Screening, brief intervention, and referral to treatment for adolescent alcohol use in Canadian pediatric emergency departments: a national survey of pediatric emergency physicians

Shelly Jun*; Amy C Plint, MD, MSc†; Sarah Curtis, MD, MSc*; Amanda S. Newton, PhD*on behalf of Pediatric Emergency Research Canada (PERC)‡

CLINICIAN'S CAPSULE

What is known about the topic?
Emergency department (ED) visits for adolescent alcohol-related concerns offer the opportunity for early intervention; however, the underlying alcohol problem generally remains unaddressed.

What did this study ask?
What are ED physicians' perceptions regarding adolescent alcohol use and ED-based intervention? What are their current intervention practices?

What did this study find?
While the majority of ED physicians feel the responsibility to address problematic adolescent alcohol use, interventional practices are unstandardized and lacking.

Why does this study matter to clinicians?
This study identifies the resources needed by ED physicians to deliver appropriate adolescent alcohol-related care.

ABSTRACT

Background: Problematic alcohol use is associated with detrimental cognitive, physiological and social consequences. In the emergency department (ED), Screening, Brief Intervention, and Referral to Treatment (SBIRT) is the recommended approach to identify and treat adolescent alcohol-related concerns, but is underused by physicians.

Objective: This study examined pediatric emergency physicians' perceptions of adolescent drinking and treatment, and their current self-reported SBIRT practices.

Method: Physicians in the Pediatric Emergency Research Canada database (n = 245) received a 35-item questionnaire that was administered through a web-based platform and paper-based mail-outs. Recruitment followed a modified Dillman four-contact approach.

Results: From October 2016 to January 2017, 166 pediatric emergency physicians (46.4% males; mean age = 43.6 years) completed the questionnaire. The response rate was 67.8%. Physicians recognized the need (65%) and responsibility (86%) to address adolescent alcohol problems. However, confidence in knowledge and abilities for SBIRT execution was low. Twenty-five percent of physicians reported never having practiced all, or part of, SBIRT while 1.3% reported consistent SBIRT delivery for adolescents with alcohol-related visits. More alcohol education and counselling experience was associated with higher SBIRT use; however, physicians generally reported to have received minimal alcohol training. SBIRT practices were also associated with physician perceptions of problematic alcohol use and its treatability.

Conclusions: Pediatric emergency physicians acknowledge the need to address problematic adolescent alcohol use, but routine SBIRT use is lacking. Strategies to educate physicians about SBIRT and enhance perceived self-competency may improve SBIRT use. Effectiveness trials to establish SBIRT impact on patient outcomes are also needed.

RÉSUMÉ

Contexte: L'abus d'alcool est associé à des conséquences néfastes sur les plans cognitif, physiologique et social. Il est recommandé, au service des urgences, d'appliquer le programme d'intervention de dépistage de courte durée et de recommandation de traitement (IDCDRT) dans le dépistage et le traitement des problèmes de consommation d'alcool chez les adolescents, mais celui-ci est plus ou moins appliqué par les médecins.

Objectifs: L'étude visait à examiner la perception qu'ont les médecins d'urgence en pédiatrie de la consommation

From the *Department of Pediatrics, University of Alberta, Edmonton, AB; †Departments of Pediatrics and Emergency Medicine, University of Ottawa, Ottawa, ON; and ‡Pediatric Emergency Research Canada (PERC), Calgary, AB.

Correspondence to: Shelly Jun, Department of Pediatrics, University of Alberta, 3-077 Edmonton Clinic Health Academy, 11405 - 87 Avenue, Edmonton, AB T6G 1C9; Email: sjun1@ualberta.ca

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abusive d'alcool chez les adolescents et de son traitement, ainsi que l'application autodéclarée du programme IDCDRT.
Méthode: Les médecins inscrits dans la base de données du réseau Pediatric Emergency Research Canada (n = 245) ont reçu un questionnaire en 35 points, qui a été rempli dans une plateforme Web ou sur papier après l'envoi du document par la poste. La recherche de médecins s'est faite selon une version modifiée de la méthode de Dillman en quatre étapes.
Résultats: D'octobre 2016 à janvier 2017, 166 médecins d'urgence en pédiatrie (hommes : 46,4 %; âge moyen : 43,6 ans) ont rempli le questionnaire. Le taux de réponse a atteint 67,8 %. Les médecins ont reconnu la nécessité (65 %) d'agir pour régler les problèmes de consommation abusive d'alcool chez les adolescents, de même que leur responsabilité (86%) en la matière. Toutefois, ils ont une faible connaissance du programme et ont peu confiance en leur capacité d'appliquer le programme. Vingt-cinq pour cent des médecins ont déclaré n'avoir jamais appliqué en tout ou en partie le programme IDCDRT, tandis que 1,3 % des répondants ont déclaré le mettre habituellement en œuvre chez les adolescents qui consultent pour des problèmes de consommation d'alcool. Une bonne formation et l'expérience de consultations psychologiques en la matière étaient associées à une application accrue de l'IDCDRT; toutefois, les médecins ont généralement indiqué avoir reçu une formation minimale en ce qui concerne la consommation d'alcool. L'application de l'IDCDRT était également associée à la perception qu'ont les médecins du problème de consommation d'alcool et de sa possibilité de traitement.
Conclusions: Les médecins d'urgence en pédiatrie reconnaissent la nécessité de s'attaquer au problème d'abus d'alcool chez les adolescents, mais l'application courante du programme IDCDRT laisse à désirer. Des stratégies visant à mieux former les médecins sur le programme et à améliorer la perception de leur compétence en la matière pourraient contribuer à son application. Il faudrait aussi mener des essais d'efficacité afin de déterminer l'influence de l'IDCDRT sur les résultats cliniques.

Keywords: alcohol, alcohol intervention, emergency department, pediatrics, SBIRT

INTRODUCTION

Problematic adolescent alcohol use is prevalent in Canada and associated with harmful and hazardous consequences.[1] Emergency department (ED) visits for alcohol-related morbidities offer an opportunity to screen for problematic alcohol use and provide brief intervention, referral to treatment (SBIRT), or both to those adolescents who screen positive.[2] Despite the benefits[3,4] and recommendations to use[5] SBIRT for adolescent ED patients, limited time, knowledge, and resources hinder the performance of SBIRT in the ED.[6]

To date, there are no available reports on alcohol intervention practices in Canadian EDs to inform recommendations for SBIRT training and implementation. This study explored perceptions of adolescent alcohol use and ED-based treatment and SBIRT practices among Canadian pediatric emergency physicians.

METHODS

Study design and population

Physicians in the Pediatric Emergency Research Canada (PERC) database, which included approximately 53% of physicians working across 15 Canadian pediatric EDs, were surveyed ($n = 245$). Our calculated sample size was 81 participants (see Supplementary File 1).[7] The University of Alberta Research Ethics Board approved this study.

Survey development

We developed a 35-item questionnaire with five domains: demographics (seven items), training (three items), attitudes and beliefs about adolescent drinking and treatment (seven items), SBIRT practices (seven items), and technology acceptance (11 items) (see Supplementary File 2). The questionnaire was tested for content and face validity.

Recruitment

From October 2016 to January 2017, we recruited PERC physicians using a modified Dillman approach.[8] Physicians received pre-notice email invitations to participate and three subsequent emails with a unique participant hyperlink to the survey. Paper-based questionnaires were mailed to non-respondents. Data were collected and managed using Research Electronic Data Capture (REDCap). All responses were anonymized, and no identifying information was collected.

Statistical analysis

We summarized responses with frequencies and proportions with 95% confidence intervals and used a chi-square test to explore associations between physician characteristics and reported SBIRT practices. We used the Jonckheere-Terpstra trend test to explore the

directionality of associations. All tests were two-sided, and *p*-values less than 0.05 were considered significant. Analyses were performed using STATA (version 14.0; StataCorp, College Station, TX).

RESULTS

Respondent characteristics

The response rate was 67.8% (166 of 245 physicians; 46.4% male). On average, the physicians were 43.6 years old (standard deviation [SD] = 8.8) with 13.5 years of professional experience (SD = 9.1). Most physicians held clinical appointments as pediatric emergency physicians (83.0%); 64.5% completed pediatric emergency medicine fellowships. Almost one-half, 42.8%, of the physicians indicated personally knowing a family relation with an alcohol problem.

Most physicians reported feeling comfortable discussing alcohol use with adolescents (72.9%), recognized problematic use as addressable in the ED (65.1%), and indicated feeling responsible for intervening (85.6%). However, many indicated low confidence in knowledge of (75.3%) and ability to conduct (62.1%) SBIRT. Perceptions of the treatability of problematic alcohol use in the ED varied (see Supplementary File 3). Physicians who indicated not feeling responsible for intervening (14.5%) most commonly identified general practitioners and family members as responsible.

Physician SBIRT practices

Twenty-five percent of physicians reported that they had never conducted SBIRT, primarily citing limited time and resources as reasons. Only 1.2% reported conducting SBIRT consistently clinically. Among physicians who reported conducting SBIRT ($n = 125$), 59.6% performed screening, 57.8% provided brief intervention, and 51.2% had made referrals to treatment. Less than one-half of those who conducted screening used a validated tool (40.4%).

Factors associated with physician SBIRT practices

Table 1 presents the associations between physician-specific characteristics and SBIRT practices. Indications of more alcohol education received during professional training and more alcohol counselling experience were associated with increased performance of SBIRT. Positive responses for comfort in addressing alcohol use, confidence in SBIRT knowledge, and confidence in the ability to conduct SBIRT demonstrated a similar pattern. SBIRT practice was also associated with beliefs of ED suitability to address adolescent alcohol use, treatability of problematic alcohol use, and clinical responsibility to intervene.

DISCUSSION

To our knowledge, this is the first study to describe the perceptions and practices of Canadian pediatric emergency physicians regarding adolescent alcohol-related ED presentations. In this study, physicians recognized the importance of and their responsibility to address problematic adolescent alcohol use. However, they lacked confidence in their knowledge of and ability to conduct SBIRT, and one-quarter reported never performing SBIRT for alcohol-related presentations.

Educational initiatives for trainees in SBIRT do result in skills and competency to address alcohol problems.[9,10] We found that conducting SBIRT was associated, in part, with the amount of alcohol education received during professional training, but not during continuing medical education (CME). Translating these findings into practical recommendations for training Canadian physicians, offering a SBIRT curriculum early in professional learning may be of value. As many physicians who reported conducting SBIRT did not necessarily follow SBIRT recommendations, training could impact both confidence in and quality of its performance.

Underutilization of SBIRT among emergency physicians has been prevalent in the past and remains unchanged. A commonly cited reason for not practising SBIRT is the belief that SBIRT may not impact patient outcomes.[11] In our study, physicians who doubted that problematic alcohol use was treatable in the ED reported less SBIRT use. While efficacy studies have demonstrated reduced alcohol-related consequences following SBIRT in the ED,[3,4] establishing a strong evidence base for effectiveness is critical for SBIRT implementation.

This study had several limitations. First, although our sample size was statistically sufficient, we could not determine whether systematic differences existed between respondents and non-respondents, leaving the potential for nonresponse bias in the results. Second, our findings reflect only physician beliefs and clinical practices. To assess the performance of SBIRT comprehensively in the ED, the beliefs and practices of other ED clinicians including nurses and mental health care providers is

Table 1. The relationship between current SBIRT practices and physician-specific factors

		Performing alcohol SBIRT, %			
		Never/ rarely ($n=88$)	Sometimes ($n=45$)	Usually/ always ($n=33$)	p-value*
Demographics					
Sex					
	Male	50.0	51.1	30.3	0.14
	Female	50.0	48.9	69.7	
Age (years)					
	≤30	3.4	0	6.1	0.88
	31–40	39.8	33.3	36.3	
	41–50	37.5	35.6	48.5	
	51–60	13.6	24.4	6.1	
	61–70	5.7	6.7	3.0	
Experience (years)					
	<5	15.9	17.8	15.1	0.55†
	5–12	34.1	28.9	45.5	
	13–20	31.8	28.9	30.3	
	>20	18.2	24.4	9.1	
Primary clinical work in pediatric ED					
	Yes	87.5	75.6	81.3	0.10
	No	12.5	24.4	18.7	
Personally know someone with alcohol problems					
	Yes	62.5	55.5	72.7	0.26†
	No	36.4	37.8	18.2	
	Decline to answer	1.1	6.7	9.1	
Training					
PEM fellowship training					
	Yes	65.9	60.0	66.7	0.83
	No	34.1	40.0	33.3	
Alcohol education during professional training‡ (hours)					
	None	6.8	8.9	0	<0.01
	1–10	84.1	75.5	60.6	
	11–25	5.7	6.7	33.3	
	>25	3.4	8.9	6.1	
CME hours in alcohol education					
	None	54.5	42.2	36.4	0.08
	1–2	20.5	26.7	30.3	
	3–5	12.5	15.5	15.1	
	>5	12.5	15.5	18.2	
Amount of clinical experience counselling adolescents about alcohol use					
	None/little	29.5	6.7	3.0	<0.001
	Small	54.6	46.7	36.4	
	Moderate	14.8	42.2	48.5	
	Large	1.1	0	9.1	
	Extensive	0	4.4	3.0	
Attitudes and beliefs					
Comfort addressing alcohol drinking behaviours					
	Strongly disagree	4.6	0	0	<0.001
	Moderately disagree	18.2	6.7	6.1	
	Slightly disagree	14.8	13.3	3.0	

Table 1. (Continued)

		Performing alcohol SBIRT, %			
		Never/ rarely ($n=88$)	Sometimes ($n=45$)	Usually/ always ($n=33$)	p-value*
	Slightly agree	34.1	44.4	24.2	
	Moderately agree	19.3	24.4	39.4	
	Strongly agree	9.1	11.1	27.3	
Confidence in the knowledge of SBIRT protocol					
	Strongly disagree	45.5	6.7	12.1	< 0.001
	Moderately disagree	29.5	35.6	9.1	
	Slightly disagree	14.8	22.2	30.3	
	Slightly agree	10.2	22.2	30.3	
	Moderately agree	0	11.1	12.1	
	Strongly agree	0	2.2	6.1	
Confidence in ability to conduct SBIRT					
	Strongly disagree	38.6	2.2	9.1	< 0.001
	Moderately disagree	26.1	24.4	6.1	
	Slightly disagree	11.4	26.7	21.2	
	Slightly agree	15.9	24.4	39.4	
	Moderately agree	5.7	17.8	12.1	
	Strongly agree	2.3	4.4	12.1	
Harmful and hazardous drinking is treatable in the ED					
	Strongly disagree	17.1	4.4	15.2	< 0.01
	Moderately disagree	27.3	24.4	9.1	
	Slightly disagree	14.8	22.2	15.2	
	Slightly agree	60.7	28.9	24.2	
	Moderately agree	7.9	13.3	30.3	
	Strongly agree	2.3	6.7	6.1	
Adolescent alcohol use is a problem to be addressed in ED					
	Strongly disagree	6.8	0	0	< 0.001
	Moderately disagree	13.6	2.2	9.1	
	Slightly disagree	13.6	2.2	0	
	Neutral	13.6	22.2	3.0	
	Slightly agree	18.2	24.4	21.2	
	Moderately agree	25.0	33.3	21.2	
	Strongly agree	9.1	15.6	45.5	
Responsibility for addressing adolescent alcohol-related problems when clinically indicated					
	Strongly disagree	1.1	0	0	< 0.001
	Moderately disagree	3.4	0	0	
	Slightly disagree	6.8	0	3.0	
	Neutral	10.2	8.9	0	
	Slightly agree	19.3	17.8	12.1	
	Moderately agree	40.9	53.3	36.4	
	Strongly agree	18.2	20.0	48.5	

CME = continuing medical education; PEM = pediatric emergency medicine; SBIRT = Screening, Brief Intervention, and Referral to Treatment.
* Using a standardized Jonckheere-Terpstra test. The chi-square and Jonckheere-Terpstra tests both demonstrated significant associations, $p < 0.05$, for the same variables.
† Indicates a negative test statistic (i.e., variables increased in opposite directions).
‡ Medical school, residency, and fellowship.

necessary. Finally, despite precautions, this study was susceptible to social desirability bias, as the physicians were not blinded to the study objective and might have responded in perceived favourable directions.

CONCLUSIONS

Although SBIRT is recommended for adolescent ED patients with alcohol-related concerns, physicians in this study reported limited and unstandardized practices of SBIRT for these visits. Strategies to enhance educational initiatives regarding SBIRT among physician trainees is important as is maturing the evidence base for SBIRT effectiveness.

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SUPPLEMENTARY MATERIAL

To view supplementary material for this article, please visit https://doi.org/10.1017/cem.2018.390

REFERENCES

1. Health Canada. 2014/2015 *Canadian student tobacco, alcohol and drugs survey*. Ottawa: Health Canada; 2016.
2. Newton AS, Dong K, Mabood N, et al. Brief emergency department interventions for youth who use alcohol and other drugs: a systematic review. *Pediatr Emerg Care* 2013;29 (5):673-84.
3. Cunningham RM, Chermack ST, Ehrlich PF, et al. Alcohol interventions among underage drinkers in the ED: a randomized controlled trial. *Pediatrics* 2015;136(4):e783-93.
4. Walton MA, Chermack ST, Shope JT, et al. Effects of a brief intervention for reducing violence and alcohol misuse among adolescents: a randomized controlled trial. *JAMA* 2010;304(5):527-35.
5. American College of Emergency Physicians. Alcohol screening in the emergency department. Available at: www.acep.org/Clinical—Practice-Managment/Alcohol-Screening-in-the-Emergency-Department/ (accessed June 22, 2017).
6. Chun TH, Spirito A, Rakowski W, D'Onofrio G, Woolard RH. Beliefs and practices of pediatric emergency physicians and nurses regarding counseling alcohol-using adolescents: can counseling practice be predicted? *Pediatr Emerg Care* 2011;27(9):812-25.
7. Bartlett JE, Kotrlik JW, Higgins CC. Organizational research: determining appropriate sample size in survey research. *Inf Technol Learn Perform J* 2001;19(1):43-50.
8. Dillman DA, Smyth JD, Christian LM, Dillman DA. *Internet, mail, and mixed-mode surveys: the tailored design method*. Hoboken: Wiley & Sons; 2009.
9. D'Onofrio G, Nadel ES, Degutis LC, et al. Improving emergency medicine residents' approach to patients with alcohol problems: a controlled educational trial. *Ann Emerg Med* 2002;40(1):50-62.
10. Bernstein E, Bernstein J, Feldman J, et al. An evidence based alcohol screening, brief intervention and referral to treatment (SBIRT) curriculum for emergency department (ED) providers improves skills and utilization. *Subst Abus* 2007;28 (4):79-92.
11. Broderick KB, Kaplan B, Martini D, Caruso E. Emergency physician utilization of alcohol/substance screening, brief advice and discharge: a 10-year comparison. *J Emerg Med* 2015;49(4):400-7.