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RESEARCH ARTICLE

A Critique of the New Canadian Fetal Alcohol Spectrum Disorder Guideline

John D. McLennan MD PhD[1]; Peter Braunberger MD, PhD[2]

Abstract

A new Fetal Alcohol Spectrum Disorder (FASD) guideline was published in the Canadian Medical Association Journal in 2016. This is relevant to the mental health field as mental health symptoms and psychiatric disorders are often identified as associated with and/or part of FASD presentations. Unfortunately, the new guideline has not advanced understanding of the interface between FASD and mental health problems; rather it may contribute to additional confusion. For example, a new recommendation to include additional mental health symptoms, such as anxiety and affect dysregulation, as manifestations contributing to a diagnosis of FASD is particularly concerning given the paucity of evidence supporting this assertion and the potential to distort delivery of mental health interventions for mental health problems. In addition, the guideline recommendation for introducing an "at risk for FASD" designation is not without risk. An appeal is made for greater scrutiny in the construction of diagnostic criteria and guidelines and for a more careful delineation of causal relationships and comorbidities to better inform the delivery of evidence-based mental health care.

***Key Words**: fetal alcohol syndrome, practice guidelines, comorbidity, diagnosis, mental disorders*

Résumé

De nouvelles lignes directrices sur le trouble du spectre de l'alcoolisation fœtale (TSAF) ont été publiées dans le *Journal de l'Association médicale canadienne*, en 2016. Ceci est utile au domaine de la santé mentale car les symptômes de santé mentale et les troubles psychiatriques sont souvent identifiés comme étant associés aux présentations du TSAF et/ou comme en faisant partie. Malheureusement, les nouvelles lignes directrices n'ont pas fait progresser la compréhension de l'interface entre le TSAF et les problèmes de santé mentale; elles peuvent plutôt ajouter à la confusion. Par exemple, une nouvelle recommandation consistant à inclure des symptômes de santé mentale additionnels, comme l'anxiété et la dysrégulation de l'affect, comme étant des manifestations qui contribuent à un diagnostic de TSAF est particulièrement préoccupante étant donné la pénurie de données probantes soutenant cette assertion et le potentiel de fausser la prestation d'interventions de santé mentale pour des problèmes de santé mentale. En outre, la recommandation des lignes directrices qui introduit une désignation « à risque de TSAF » n'est pas sans risque. Nous en appelons à une surveillance accrue dans la construction des critères et des directives diagnostiques, et à une description plus prudente des relations causales et des comorbidités afin de mieux éclairer la prestation des soins de santé mentale fondés sur des données probantes.

***Mots clés**: syndrome d'alcoolisation fœtale, lignes directrices de la pratique, comorbidité, diagnostic, troubles mentaux*

[1]Scientist, Children's Hospital of Eastern Ontario – Research Institute; Research Chair in Child and Adolescent Psychiatry, Department of Psychiatry, University of Ottawa; Adjunct Associate Professor, Department of Pediatrics, University of Calgary.

[2]Assistant Professor, Northern Ontario School of Medicine, Thunder Bay, Ontario.

Corresponding E-Mail: jmclennan@cheo.on.ca

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Introduction

A new Canadian diagnostic guideline for Fetal Alcohol Spectrum Disorder (FASD) was published in the Canadian Medical Association Journal in 2016 (Cook et al., 2016a). Whereas there is little disagreement regarding the potential teratogenicity of prenatal alcohol exposure (PAE), there are many unanswered questions about the construct of FASD and how human service sectors should best respond. Unfortunately, aspects of the new Canadian guideline appear to further compromise clarity rather than advance an evidence-based approach.

Overview of the new Canadian guideline

This new guideline replaces the 2005 Canadian version (Chudley et al., 2005) and joins five other published efforts identified as FASD guidelines [a German, (Landgraf, Nothacker, & Heinen, 2013) an Australian, (Watkins et al, 2013) and three US versions (Stratton, Howe & Battaglia, 1996), (Hoyme et al., 2005), (Hoyme et al., 2016)]. All guidelines to date are largely focused on assessment and diagnosis, although some include points on management and follow-up. A particular challenge confronting those developing FASD guidelines is the variable manifestation, in persons with PAE, of the physical features described in the classical fetal alcohol syndrome (FAS). This includes variability in the manifestation of the sentinel facial dysmorphic features of short palpebral fissures, smooth philtrum and thin upper lip (del Campo & Jones, 2016). Furthermore, growth impairment (e.g., intrauterine growth restriction), another of the core dimensions of the original syndrome (Jones & Smith, 1973), has been dropped in the new guideline (Cook et al., 2016b) because of inconsistent associations with PAE (O'Leary, Nassar, Kurinczuk, & Bower, 2009). Given inconsistent manifestations of these physical features, an accurate operationalization of neurodevelopmental criteria is then particularly critical for FASD guidelines.

Within the Canadian guidelines, achievement of the neurodevelopmental criteria for FASD requires severe impairment in three or more of ten neurodevelopmental domains (e.g., academic achievement, attention, affect regulation) (Cook et al., 2016a). Impaired affect regulation, a newly added domain, can be achieved by meeting criteria for one of several DSM-5 disorders (e.g., Disruptive Mood Dysregulation Disorder, Generalized Anxiety Disorder) (Cook et al., 2016a). Also new is that attention is separated from hyperactivity/impulsivity (the latter now being housed under the executive function domain) (Cook et al., 2016a). Presumably this could lead to a scenario in which a child with a combined presentation of ADHD could, through this one diagnosis alone, achieve two of the three required neurodevelopmental criteria.

The 18 guideline recommendations are housed within domains that range from "screening" to "management and follow-up." "Strength of the recommendation" and "quality of the level of evidence" ratings are given for 17 of the 18 recommendations (Cook et al., 2016a). The "strength of the recommendation" is rated as "strong" for all 17 (Cook et al., 2016a). Ten recommendations receive a "high" rating for quality of evidence (Cook et al., 2016a). Within the recommendations, a three category classification system is proposed: (i) FASD with sentinel facial features; (ii) FASD without sentinel facial features; and, (iii) a new proposed "designation" of "At risk for Neurodevelopmental Disorder and FASD, associated with PAE"(Cook et al., 2016a).

Critique 1: Questionable aspects of the neurodevelopmental criteria for an FASD diagnosis

Perhaps the most concerning aspect of the new guideline is the inclusion of an expanded array of mental health symptoms within the neurodevelopmental criteria, in particular, incorporation of difficulties with affect regulation and specific DSM diagnoses. While a linkage between PAE and affect regulation could constitute a reasonable hypothesis to be studied, it is premature for a practice guideline to advocate this as a domain with sufficient evidence of causality to include it as a symptom pattern contributing to achievement of FASD diagnostic criteria. Unfortunately, many studies identifying associations between mental health symptoms and FASD or PAE are fraught with methodological limitations, including referral bias and uncontrolled confounders (McLennan, 2015). These limitations may contribute to an overestimate of the strength of relationships between mental health symptoms and PAE or FASD (McLennan, 2015).

Also questionable are proposed cut-points for criteria attainment in various domains. This includes the repeated recommendation to rely on two standard deviations (SD) from the mean on various normed behavioural and developmental scales as the threshold for neurodevelopmental criteria (Cook et al., 2016b). While this is more conservative than the new US guideline which proposes a cut-point of 1.5 SD (Hoyme et al., 2016), both are arbitrary. Similarly, the proposal to use DSM-5 criteria to establish thresholds for some neurodevelopmental domains (e.g., meeting criteria for Separation Anxiety Disorder for the affect regulation domain) (Cook et al., 2016b) is also without empirical evidence. Again, these could be hypotheses to be investigated, i.e., whether such thresholds result in greater diagnostic accuracy and, more importantly, whether such thresholds lead to effective service matching. However, it seems unwarranted at this point to advocate their use as evidence-based criteria.

The guideline algorithm proposes that neurodevelopmental compromise (at the proposed thresholds) in the absence of physical criteria, but occurring in the context of significant

PAE, is adequate for an FASD diagnosis. Unfortunately, it is not clear how a person whose neurodevelopmental symptoms secondary to other causal factors, but who also has PAE, might avoid being categorized as FASD; in other words, the risk for false positive FASD diagnoses is not addressed.

Of note, the guideline itself acknowledges that "no neurodevelopmental deficits are considered pathognomonic for, or specific to, FASD" (p. 195) (Cook et al., 2016a). How clinicians might determine whether a given neurodevelopmental problem is attributable to PAE, and, more importantly, how such a distinction benefits the recipient of an FASD diagnosis are important and unfortunately unaddressed questions.

Although Hoyme, et al. (2016) expresses concern that FASD might be misdiagnosed as another disorder, the possibility that another mental health or medical diagnosis is misdiagnosed as FASD or missed because of an FASD diagnosis is similarly concerning. Now that mood and anxiety diagnoses are added to the list of neurodevelopmental criteria, and physical abnormalities are not required, the risks of misdiagnosis and missed diagnoses are potentially amplified and as such warrant further scrutiny.

Additional complexities of psychiatric diagnoses were also not addressed. For example, it is not clear how changes in psychiatric presentations over time might be managed (e.g., Should a past history of major depressive disorder, now in remission, be counted towards the affect regulation domain?). Nor is it clear how associated or correlated symptoms should be addressed (e.g., cognitive deficits have been identified in those who have or have had depression [Rock, Roiser, Riedel, & Blackwell, 2014]; learning disabilities and academic underachievement are commonly comorbid with ADHD [DuPaul, Gormley, & Laracy, 2013]). It is a concern that common associated features or comorbidities may be attributed or misattributed twice towards FASD.

Critique 2: Risks from the newly proposed "at risk for neurodevelopmental disorder" designation

A second concern is the new category of "at risk for neurodevelopmental disorder and FASD, associated with PAE" proposed by the Canadian guideline. This classification can be achieved in two ways: (i) children with concerning PAE, but who do not meet criteria for sentinel facial features, nor for CNS impairment, and for whom the assessment is deemed "inconclusive,"; and, (ii) children < six years old with known or unknown PAE with sentinel facial features, but without apparent or measurable CNS impairment (Cook et al., 2016a). This approach may facilitate increased surveillance of persons who may be at higher risk for subsequent difficulties. However, whatever advantage this affords needs to be balanced against potential adverse consequences of labelling a number of persons "at risk." Some of these "at risk" persons will not subsequently develop any concerns, while others may develop problems that may not be a function of PAE. In the latter case, the "at risk" status may prime an approach that encourages attributing emerging concerns as likely to be a function of PAE, and potentially downplaying the contribution of other causal factors. A bias against the role of other contributing factors may increase the risk of missing potentially modifiable variables influencing child development. Of interest, this is the one of the 18 recommendations which did not include strength of recommendation or quality of evidence ratings.

Critique 3: Unsupported ratings of "strong" recommendation and "high" quality evidence

Although the Appraisal of Guidelines, Research, and Evaluation (AGREE) framework was referenced in the new Canadian guideline, it is important to note that AGREE itself "do[es] not evaluate the clinical appropriateness or validity of the recommendations" (p. 840) (Brouwers, et al., 2010). Rating tools from the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) were also cited (Guyatt, et al., 2011). However, it was often not clear how the resulting recommendations attained "strong" and "high" ratings despite reviewing the additional materials available in the guideline supplement (Cook et al. 2016b).

For example, the first recommendation calls for universal screening of all pregnant and postpartum women for alcohol consumption (Cook et al., 2016a). Proposals for universal screenings require assessment of multiple factors including cost, implication of false positives and false negatives, and the imperative to demonstrate improved outcomes as a function of the proposed screening. The guideline and its supplement contained no critical discussion of the risks and costs of screening all pregnant and postpartum women for alcohol consumption, nor empirical evidence that such an initiative would result in substantial health benefits. It is surprising then that this recommendation was rated as "strong" and the quality of evidence "high" (Cook et al., 2016a). (*Note, the issue questioned here is the impact of screening, not the impact of reducing alcohol consumption in pregnancy).* This is unfortunately similar to other well-intentioned promotions of large-scale psychosocial risk screening which lack critical scrutiny (McLennan & MacMillan, 2016). An informative exception is the thorough deliberations by the Canadian Task Force on Preventive Health Care regarding systematic depression screening in primary care (Thombs, et al., 2012).

In contrast to the number of strong/high ratings in the Canadian guideline, similar recommendations in the Australian (Watkins et al., 2013) and German (Landgraf et al. 2013) guidelines received consistently lower ratings. For example, the Australian guideline rated the recommendation of requiring a "comprehensive interdisciplinary team" for

diagnostic assessment as conditional and of low quality evidence (Watkins et al., 2013) while, without further explanation or citation of empirical evidence, the Canadian guideline rated this recommendation as strong and of high quality (Cook et al., 2016a).

There are additional concerns related to the application of AGREE to this particular guideline. The guideline authors indicate that the criteria for all 23 AGREE items were met by listing "yes" (Cook et al., 2016b). However, the AGREE manual stipulates that criteria should be rated on a 7-point Likert scale, from "strongly disagree" to "strongly agree" (Brouwers et al., 2013). The authors' decision to reduce this to a dichotomous "yes/no" classification may have obscured the extent of supporting evidence, or lack thereof.

Critique 4: Utility of FASD specific recommendations for management and follow-up

A fourth concern relates to management and follow-up recommendations. Consistent with a very thin evidence base for FASD specific interventions, the authors fittingly rated the evidence for these recommendations as low. But one might then understandably ask the question "should there be stronger evidence for the benefits of receipt of an FASD diagnosis and/or benefits of specific FASD interventions before disseminating a diagnostic guideline in the first place?"

Presumably the purpose of a specific diagnosis in a clinical setting is to inform the selection of evidence-based interventions that would not otherwise be received if it were not for the receipt of this specific diagnosis. A similar challenge was raised in a paper entitled "Why ask why? Logical fallacies in the diagnosis of Fetal Alcohol Spectrum Disorder" (Price & Miskelly, 2015). This disconnect might be captured by the guideline authors' own algorithm which proposes "developmental care as needed" for the patient that does not meet criteria for FASD (Cook et al., 2016a), a recommendation that presumably could be made for all patients whether or not they have PAE or have met the proposed FASD diagnostic criteria.

Although the evidence-base is thin for FASD specific interventions, this need not lead to therapeutic nihilism. Mental health symptoms and disorders in those receiving an FASD diagnosis might still be addressed with established evidence-based interventions for given mental health problems. For example, a study of standard medication treatment of ADHD symptoms in a cohort of children diagnosed with FASD demonstrated substantial symptom improvement (Doig, McLennan, Gibbard, 2008). Similarly, a social skills intervention which had already demonstrated a positive impact in a non-FASD mental health population (Frankel, et al., 2010) also demonstrated positive impacts with a sample of children diagnosed with FASD (Reid, et al., 2015). These findings may suggest that a mental health approach focused on symptom clusters to inform treatment provision may continue to be reasonable rather than an approach driven by hypothesized etiological factors.

Conclusions

The new guideline has not provided clarity or compelling new evidence to reduce the confusion around the pattern and strength of the relationship between PAE and many of the neurodevelopmental criteria. Further, the new guideline does not shed light on the extent to which mental health disorders seen in persons diagnosed with FASD ought to be considered part of FASD, rather than as comorbidities. It is also not clear how an FASD diagnosis will improve outcomes of persons with neurodevelopmental difficulties.

Implementation of guideline recommendations has health care service planning and delivery implications. The potential for service and policy distortions in pursuing carved-out separate service approaches for persons diagnosed with FASD versus integrated services based on matching individual needs to evidence-based interventions has previously been raised (McLennan, 2010). Such concerns were not addressed by the new Canadian guideline.

The rigour of practice guidelines needs to be improved. One proposed approach to improve the quality of guidelines is to better operationalize a clear analytic framework to strategically inform the development of guidelines as described elsewhere (Woolf, Schünemann, Eccles, Grimshaw, & Shekelle, 2012). Within such an analytic framework there is a call to be "as explicit as possible in defining outcomes of interest…[and determining] …what specific outcomes need to be affected to arrive at a recommendation" (p.2) (Woolf et al., 2012). Unless we increase the level of scrutiny of our well-intentioned ideas and recommendations, we will fail to move forward in reducing the confusion in this and other health fields which may ultimately impede the delivery of effective care to those in need.

Acknowledgements / Conflicts of Interest

The authors have no conflicts of interest to disclose.

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