a critical and prevalent public health concern around the world. The majority of adolescents who use drugs and alcohol do not progress to a substance use disorder (1). Yet, the consequences of substance use are associated with leading causes of adolescent mortality and morbidity including motor vehicle accidents, suicidal behavior, violence, delinquency, drowning, and unprotected sexual behaviors that increase the risk for unplanned pregnancy and sexually transmitted diseases.

Accurate screening for substance use in adolescents is necessary to meet the clinical challenge of identifying youth that may need a more thorough assessment of substance use behaviors (i.e., type and potential combination of psychoactive substances, circumstances, frequency, severity, and consequences). The assessment merits those youth requiring some type of intervention and, for those who do, to assist with treatment planning (2). In order to generalize, disseminate, and optimize the benefits accrued from assessment and treatment of substance use behaviors of youth who speak different languages and dialects, it is vital to improve global communication and develop a common clinical terminology and measurements. Furthermore, improved standardization of the assessment procedures and instruments will enable us to compare between service needs and intervention outcomes from different regions and countries around the globe.

The objectives of this article are, first, to provide a brief review of screening and assessment of adolescents substance use and substance use disorders; second, to describe the work done with the Teen Addiction Severity Index (3,4) in different countries; and third, to address challenges and opportunities for international collaboration between health professionals responsible for providing substance abuse services for youth and families from different cultures, ethnic, and racial groups.

Screening and Assessment

It is helpful to utilize Achenbach's reference (pp. 272–273) to taxonomy and assessments in order to clarify these terms. "The distinction between the conceptual models can be expressed in terms of taxonomy and assessment. Taxonomy refers to the conceptual models by which we group cases according to their distinguishing features, whereas Assessment refers to diagnostic models and procedures for identifying the distinguishing features of individual cases" (5).

Assessment is a multistep task. The expert committee of the Institute of Medicine report on the Adolescent Assessment/Referral System recommended a three-phase process (6). First, an initial screening phase involves identification of health disorders, psychiatric problems, and psychosocial maladjustment. Then, based on the screening phase, a minority of adolescents is required to go through the second extensive assessment phase. This assessment provides a diagnostic summary that identifies the adolescent's treatment needs within specific life domains, such as substance use, psychiatric status, physical health status, school adjustment, vocational status, family function, peer relationship, leisure and recreation activity, and legal situation. The third phase involves the preparation and implementation of an integrated, problem-focused, and comprehensive treatment plan.

Substance use and substance use disorders (SUD) are multidimensional behaviors that demand a thorough assessment of several dimensions of substance use behavior in addition to quantity and frequency of use. Within the domain of substance use behavior, important dimensions include the pattern of use (quantity, frequency, onset, and types of agents used), negative consequences (school/vocational, social/peer/family, emotional/behavioral, legal and physical), context of use (time/place, peer use/attitudes, mood antecedents, consequences, expectancies, and overall social milieu), and control of use (view of use as a problem, attempts to stop or limit use).

Clinicians frequently question whether any self-report by an adolescent about substance use is accurate. Self-reports may, however, provide

reliable and valid information, particularly when no legal contingencies for drug use are pending (7–9). The clinician may attempt to substantiate suspected use by reports from third parties or through the use of urine or blood toxicology. Parents, however, tend to underreport their child's level of drug involvement and resulting problems compared to child's self-report (9,10). A variety of instruments are available and others are being developed to assist the screening and detailed assessment of substance use and related behaviors and problems. Although readers are referred elsewhere for a more detailed discussion of individual instruments (2,10), we provide several examples of types of instruments.

Screening instruments are used to identify the potential presence of SUD as a preliminary step toward a more detailed, comprehensive assessment. Although many substance use/abuse screening instruments are designed to measure the substance use domain only in adults their use have been extended for adolescents for lack of age appropriate screeners such as the highly popular CAGE (Cut Down, Annoyed, Guilty, Eye Opener) developed by Ewing (11). The CAGE however, has not been found appropriate for youth (12). The CRAFFT, a modified 6-item (Car, Relax, Alone, Forget, Friends, and Trouble) version of the CAGE, has shown much superior psychometric properties (12). Other instruments screen other domains for psychosocial functioning (Problem-Oriented Screening Instrument for Teenagers; POSIT) (13); Drug Use Screening Inventory (DUSI) (14); Personal Experience Screening Questionnaire (PESQ) (7); Substance Abuse Subtle Screening Inventory—Adolescent Version (SASSI-A) (15).

Comprehensive assessment instruments usually provide more detailed information about substance use behavior as well as other domains of functioning. The formats for comprehensive instruments vary, with some being self-report questionnaires (e.g., Personal Experience Inventory; PEI) (16), others being structured interviews (e.g., Adolescent Drug Abuse Diagnosis; ADAD) (17), and others semistructured interviews (e.g., Adolescent Problem Severity Index; APSI) (18), Teen-Addiction Severity Index (T-ASI) (3,4,19,20), and the Global Appraisal of Individual Needs (GAIN) (21).

The Teen Addiction Severity Index

T-ASI is a semistructured interview adapted from the adult oriented Addiction Severity Index for use with adolescents 12–19 years of age (3,21). The T-ASI package includes a questionnaire, a manual for the administration of the questionnaire at baseline, and a second manual for follow-ups (i.e., periodic administration of the questionnaire to measure change). This interview can be completed between 30 and 50 minutes depending on the number of dimensions with problems, the severity of the problems, as well as the experience of the professional interviewing the adolescent. The T-ASI consists of 7 content areas (Table 1): alcohol and drug use, school status, employment-support status, family relationships, legal status, peer-social relationships, and psychiatric status (3). Patient and interviewer severity ratings are elicited on a 5-point scale for each of the content areas. Psychometric data indicate favorable interrater agreement and validity evidence (4). A new and extensively revised T-ASI has been developed by Brodey et al. (19). This is a self-report version appropriate for use as a phone/electronic version, which is highly compatible with the need of agencies that handle a large volume of adolescents. Brodey et al. (20) studied the psychometric properties of the T-ASI-2, which consists of 18 domains that assess current use of alcohol, tobacco, marijuana, and other drugs, as well as service utilization, treatment satisfaction, school difficulties, social functioning with family members and peers, substance use by family members and peers, depression, anxiety, attention deficit, hyperactivity, defiant and risky behaviors, and readiness for change. Results show that all domains have adequate to excellent internal consistency (αs range from .54 to .88). New domains assessing psychological factors strongly correlated with gold standard assessments in the respective areas. The T-ASI-2 is envisioned to be a user-friendly, cost-effective, viable assessment of substance use behavior and related factors.

International Experience with the T-ASI

The T-ASI has been used extensively throughout the United States and Canada. So far,

TABLE 1. Teen Addiction Severity Index (T-ASI) Assessment Domains

Domain	Key Variables
Drug and alcohol involvement	Drug use onset, frequency, quantity, duration for specific substances, drug combinations, consequences
School function	Attendance, academic and social functioning
Employment status	Attendance and quality of performance
Family function	Family physical environment, communication and function including potential abuse
Social functioning	Peer drug and alcohol use, peer communication and social competence
Legal status	Involvement in the legal sysytem
Mental health status	Mental health dysfunctions or deficits in terms of signs and symptoms

TABLE 2. The State of the T-ASI Internationally

Country	Language	Reverse Translation[1]	Shared[2]	Reliability Validity	# Youth Interviewed	# Parents Interviewed	Presentations Publications
Argentina	Spanish*	+	—	—	—	—	—
Belgium	Dutch	UW		UW	40	10	—
Brazil	Portuguese	+	UW	+	258	—	+
Egypt	Arabic; UW	—	—	—	—	—	—
Finland	Finnish	—	—		127	—	+
Israel	Hebrew	+	+	—	2	—	—
Italia	Italian	+	+	UW	12	—	—
Mexico/United States	Spanish**	UW	—	—	—	—	—
Spain	Spanish	+	+	+	275	—	+
Turkey	Turkish	—	—	—	—	—	—

Notes: *Using Dr. Diaz's version from Barcelona, Spain.
*Using an independent and different translation from Dr. Diaz's.
UW: Underway.
[1]Reverse translation: Into original language; that is, English.
[2]Shared: with other colleagues from homeland or other countries speaking the same language.

requests for permission to translate the instrument came from Belgium, Brazil, Finland, Egypt, Israel, Italy, Mexico, Spain, Argentina, and Turkey. Inquiries regarding the Spanish version elicited from several countries in South America (e.g., Argentina, Chile, Peru) were referred to Dr. Rosa Diaz from Barcelona, Spain, who spearheaded the development of the T-ASI Spanish version (22).

In order to understand the state-of-the-art in the development and utilization of the T-ASI is in different countries, the author developed a 13-item questionnaire, which was sent to international collaborators. The results are summarized in Table 2.

The T-TSR

Kaminer and colleagues have also developed a health service utilization tool that is a companion to the T-ASI, named the Teen Treatment Services Review (T-TSR), which is an age-appropriate modification of McLellan's TSR (23,24). This self-report examines the type and number of services in and out of program that the youth with SUD received during the treatment episode. The T-TSR has been in use only in the United States and has not been translated yet into any other language.

DISCUSSION

From a public health standpoint, it is critical to quickly and accurately identify those adolescents who are abusing drug and possibly suffering from an SUD. Research over the past 20 years has provided health professionals with various tools that are developmentally

appropriate for drug-abusing adolescents (10). Our review concludes that many of the screening and comprehensive assessment tools in the literature have favorable psychometric properties. Also, assessors have a range of interviews and self-administered questionnaires from which to choose (2). The translation, utilization, and research with the T-ASI in different languages have been progressing well. It is a testimony to the growing international recognition that competent clinical work needs to be preceded by an effective evaluation, which includes developmentally appropriate standardized and psychometrically tested rating scales. The Spanish experience and collaboration has demonstrated how this can be done. Similarly, sharing instruments translated into languages that are spoken in more than one country such as Arabic, English, etc., may save time and resources and will prevent "reinventing the wheel."

The work is far from being completed. We do not know what the state of evaluation of adolescent substance use disorders is in highly populated countries such as India, China, Russia, Japan, Indonesia, Iran, Nigeria, Germany, and more. It is recommended that the International Society of Addiction Medicine (ISAM), with or without other collaborative international agencies (e.g., WHO), sponsor and coordinate the efforts to disseminate the benefits accrued from already developed assessment and treatment of substance use disorders of youth into different countries and regions. The annual conference is a golden opportunity for coordinated networking. Addiction professionals representing a myriad of cultures, ethnic, and racial groups would be encouraged to translate relevant assessments into other languages and dialects. The original authors can support the efforts by conducting reverse translation to be followed by testing of the psychometric properties of the instruments before a wider use commences.

In sum, continued research in the assessment field is still necessary to further improve measures related to theory-driven treatment and aftercare process treatment outcome variables (25). We cannot completely undo or reverse the conclusion of the biblical story about Tower of Babel. However, we can try to improve communication and collaboration for the sake of our youth with substance use disorders.

REFERENCES

1. Newcomb MD: Identifying high-risk youth: prevalence and patterns of adolescent drug abuse. Rahdert E, Czechowicz E (Eds.). Adolescent drug abuse: Clinical assessment and therapeutic interventions Rockville, MD: National Institute on Drug Abuse; 1995:7–38. NIH Publication No. 95–3908.

2. Winters KC, Stinchfield R, Bukstein OG: Assessing adolescent substance abuse. In: Kaminer Y, Bukstein OG (Eds.). Adolescent substance abuse: psychiatric comorbidity & high risk behaviors. New York, Routledge/Taylor & Francis Group, NY, New York, 2008.

3. Kaminer Y, Bukstein OG, Tarter RE: The Teen-Addiction Severity Index: rationale and reliability. Int J Addict 1991;26:219–226.

4. Kaminer Y, Wagner E, Plummer B, Seifer R: Validation of the Teen-Addiction Severity Index (T-ASI). Am J Addict 1993;2:250–254.

5. Achenbach TM: Comorbidity in child and adolescent psychiatry: Categorical and quantitative perspectives. J Child Adolesc Psychopharmacol 1990;1:271–278.

6. Institute of Medicine: Broadening the base of treatment for alcohol problems. Washington, DC: National Academy Press; 1990.

7. Winters KC: Development of an adolescent alcohol and drug abuse screening scale: Personal Experience Screening Questionnaire. Addict Behav 1992;17:479–490.

8. Buchan BJ, Dennis ML, Tims FM, Diamond GS: Cannabis use: consistency and validity of self-report, on-site urine testing and laboratory testing. Addiction 2002;97(Suppl 1):98–108.

9. Burleson J, Kaminer Y: Correlation between youth parent report and objective measurement of substance abuse and related problems. J Child Adolesc Subst Abuse 2006;16:53–68.

10. Winters KC, LatimerWW, Stinchfield R: Assessing adolescent substance use. Wagner EF, Waldron HB (Eds.). Innovations in adolescent substance abuse interventions. Amsterdam: Pergamon; 2001:1–29.

11. Ewing JA: Detecting alcoholism: The CAGE questionnaire. JAMA 1984;252:1905–1907.

12. Knight JR, Sherritt L, Shrier LA, Harris SK, Chang G: Validity of the CRAFFT substance abuse screening test among adolescent clinic patients. Arch Pediatr Adolesc Med 2002;156:607–614.

13. Rahdert E: The adolescent assessment and referral system manual. Rockville, MD: National Institute on Drug Abuse; 1991. DHHS Publication No. ADM 91–1735.

14. Tarter RE: Evaluation and treatment of adolescent substance abuse: a decision tree method. Am J Drug Alcohol Abuse 1990;16:1–46.

15. Miller G: Substance Abuse Subtle Screening Inventory-Adolescent (SASSI-A). Bloomington, IN: SASSI Institute; 1990.

16. Winters KC, Henly G: Personal Experience Inventory (PEI). Los Angeles: Western Psychological Services; 1988.

17. Friedman AS, Utada A: A method for diagnosing and planning the treatment of adolescent drug abusers (the Adolescent Drug Abuse Diagnosis [ADAD] Instrument). J Drug Educ 1989;19:285–312.

18. Metzger DS, Kushner H, McLellan AT: Adolescent Problem Severity Index. Administration manual. Philadelphia: Biomedical Computer Research Institute; 1991.

19. Brodey B, Rosen C, Winters K, Brodey I, Sheetz B, Steinfeld R, Kaminer Y: Conversion & validation of the Teen-Addiction Severity Index (T-ASI) into internet and automated telephone self-report administration. Psychol Addict Behav 2005;19:54–61.

20. Brodey BB, McMullin D, Kaminer Y, Winters KC, Mosshart E, Rosen CS, Brodey IS: Psychometric characteristics of the Teen Addiction Severity Index—Two (T-ASI-2). Subst Abuse 2008;29(2):19–32.

21. Dennis ML: Individual Needs (GAIN): administration guide for the GAIN and related measures. 5th ed. Bloomington, IL; Chestnut Health Systems; 2003.

22. McLellan AT, Alterman AI, Cacciola J: A new measure of substance abuse treatment: initial studies of the Treatment Services Review. J Nerv Ment Dis 1992;180:101–110.

23. Kaminer Y, Blitz C, Burleson J, Sussman J: The Teen Treatment Services Review (T-TSR): rationale and reliability in adolescent substance abuse treatment. J Subst Abuse Treat 1998;15:291–300.

24. Diaz R, Castro J, Serrano L, Gonzalez L, Calvo R, Goti J, Kaminer Y, Gual A: Clinical and research utility of a Spanish version of the Teen-Addiction Severity Index (T-ASI) in a psychiatric adolescent sample. Addictive Behaviors 2008;33:188–195.