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Pratiques éducatives des parents d'enfants ayant un TDA/H : Le point de vue des parents et d'un observateur

par
Julie Lessard

Département de psychologie
Faculté des arts et sciences

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présentée par :
Julie Lessard

a été évaluée par un jury composé des personnes suivantes :

Annie Bernier, président-rapporteur

Sylvie Normandeau, directrice de recherche

Mireille Joussemet, membre du jury

Marie-Claude Guay, examinateur externe

Annie Bernier, représentant du doyen

RÉSUMÉ

Cette thèse s'intéresse à la mesure des pratiques éducatives et à leur capacité à rendre compte de ces pratiques. Notamment, la sensibilité des instruments à rendre compte des changements dans les pratiques éducatives suite à un programme d'entraînement aux habiletés parentales est abordée tout en tenant compte des facteurs déterminants de ces pratiques. Le corps de cette thèse est composé de deux articles. L'objectif de la première étude consiste à comparer deux instruments de mesure fréquemment utilisés pour mesurer les pratiques éducatives. Les deux instruments, comparés sur la base de données empiriques, sont le *Parenting Practices Interview* (PPI), un instrument développé afin de mesurer les changements suite au programme d'entraînement aux habiletés parentales Ces Années Incroyables, et l'*Alabama Parenting Questionnaire* (APQ). Le premier s'adresse aux parents d'enfants de 3 à 8 ans alors que le second cible les parents d'enfants d'âge scolaire. Cent vingt parents ont complété le PPI et l'APQ. Des analyses corrélationnelles, une analyse en composante principale et des corrélations canoniques ont été utilisées afin de comparer les différentes pratiques mesurées par ces deux instruments. Les résultats indiquent que ces deux instruments mesurent sensiblement les mêmes pratiques parentales. Quelques sous-échelles du PPI ne sont pas mesurées par l'APQ et représentent des pratiques éducatives additionnelles. Puisque ces deux instruments mesurent sensiblement les mêmes pratiques, le choix du questionnaire devrait être fait en fonction de l'objectif de l'étude (p.ex. évaluer l'efficacité du programme Ces Années Incroyables ou non), de la facilité d'utilisation de l'instrument et de l'âge des enfants. Le deuxième article a pour objectif d'évaluer les changements dans les pratiques éducatives suite à la participation des parents à un programme d'entraînement aux habiletés parentales (PEHP) à l'aide d'une grille d'observation spécifiquement développée dans le cadre de ce projet. De plus, cette

étude vise à identifier les facteurs modérateurs du changement dans les pratiques éducatives telles certaines caractéristiques de l'enfant et des parents. Soixante-dix-sept familles ayant un enfant de 6 à 9 ans avec un trouble du déficit d'attention/hyperactivité (TDA/H) ont été retenues pour cette étude. Les familles ont participé soit au PEHP, soit elles ont reçu du soutien téléphonique (ST), ou elles ont continué à recevoir les services dans la communauté. Les pratiques éducatives ont été évaluées avant et après l'intervention à l'aide d'une mesure observationnelle. Les résultats indiquent que seuls les parents ayant participé au PEHP utilisent davantage de pratiques positives et ont diminué les pratiques sévères et négatives suite à l'intervention. De plus, le sous-type de TDA/H, la présence ou non de comorbidité chez l'enfant et le cumul de risque à l'intérieur d'une famille, calculé à partir de caractéristiques des parents, ne modèrent pas le changement suite à l'intervention. Cette étude démontre donc la capacité de la mesure observationnelle à détecter des changements suite à l'intervention de même que l'efficacité du PEHP auprès des familles d'enfants d'âge scolaire ayant un TDA/H.

Mots-clés : Pratiques éducatives, mesures autorapportées, mesure observationnelle et programme d'entraînement aux habiletés parentales.

ABSTRACT

The purpose of this thesis was to examine various measures of parenting practices and their ability to account for these practices. The instrument's sensitivity to changes following a parent training program is also examined while taking into account potential moderators of treatment response. Two studies constitute the body of this thesis. The first study compared two parenting practices questionnaire on the basis of empirical data. The Parenting Practices Interview (PPI) is a self-report questionnaire for 3 to 8-year old children used to evaluate changes in parenting practices following a parent training program (PTP). The Alabama Parenting Questionnaire (APQ) is a self-report questionnaire for school-age children that has been used for multiple research purposes. One hundred and twenty parents completed both the PPI and APQ. Correlation analyses, principal component analysis and canonical correlations were performed, with results indicating that the PPI and APQ measure similar parenting practices. Only a few scales from the PPI were not measured by the APQ and represented additional content. Because both measures cover the same parenting practices aspects equally well, choice of questionnaire should be based on purpose of study, practicality and age of children. The second study examined changes in parenting practices following a parent training program for families of school-age children diagnosed with attention-deficit/hyperactivity disorder (ADHD). Changes were examined with an observational measure specifically created for this project. Seventy-seven families were assigned to either the *Incredible Years* parent training program (PTP), a support phone call group (SPC), or to a community services (C) control group. Parenting practices were assessed before and after the intervention through direct observations. Results showed that parents in the PTP group reduced the percentage of harsh/negative

parenting practices and increased the percentage of positive parenting practices used following the intervention while parents from the other two groups did not change. In addition, ADHD subtypes, comorbidity and cumulative risks based on parent's characteristics did not moderate treatment response. Findings from this study show that the new observational measure is sensitive enough to detect changes following a PTP and also indicate that a parent training program is a valuable intervention for families of school-age children diagnosed with ADHD.

Keywords : Parenting practices, self-report measures, observation and parent training program.

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Article 1

LISTE DES SIGLES ET ABRÉVIATIONS

ADHD	*Attention Deficit Hyperactivity Disorder*
ADHD/C	*ADHD Combined Type*
ADHD/HI	*ADHD Predominantly Hyperactive/Impulsive*
ADHD/IA	*ADHD Predominantly Inattentive*
ANCOVA	*Analysis of Covariance*
ANOVA	*Analysis of Variance*
APQ	*Alabama Parenting Questionnaire*
C	*Community Services Control Group*
CD	*Conduct Disorder*
CRI	*Cumulative Risk Index*
CRS-R	*Conners' Rating Scale Revised*
DISC4.0	*Diagnostic Interview Schedule for children*
DPICS	*Dyadic Parent-Child Interaction Coding System*
ICC	*Intraclass Correlation Coefficients*
IY	*Incredible Years*
MTA	*Multimodal Treatment Study of Children with ADHD*
ODD	*Oppositional Defiant Disorder*
OSLC	*Oregon Social Learning Center*
PEHP	Programmes d'Entraînement aux Habiletés Parentales
PCA	*Principal Component Analysis*
PPI	*Parenting Practices Interview*
PTP	*Parent Training Program*
SES	*Socioeconomic Status*
SPC	*Support Phone Call Group*
ST	Soutien Téléphonique
TDA/H	Trouble du Déficit de l'Attention / Hyperactivité

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INTRODUCTION

Le processus de socialisation des enfants est influencé par plusieurs éléments de la famille (p. ex. : la fratrie, la composition de la famille, la famille élargie, etc.) et du contexte social (p. ex. : la garderie, l'école, les amis, la communauté, etc.). Toutefois, les parents sont les premiers agents de socialisation des enfants et constituent la source d'influence sociale la plus importante déterminant l'adaptation des enfants (Shaffer, Wood, & Willoughby, 2005). La contribution des parents au développement de leur enfant et à leur adaptation sociale s'effectue notamment par leurs attitudes et leurs comportements. Sous le chapeau du parentage s'y retrouve les styles parentaux et les pratiques parentales. Les styles parentaux sont un ensemble d'attitudes des parents envers l'enfant qui définissent le climat émotionnel et les comportements des parents (Darling & Steinberg, 1993). Ce concept plus global inclut entre autres les deux éléments que constituent les pratiques parentales. Ces deux éléments des pratiques parentales sont : la qualité affective de la relation parent-enfant et la nature des pratiques éducatives. La présente traite des pratiques parentales et plus spécifiquement aux pratiques éducatives.

En premier lieu, la qualité affective de la relation parent-enfant peut porter différents noms selon les auteurs. Les termes « soutien parental » (Bush & Peterson, 2008) et « acceptation/sensibilité » (Shaffer et al., 2005) sont souvent utilisés et caractérisent une relation parent-enfant chaleureuse qui se développe par l'expression d'émotions telles des bisous, des câlins, l'expression verbale du sentiment d'amour, l'acceptation de l'autre, ainsi que par des actions telles que jouer à un jeu, rendre un service, ou aider (Locke & Prinz, 2002).

En second lieu, les pratiques éducatives sont les moyens mis en place par les parents afin notamment d'augmenter les comportements appropriés des enfants (p. ex. : répondre

aux demandes des parents, partager, ou jouer calmement) et de diminuer l'apparition de comportements inappropriés (p. ex. : refuser d'obéir aux demandes des parents ou avoir des comportements agressifs envers les autres) (Locke & Prinz, 2002). Ce concept porte aussi plusieurs noms tels « contrôle parental des comportements » (Bush & Peterson, 2008) ou « demandes/contrôle » (Shaffer et al., 2005). Les pratiques éducatives se caractérisent par la souplesse ou la rigidité des moyens, la constance dans l'application des moyens (cohérence et stabilité) ainsi que le choix des méthodes disciplinaires telle l'utilisation de punitions physiques ou de pratiques positives comme les encouragements et les récompenses (Chamberlain & Patterson, 1995).

Par les pratiques parentales, les parents cherchent à encourager le développement de compétences sociales chez leurs enfants afin d'avoir une bonne adaptation dans leurs relations avec autrui (Bush & Peterson, 2008). De plus, les parents cherchent à inhiber le développement de comportements externalisés et internalisés tels l'agressivité et l'anxiété. Les compétences sociales des enfants associées à des pratiques parentales positives (par ex. : relation parent-enfant chaleureuse) aideront l'enfant à s'adapter aux différentes situations problématiques alors que le manque de compétence sociale, ou la prévalence de comportements externalisés ou internalisés augmenteront les possibilités que l'enfant vive d'autres difficultés telles des échecs scolaires, des conflits dans la relation parent-enfant (Bush & Peterson, 2008).

Liens entre les pratiques parentales et l'adaptation des enfants

L'utilisation de certaines pratiques parentales est associée au développement de compétences sociales chez les enfants. Entre autres, les parents démontrant un affect positif

et qui renforcent les comportements prosociaux en donnant de l'attention positive à leur enfant ont plus de chance d'avoir des enfants qui ne sont pas agressifs et démontrent davantage d'habiletés d'auto-régulation (Baydar, Reid, & Webster-Stratton, 2003). De plus, une relation parent-enfant chaleureuse lorsque l'enfant est en jeune âge influence directement le développement des compétences sociales (Steelman, Assel, Swank, Smith, & Landry, 2002). À travers des comportements tels des félicitations, des gestes d'affections, de l'attention positive à l'enfant et une sensibilité face aux besoins de l'enfant, le parent favorise le développement de bonnes compétences sociales chez les enfants à 12 et 54 mois. De plus, les parents ayant une relation chaleureuse ont tendance à utiliser moins de pratiques éducatives comme les punitions physiques ce qui contribue d'autant plus au développement de compétences sociales. En général, les pratiques éducatives positives renforcent les comportements prosociaux des enfants ainsi que l'obéissance (Wahler & Meginnis, 1997).

À l'inverse, certaines pratiques parentales sont associées au développement de difficultés de comportements. Entre autres, l'utilisation de la punition corporelle, la sévérité et la fréquence des pratiques éducatives coercitives sont associées au développement de difficultés de comportements chez les enfants (Patterson, Reid, & Dishion, 1992). Les pratiques sévères sont associées au développement de problèmes de comportement, de comportements antisociaux ainsi qu'à un faible niveau de compétence sociale chez les enfants (Hawkins et al., 1998) De plus, les mères d'enfant agressif se distinguent des mères n'ayant pas d'enfant agressif dans l'utilisation de certaines pratiques éducatives (Dumas, 2002). Entre autres, elles ont tendance à être incohérentes, c'est-à-dire qu'elles ignorent les comportements positifs de l'enfant alors qu'elles donnent de l'attention aux comportements

négatifs et coercitifs de celui-ci. L'incohérence dans l'utilisation des pratiques éducatives s'observe aussi par les menaces non suivies de conséquences et l'ignorance de comportements inappropriés. Dans les rapports de force entre l'enfant agressif et la mère, l'enfant est favorisé puisqu'il utilise des comportements agressifs afin d'obtenir ce qu'il désire alors que la mère n'impose pas de limites efficaces. Les comportements internalisés chez les enfants ont aussi été associés à l'utilisation de diverses pratiques parentales (Dumas, 2002). Par exemple, des comportements excessivement contrôlant de la part des mères ainsi que très peu d'affection démontrée envers l'enfant sont des comportements observés chez les mères de jeunes enfants manifestant un haut niveau d'anxiété.

Que ce soit au niveau des comportements internalisés ou externalisés, il est à noter que les pratiques parentales utilisées par les mères ont été observées principalement en présence de leur enfant et sont donc spécifiques à cette même relation mère-enfant (Dumas, 2002). Lorsque les mères d'enfant agressif ont été mises en situation de jeu avec des enfants non agressifs qui servaient de groupe de comparaison, celles-ci étaient aussi constantes et positives que les mères de ces enfants. De plus, des résultats similaires ont été démontrés pour les mères d'enfant anxieux. Celles-ci, lorsque jumelées avec un enfant compétent, démontraient un niveau de contrôle approprié et un niveau d'affection élevé. Ces observations sont importantes puisqu'elles démontrent la nature transactionnelle des interactions parent-enfant.

Cette relation transactionnelle s'observe aussi chez les parents d'enfants ayant un TDA/H. Ces enfants présentent des symptômes qui sont intrusifs, demandant et peuvent augmenter le niveau de stress des parents (Johnston & Mash, 2001). De plus, le TDA/H est souvent associé à d'autres troubles tels les troubles de la conduite, le trouble oppositionnel

et l'anxiété (Daley, 2006). Ces enfants présentent donc une multitude de caractéristiques pouvant évoquer des réactions négatives de la part des parents et influencer les pratiques parentales. Les études démontrent que, comparativement aux parents d'enfants n'ayant pas de TDA/H, les parents d'enfants ayant un TDA/H sont moins impliqué de manière positive dans les activités de leur enfant, moins affectueux, plus sévère et inconstant dans l'application des pratiques éducatives, et utilisent des pratiques plus coercitives (Frick, 1994; Patterson, 2002). Ainsi, les pratiques parentales ne sont pas uniquement le produit du parent, mais bien de l'inter-influence de plusieurs facteurs. La prochaine section traite donc des différents facteurs pouvant influencer les pratiques parentales.

Facteurs déterminants des pratiques parentales

Selon le modèle transactionnel (Sameroff, 1975; Sameroff & Mackenzie, 2003), le fonctionnement individuel est influencé par l'interaction continue et dynamique de l'individu avec un contexte changeant. Dans le contexte familial, les interactions entre les parents et les enfants évoluent avec le temps et deviennent plus complexes. Un des modèles expliquant le développement précoce de difficultés de comportement chez les enfants à partir des interactions parent-enfant est celui de Patterson (1982, 2002). Le modèle coercitif postule qu'un cycle de coercition s'établit de la manière suivante :

> 1- Un attachement insécure dès les premiers mois de vie (lequel dépend à la fois du tempérament de l'enfant et des caractéristiques personnelles de la mère et de l'enfant); 2- des échanges réciproques de nature coercitive et punitive, dans lesquels les activités et les expressions positives et affectueuses sont peu nombreuses; 3- une discipline parentale à la fois punitive et

> inconstante, fluctuant selon l'humeur du parent et le comportement de l'enfant; 4- un manque d'opportunités et d'encouragements nécessaires au développement chez l'enfant d'un ensemble de compétences sociales affectives et instrumentales (Gagnon & Vitaro, 2000, p.244).

Selon ce modèle, les pratiques éducatives utilisées ainsi que l'absence d'une relation parent-enfant chaleureuse contribuent au développement des difficultés de comportement chez l'enfant. Certaines caractéristiques de l'enfant comme le tempérament peuvent le rendre plus « difficile » et les parents, avec leurs propres caractéristiques, développent alors des patrons de comportements selon leur capacité à composer avec ce tempérament de façon positive ou non.

Bien que les pratiques parentales soient influencées par l'interaction entre le parent et l'enfant, celles-ci peuvent aussi être influencées par les interactions avec la famille et le contexte social. Dans son modèle, Belsky (1984) met en valeur les multiples facteurs influençant les pratiques parentales.

Selon Belsky, trois catégories de facteurs détermineraient les pratiques parentales : les ressources psychologiques ou les caractéristiques individuelles du parent, les caractéristiques individuelles de l'enfant, et les sources de stress ou de soutien de l'environnement. La première catégorie de facteurs contient la trajectoire développementale de l'individu, sa personnalité, son niveau de maturité ainsi que le bien-être ou les difficultés au niveau de la santé mentale du parent. Un adulte ayant une bonne santé mentale devrait être en mesure de démontrer la sensibilité nécessaire auprès de l'enfant afin de promouvoir un développement optimal. En contrepartie, la dépression, une personnalité antisociale ou une expérience d'abus ou de négligence pendant l'enfance sont des facteurs pouvant rendre

le parent plus vulnérable au stress. Ces parents auraient ainsi tendance à être plus irritables, à critiquer davantage et à être plus punitifs auprès de leur enfant (Webster-Stratton, 1990). La deuxième catégorie de facteurs inclut la contribution de l'enfant, qui agirait de façon transactionnelle sur les pratiques parentales. Selon Belsky (1894), les caractéristiques des enfants les rendant potentiellement plus « difficiles » influencent la quantité et la qualité des soins qu'ils reçoivent. Finalement, la troisième catégorie inclut les éléments de soutien et de stress provenant du réseau social de l'individu, de la relation avec le conjoint et du milieu de travail. Ces éléments extérieurs à l'individu influencent le sentiment de bien-être du parent et sa santé mentale qui en retour influencent les pratiques des parents. Selon ce modèle, les ressources psychologiques du parent jouent un rôle protecteur de la relation parent-enfant. Ces ressources, lorsqu'optimales, permettent au parent de continuer à utiliser des pratiques efficaces malgré le contexte d'adversité provenant de l'environnement et des caractéristiques individuelles de l'enfant. Ces ressources constituent les facteurs les plus déterminants des pratiques parentales. L'environnement et finalement, les caractéristiques de l'enfant influenceront les pratiques parentales. Bien que Belsky identifie l'importance relative des catégories, il est difficile d'établir l'influence particulière de chacun des facteurs permettant des pratiques efficaces et un développement optimal chez l'enfant.

La présente thèse rédigée par article s'intéresse à la mesure des pratiques parentales et plus spécifiquement des pratiques éducatives. Cette thèse vise à examiner la complémentarité de différents instruments de mesure. Entre autres, la complémentarité au niveau de l'évaluation des pratiques ainsi que de la complémentarité à rendre compte du changement. De plus, la sensibilité des instruments à rendre compte des changements dans

les pratiques éducatives est abordée tout en tenant compte des facteurs déterminants des pratiques parentales.

Les questions de recherche

L'objectif de la première étude consiste à comparer deux instruments de mesure des pratiques éducatives utilisés fréquemment pour mesurer les pratiques éducatives. Puisqu'il existe une panoplie d'instruments de mesure pour ces pratiques, il peut être difficile de faire un choix éclairé. Les deux instruments, comparés sur la base de données empiriques, sont le *Parenting Practices Interview* (PPI) et le *Alabama Parenting Questionnaire* (APQ). Une question s'avère donc importante : ces deux instruments mesurent-ils les mêmes pratiques éducatives et le même contenu? La comparaison des instruments permettra d'être plus parcimonieux lors du choix d'un instrument ou même de sous-échelles pour les projets de recherche ultérieurs et ultimement de l'évaluation préintervention et postintervention des programmes d'entraînement aux habiletés parentales (PEHP).

Le deuxième article a pour objectif d'évaluer les changements dans les pratiques éducatives suite à la participation des parents à un PEHP à l'aide d'une grille d'observation spécifiquement développée dans le cadre de ce projet. Les données observationnelles sont considérées par plusieurs comme étant la méthode à privilégier pour mesurer les pratiques éducatives (Aspland & Gardner, 2003; Chamberlain & Patterson, 1995). De plus, cette étude vise à identifier, parmi les facteurs suggérés par le modèle de Belsky, ceux qui ont un effet modérateur sur le changement dans les pratiques éducatives telles certaines caractéristiques de l'enfant, des ressources psychologiques du parent ainsi que la présence de certaines sources de stress dans l'environnement du parent.

Ces études s'inscrivent dans le cadre d'un projet de recherche dirigé par Mme Sylvie Normandeau, professeure titulaire à l'École de Psychoéducation de l'Université de Montréal. Le projet vise à évaluer l'efficacité d'un programme d'entraînement aux habiletés parentales pour des parents ayant un enfant avec un trouble du déficit de l'attention / hyperactivité (TDA/H).

ARTICLES DE LA THÈSE

ARTICLE 1

Empirical Comparison of Two Parenting Practices Questionnaires: APQ and PPI

Julie Lessard and Sylvie Normandeau

Université de Montréal

Abstract

This study compared two parenting practices questionnaire on the basis of empirical data. The Parenting Practices Interview (PPI) is a self-report questionnaire for 3 to 8-year old children used to evaluate changes in parenting practices following a parent training program (PTP). The Alabama Parenting Questionnaire (APQ) is a self-report questionnaire for school-age children that has been used for multiple research purposes. One hundred and twenty parents completed both the PPI and APQ. Correlation analyses, principal component analysis and canonical correlations were performed, with results indicating that these instruments measure similar parenting practices. Only a few scales from the PPI were not measured by the APQ and represented additional content. Because both measures cover the same parenting practices equally well, choice of questionnaire should be based on purpose of study, practicality and age of children. Replication with a larger sample is necessary.

Key words: Parenting practices, questionnaires, PPI, APQ, comparison

Introduction

Parenting practices are a relevant issue in developmental psychology because of their strong connection with children's cognitive, emotional and social development. In their 20 year review of parenting practices measures, Locke and Prinz (2002) found that nearly half of the instruments available were in self-report format. Although other types of instruments such as interviews and observational techniques may be more representative of actual parenting behaviors (Holden, 2001), the number of self-report instruments available demonstrates their importance in research. The practicality of self-reports makes it a good contender for researchers compared with other measurement techniques.

Studies evaluating the efficacy of parent training programs rely on parental self-reports. However, with the numerous instruments available, selecting the right measure becomes a task in itself. On the one hand, replication and comparison of results is simpler and more accurate when using the same measures. On the other hand, choosing a valid instrument that has good psychometric properties increases confidence in the results.

Among the various instruments available, it is often possible to find that many of the instruments appear to measure the same parenting practices through the similarities in their subscales and in fact, do not. The purpose of this study is to compare two parenting practices instruments on the basis of empirical data.

Choosing the right instrument requires a considerable amount of thought and judgement on the part of the researcher or clinician. Ware, Brook, Davies and Lohr (1981) offer some suggestions, applied here to this topic. First, the reasons for studying parenting practices must be identified. When studying the effect of a specific intervention, Ware et al. (1981) suggest to measure the likely effects or changes of that intervention. Measuring

something that the intervention does not aim to change or cannot change within that specific time frame will not provide valuable information. Second, aspects of parenting which are of interest, such as parenting practices or parenting styles, must be identified. It is necessary to have a clear definition of that concept and a good understanding of how it is measured in order to choose the right instrument. Finally, assessing how suitable the measures are can be accomplished by considering practicality, reliability and validity. Practicality should be assessed according to how much of a burden the measure is for the respondent. Administration times, rates of missing responses or refusal rates are indicators of an instrument's burden. In addition, researchers should choose the least complicated instruments in terms of scoring and interpretation. Psychometric properties are essential and yet, it may be difficult to find this information on many instruments, especially related to their validity. There may be a way around the lack of research on the validity of the different measures by assessing face and content validity. For example, different instruments can have subscales labelled the same which do not represent the same variable and vice versa, have two subscales that measure the same variable but yet label it differently. It is therefore important to assess the content of all measures in order to avoid confounded definitions. According to Ware et al. (1981), while the availability of information regarding the validity of a measure is an important factor in the selection of an instrument, this alone should not dictate choice. Reviewing measurement research findings will help determine whether or not a measure is valid for the purpose of a particular study.

These suggestions, based on health status measures, are missing an important element for the study of parenting practices and the field of developmental psychology. An instrument has to be developmentally appropriate for the respondent. In the case of parenting practices, measures have to be developmentally appropriate for the age of the

child. The use of certain parenting practices may only be appropriate for children up to a certain age and it should be reflected in the instrument.

The purpose of this paper is to compare two parenting measures. The two instruments under study are the Parenting Practices Interview (PPI; Webster-Stratton, 1998a) and the Alabama Parenting Questionnaire (APQ; Shelton, Frick, & Wootton, 1996). Both instruments were used in a study evaluating the efficacy of the *Incredible Years* (Webster-Stratton, 1998b) parent training program (Normandeau, Letarte, Robaey, & Allard, 2009). The Parenting Practices Interview is a questionnaire for children aged 3 to 8. It is this questionnaire which is recommended by the developer of the program and it is available in three other languages. It was used in a number of studies evaluating the efficacy of this program in the United States and worldwide (e.g., Baydar, Reid, & Webster-Stratton, 2003; Gaspar & Dos Santos e Paiva, n.d.). The use of the PPI makes the results comparable to other studies evaluating the same parent training program. However, the PPI has not been used to evaluate the efficacy of other parenting programs or for other research purposes.

Although it is useful to compare results with other studies evaluating the same program, other instruments presenting good psychometric properties, used more widely in the literature and seemingly measuring the same parenting practices are available. The Alabama Parenting Questionnaire (APQ; Shelton et al., 1996) is one of them. It has well-established psychometric properties and offers researchers with a multi-method (questionnaire and interview format) and multi-informant (parent and child) measuring tool (Locke & Prinz, 2002). The APQ has been used in various types of studies and translated in at least five other languages. Treatment outcome studies evaluating various parenting programs have used the APQ (e.g., August, Lee, Bloomquist, Realmuto, & Hektner, 2003; Lochman & Wells, 2002; Wells et al., 2000). Other studies looking at the association

between parenting practices and conduct problems (e.g., Colder, Lochman, & Wells, 1997; Lengua & Kovacs, 2005) or other measures (e.g., Collin-Vézina, Cyr, Pauzé, & McDuff, 2005; Pfiffner & McBurnett, 2006) have used this instrument.

Although these two instruments represent distinct measuring tools, they share many similarities. These instruments comprise subscales which are labelled similarly: corporal punishment (APQ) and physical punishment (PPI), inconsistent discipline (APQ) and harsh and inconsistent discipline (PPI), etc. The similarities between the instruments bring two issues to the forefront, whether these two instruments are in fact measuring the same parenting practices and if so, which instrument is the more appropriate choice. In order to be parsimonious in choosing an instrument or subscales to measure parenting practices, it is important to understand how these two instruments relate.

The present study aims to compare these two instruments using empirical data. There have been only few comparisons of this kind done before in social sciences (e.g., Andrews, Peters, Guzman, & Bird, 1995; Goodman, & Scott, 1999). Two main questions are investigated: (1) Do the corresponding subscales of each instrument (e.g., the corporal punishment subscale of the APQ and the physical punishment subscale of the PPI) measure the same parenting practices? and (2) Do the two instruments, as a whole, cover the same contents, or are there parenting practices that are covered only by one of the instruments and not by the other? Our findings should help researchers deciding which combination of the two instruments to use in future studies.

Method

Participants

Participants were 120 parents (94 women, 26 men) who took part in a study evaluating the efficacy of *The Incredible Years* parent training program (Webster-Stratton, 1998b) for parents of children with attention deficit hyperactivity disorder (ADHD). Six different cohorts of families participated in this project between January 2003 and June 2007. Parents were referred to this project by health care, educational or social services professionals if they had a child between the age of 6 and 9 who had been diagnosed with ADHD. Participants were included in the study if they satisfied the following criteria: (1) they had a child with a diagnosis of ADHD which was based on the criteria from the Diagnostic and Statistical Manual of Mental Disorders (4th ed. [DSM-IV] American Psychiatric Association, 1994) as assessed by the Diagnostic Interview Schedule for children (DISC4.0; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000), the parent and teacher versions of the Conners' Rating Scale Revised (CRS-R; Conners, 1997), as well as by a psychiatrist from the research team; (2) children presenting other diagnosis usually co-morbid with ADHD were not excluded from the study as long as ADHD was the primary diagnosis; (3) the child was not mentally retarded, did not have a communication or learning disorder, a neurological disorder, tic disorders, Tourette's disorder, an obsessive-compulsive disorder, or was not born prematurely (<35 weeks); (4) the child took medication (methylphenidate) as prescribed; and (5) parents and their child could speak and read French. Participants were predominantly Caucasian French Canadians from the Montreal area. Sociodemographic variables are presented in Table 1.

Assessment of parenting practices

Once families had been selected for the study, a research assistant met with them in their home and provided them with a booklet of questionnaires. Participants were asked to complete the booklet once the research assistant had left and to mail it in before the beginning of the intervention. The APQ and the PPI were part of this booklet which was identical for all participants.

Measures

Parenting Practices Interview (PPI; Webster-Stratton, 1998a). The PPI was adapted from the Oregon Social Learning Center's (OSLC) Discipline questionnaire. It was revised for use with parents of preschoolers and includes discipline style and techniques which the *Incredible Years* parent training program is trying to increase or decrease. The questionnaire includes seven subscales and 80 items that measure appropriate discipline (e.g., If your child hit another child, how likely is it that you would give him/her a brief time out away from family; $\alpha = .82$), harsh and inconsistent discipline (e.g., If your child hit another child, how likely is it that you would discipline him/her by raising your voice – scolding or yelling; $\alpha = .80$), positive verbal discipline (e.g., If your child hit another child, how likely is it that you would discipline him/her by discussing the problem with your child or ask questions; $\alpha = .75$), monitoring (e.g., About how many hours in the last 24 hours did your child spend at home without adult supervision, if any; $\alpha = .54$), physical punishment (e.g., If your child refused to do what you wanted him/her to do, how likely is it that you would give your child a spanking; $\alpha = .76$), praise and incentives (e.g., How often do you praise or compliment your child when s/he behaves well or does a good job; $\alpha = .67$), and clear expectations (e.g., How much do you agree with the following statement: I have made

clear rules or expectations for my child about going to bed and getting up; $\alpha = .66$). The questionnaire includes 7-points and 5-points likert-type subscales as well as multiple choice answers. The syntax structure remains the same throughout the measure and items are formulated in a question form (e.g., How often…? How likely…?). The questions refer to various time-frames such as the past week, the last two days or no specific time-frame. The internal reliability is satisfying. According to Kim, Cain and Webster-Stratton (in press) predictive validity of the PPI has been shown by its sensitivity to the intervention. Other relevant information on the properties and usage of the instrument are provided on the Parenting Clinic Web site (2008). There are no norms available for this measure as it has been developed for their specific research purpose. A new factor analysis is conducted whenever data for a new population is available. This new factor analysis is performed in order to assess the fit of the instrument to that population. Although it is mentioned that subscales seem to be robust across samples (with some minor changes), it is encouraged to conduct a new factor analysis in order to confirm the utility of the subscales for other samples. The 7-factor structure proposed above will be used in this study. An overview of the features of the PPI is given in Table 2 which includes Cronbach's alpha for the current sample.

Alabama Parenting Questionnaire (APQ; Shelton et al., 1996). The APQ has been designed to assess the key aspects of parenting practices that have been associated with disruptive behaviors in school-age children. The APQ was modeled after the OSLC's telephone interview. It is similar to the OSLC's interview in the way that it can be answered either by the parent or the child through a phone interview or a questionnaire; however, it has an important distinction from the original OSLC interview. The APQ's questions have been designed to overcome one of the OSLC interview's limitation, which

is that different questions were used to assess the same construct across the various methods and informants. Having equivalent questions across methods and across informants allows for the comparison of the various assessment modalities. The parenting practices measured in the parent self-report questionnaire are involvement (e.g., You help your child with his/her homework; $\alpha = .80$), positive parenting (e.g., You reward or give something extra to your child for obeying you or behaving well; $\alpha = .80$), poor monitoring/supervision (e.g., Your child is at home without adult supervision; $\alpha = .67$), inconsistent discipline (e.g., You threatened to punish your child and then do not actually punish him/her; $\alpha = .67$), and corporal punishment (e.g., You spank your child with your hand when he/she has done something wrong; $\alpha = .46$). Within the APQ's 42 items, 7 items comprise another subscale called other discipline practices. These items were added to the questionnaire so that the corporal punishment items were not asked in isolation of other various forms of discipline and therefore perceived as negative. This subscale is not used for research purposes. Affirmative statements (e.g., You talk (ask, spank) ...) are answered on a 5-point likert subscale. Throughout the questionnaire, there is no exact time-frame specified to the respondent. The internal consistency for all five subscales is moderate to high with the exception of the corporal punishment subscale. The reliability and validity of the APQ was originally assessed by Shelton and colleagues (1996). Good convergent validity was established by looking at the APQ scores across methods and informants. The correlations among APQ subscales within each assessment modalities were used to test divergent validity. The three negative subscales (poor monitoring/supervision, inconsistent discipline and corporal punishment) had good divergent validity. On the other hand, the involvement and positive parenting subscales were highly correlated across informants and format. This led Shelton and colleagues (1996) to believe that the two subscales may be

measuring only one parenting practice. In a sample of families of clinic-referred and community volunteer children ages 6-13, scores have been found to discriminate between families of children with disruptive behavior disorders from normal families. Dadds, Maujean and Fraser (2003) also evaluated the psychometric properties of the parent self-report questionnaire in a community sample of 4-9 year-old Australian children and reported similar results. Internal consistency of the subscales ranged from .55 to .77 and the questionnaire showed good test-retest reliability. Similar to previous results, there was a strong relationship between the two positive subscales which indicates overlap in these two constructs. Good validity was also reported in terms of predicted relationships with child variables such as conduct problems and behavioral inhibition. In other studies, the APQ subscales have also been shown to be sensitive to parent training programs (Lochman & Wells, 2002; Wells et al., 2000). An overview of the features of the APQ is given in Table 2 which includes Cronbach's alpha for the current sample.

Data analysis

Scores on the APQ and PPI subscales were computed according to the instructions of the developers with the exception of the APQ's poor monitoring/supervision subscale. The latter subscale was reverse coded such that a high score meant good monitoring/supervision. Scores for both instruments were transformed on a subscale from 0 to 100 in order to have comparable scores.

Analysis of question 1 (Do the corresponding subscales of each instrument measure similar parenting practices?) was performed by correlation analyses as well as the Bland-Altman method (Bland & Altman, 1986). First, Pearson correlation coefficients (r) were performed in order to examine the association between the corresponding subscales of the

two instruments. According to Streiner and Norman (2003), correlations among measures of the same construct should fall between .40 and .80. Lower correlations suggest one of two options, either the reliability of one of the measures is probably too low or the two subscales measure something different. Second, intraclass correlation coefficients (ICC) were performed in order to assess the agreement between the corresponding subscales. A paired-samples t-test was also performed in order to assess whether there was a statistically significant difference in the mean scores between the corresponding subscales. Finally, the Bland-Altman method which serves to assess agreement between two methods of measurement in a visual fashion was performed. It is a plot of the difference between the subscales against their mean. With this plot, much of the variation between subjects is being removed and the measurement error is left. Since the measurement errors are likely to follow a normal distribution, 95% of differences should lie within two standard deviations. The mean of the difference between the subscales as well as the mean ± 2 standard deviations are identified in order to estimate the limits of agreement.

Analysis of question 2 (Do the two instruments, as a whole, cover the same contents, or are there parenting practices that are covered only by one of the instruments and not by the others?) was performed with principal component analysis (PCA) as well as canonical correlations. The principal component analysis provides an empirical summary of the underlying relationship among the subscales of the two instruments. Since all scores have been transformed to be on the same subscale, the covariance matrix was used. Following the PCA, canonical correlations between subscales grouped in the various components were performed using SPSS CANCORR.

Results

Analysis of question 1: Do the corresponding subscales of each instrument measure similar parenting practices?

To study the relationship between subscales of the two instruments, Pearson correlations coefficients were computed. Results are presented in Table 3. Results from the Pearson correlations are discussed below with the presentation of the ICC and the t-test results for each pair of subscales with the assessment of agreement through the Bland-Altman method.

The first pair measured inconsistent discipline and included the APQ's inconsistent discipline and the PPI's harsh and inconsistent discipline subscales. When looking at the items themselves, most items from the APQ subscale have a counterpart in the PPI subscale. The similarities can easily be seen in the content of the two subscales (e.g., The punishment you give your child depends on your mood? versus How often the kind of punishment you give your child depends on your mood?). It is important, however, to note here that the PPI subscale also includes items pertaining to harsh discipline. Out of the 15 items that comprises this subscale, 5 items are mostly relevant to harsh parenting (e.g. How often do you show anger when disciplining your child?).

According to Cohen's (1988) guideline for Pearson correlations, there is a strong relationship between these two subscales ($r = .68$). The ICC is .66 which is considered, according to Landis and Koch's (1977) classification, a substantial agreement. A paired-samples t-test was conducted and showed a significant difference between the APQ subscale ($M = 38.52$, $SD = 13.62$) and the PPI subscale ($M = 34.29$, $SD = 10.51$), $t\,(119) = 4.61$, $p < .0005$. Thus, there is a consistent bias between the two subscales with scores on

the APQ subscale being higher. Figure 1 displays the agreement between the inconsistent discipline subscales. The two subscales have a good agreement with only few dots outside of the limits of agreement (4/120).

The second pair measured parental monitoring and included the APQ's monitoring/supervision and the PPI's monitoring subscales. The item content of these two subscales is slightly different. The difference may most likely be due to the fact that the APQ is designed for older children. For example, items such as "Your child fails to leave a note or to let you know where he/she is going" or "Your child stays out in the evening past the time he/she is supposed to be home" reflect behaviors of older children and not preschoolers. Accordingly, the PPI has items which apply to younger children, such as "What percentage of the time do you know where your child is when he/she is away from your direct supervision".

The Pearson correlation coefficient implies a strong relationship between the two subscales (r = .53). The ICC is .49 which shows a moderate agreement between the two subscales. The paired-samples t-test showed a significant difference between the APQ subscale (M = 90.72, SD = 9.56) and the PPI subscale (M = 77.86, SD = 14.13), t (116) = 11.41, $p < .0005$. There is a consistent bias between the two subscales with scores on the APQ subscale being higher than scores on the PPI subscale. Figure 2 displays the agreement between the monitoring subscales. The two subscales do not show a good agreement with more than 5% of the dots outside of the limits of agreement (6/117).

The third pair measured physical punishment and included the APQ's corporal punishment and the PPI's physical punishment subscales. The items for these two subscales are quite similar using words such as "spank" and "slap". The only noteworthy difference is one of the items in the APQ subscales which specify hitting the child with a belt or other

objects. This item may represent a much more negative form of physical punishment for the respondent.

There is a strong relationship between the two subscales (r = .66). The ICC is .56 which shows a moderate agreement between the two subscales. The paired-samples t-test showed a significant difference between the APQ subscale (M = 9.80, SD = 10.33) and the PPI subscale (M = 4.51, SD = 5.64), t (118) = 7.38, p < .0005. There is a consistent bias between the two subscales with scores on the APQ subscale being higher than scores on the PPI subscale. Figure 3 displays the plot of agreement between the two subscales. There are few dots due to the number of individuals with a similar score. According to the Bland-Altman plot, the two subscales do not have a good agreement as more than 5% of the individual are outside the limits of agreement (7/119).

The final corresponding pair measures positive parenting and included the APQ's positive parenting and the PPI's praise and incentives subscales. Items from these two subscales are quite similar using words such as "praise", "compliment", "hug", "kiss", and "reward".

The strength of the relationship is moderate (r = .49) and the ICC (.49) indicates a moderate agreement between the two subscales. According to the paired-samples t-test, there is a significant difference between the APQ subscale (M = 78.58, SD = 12.08) and the PPI subscale (M = 57.69, SD = 12.40), t (1198) = 18.50, p < .0005. There is a consistent bias between the two subscales with scores on the APQ subscale being higher than scores on the PPI subscale. Figure 4 displays the plot of agreement between the two subscales. The two subscales have a fairly good agreement with less than 5% of the individual outside the limits of agreement (4/120).

Pearson correlations show moderate to strong association between all pairs with coefficients above .04 which indicates, according to Streiner and Norman (2003), that the paired subscales measure the same attribute. Results of the ICC are similar with moderate to substantial agreement. T-test results show a consistent bias in all corresponding subscales which may be due to the score transformation. APQ scores are higher on all corresponding subscales than PPI scores. Two of the four corresponding pairs show good agreement according to the Bland-Altman method. The two pairs (physical punishment and monitoring) who do not show good agreement with the Bland-Altman method also show more differences in the item content.

Analysis of question 2: Do the two instruments, as a whole, cover the same aspects/contents, or are there aspects that are covered only by one of the instruments and not by the other?

Principal component analysis (PCA) was performed with total scores on all 12 subscales. Prior to the analysis, the suitability of data for factor analysis was assessed. The correlation matrix showed the presence of many coefficients of .3 and above. The Kaiser-Meyer-Oklin value was .68, exceeding the value of .6 recommended (Kaiser, 1974). Finally, the Bartlett's Test of Sphericity (Bartlett, 1954) reached statistical significance. This information supported the factorability of the data.

PCA was performed using the matrix of variance/covariance. The strategies used for factor retention was the scree plot from Catell (1966) as well as the eigenvalue superior to 1 rule (Kaiser, 1960). Inspection of the scree plot revealed a clear break after the fourth component. There was also the presence of four components with eigenvalues exceeding 1, explaining 28.19 %, 13.40 %, 12.31 % and 8.56 % of the variance respectively. Based on

both techniques, a structure with four factors was retained. The varimax rotation was performed and the rotated solution is presented in Table 4. The four-component solution explains a total of 62.45 % of the variance.

The first four subscales in Table 4 compose the first component. A canonical correlation was performed between two sets of variables composed of these subscales. The first set of variables included the two PPI subscales (praise and incentives and positive verbal discipline) while the second set of variables included the two APQ subscales (positive parenting and involvement).

The first canonical correlation was .63 (39 % overlapping variance) indicating a strong relationship between the two sets. The remaining canonical correlation was effectively zero. The first χ^2 with both canonical correlation included was significant (χ^2 (4, N = 120) = 59.58, $p < .001$), while the χ^2 with the first canonical correlation removed was not significant (χ^2 (1, N = 120) = 1.83, p = .176). Since the latter χ^2 was not statistically significant, the first pair of canonical variates accounted for the significant relationships between the two sets of variables.

Data on the first pair of canonical variates appear in table 5. Shown in the table are correlations between the variables and the canonical variates, standardised canonical variate coefficients, within-set variance accounted for by the canonical variates (percent of variance), redundancies, and canonical correlation. The first canonical variate in the PPI set was composed of both subscales, and the corresponding canonical variate from the APQ set was also composed of both subscales. The first pair of canonical variates indicate that low scores on the praise and incentives (-.83) and positive verbal discipline (-.90) subscales are associated with low scores on the positive parenting practices (-.88) and involvement (-.86) subscales. The pattern of correlations in the first canonical variates for the PPI and the APQ

suggests that the positive verbal discipline and involvement subscales may not be distinguishable from the other two corresponding positive parenting subscales.

These four subscales measure parenting practices that are all considered positive. The strong overlap (almost 40 %) and the strong correlations between the subscales suggest that it may represent a more general concept which could be called positive parenting or positive involvement. The content of the corresponding positive parenting subscales have already been discussed and is quite similar. The positive verbal discipline subscale contains 9 items. Four of these items relate to discussions with the child about a problem, while the other 5 items ask parents about praise. More than half of the items measure the same parenting practice as the praise and incentive subscale. However, the involvement subscale has a content which is different from that of the APQ's positive parenting subscale and measures positive activities between parent and child. Although the involvement subscale is conceptually different from the positive parenting subscale, its strong relationship with the that subscale has been questioned on numerous occasions (Dadds et al., 2003; Shelton et al., 1996).

The second component includes four subscales which represent two of the corresponding pairs presented earlier measuring inconsistent discipline and physical punishment. A canonical correlation was also performed for these subscales. The first set of variables included the two PPI subscales while the second set of variables included the two APQ subscales. Data on both pairs of canonical variates appear in table 6.

The first canonical correlation was .75 (57 % overlapping variance); the second was .54 (29 % overlapping variance). The first χ^2 with both canonical correlations included was significant (χ^2 (4, N = 119) = 135.86, $p < .001$) and the second χ^2 with the first canonical correlation removed was also significant (χ^2 (1, N = 119) = 39.30, $p < .001$). Therefore,

both pairs of canonical variates accounted for the significant relationships between the two sets of variables.

The first canonical variate in the PPI set was composed of both subscales, and the corresponding canonical variate from the APQ set was also composed of both subscales. The first pair of canonical variates indicates that high scores on harsh and inconsistent discipline (.88) and physical punishment (.74) subscales are associated with high scores on inconsistent discipline (.79) and corporal punishment (.79) subscales. The second canonical variate is composed of the same variables. The relationship between the variables is different such that moderate scores on harsh and inconsistent discipline (.48) with low scores on physical punishment (-.67) are associated with high scores on inconsistent discipline (.61) and low scores on corporal punishment (-.61).

Results show a strong relationship between both pairs of canonical variates. The physical punishment subscales vary together and independently from the inconsistent parenting subscales which themselves are correlated. These relationships support the idea that physical punishment and corporal punishment measure a similar parenting practice, which is different from the inconsistent parenting practice measured by the other two variables.

The third component includes two subscales which have been discussed earlier because they represent corresponding subscales which measure the same parenting practice. Monitoring represents a very distinct parenting practice. The fourth component includes two subscales from the PPI questionnaire. These two subscales do not have any corresponding subscales in the APQ and the fact that they compose a component leads to believe that these two subscales are not covered within the Alabama Parenting Questionnaire and represent additional content.

Conclusion

The purpose of the study was to compare two parenting practices questionnaires. Two main questions were addressed: (1) Do the corresponding subscales of each instrument measure similar parenting practices? ; and (2) Do the two instruments, as a whole, cover the same content?

This study yielded three main results. First, four parenting practices (inconsistent discipline, monitoring, physical punishment and positive parenting) are covered by both instruments. Second, two parenting practices (appropriate discipline and clear expectations) are only covered by the PPI and represent additional content. The PPI covers a wider range of parenting practices than the APQ. Third, two subscales, the APQ involvement and the PPI positive verbal discipline do not represent distinct parenting practices. The results are discussed in more details next.

When comparing corresponding subscales, two out of four pairs appear to measure the same parenting practices according to all three indicators (Pearson correlation, ICC and the Bland-Altman method). These are the inconsistent discipline subscales as well as the positive parenting subscales. The other two pairs, the monitoring subscales and the physical punishment subscales, showed good association according to the Pearson correlation and good agreement according to the ICC but failed to show good agreement according to the Bland-Altman method. In both cases, it may be possible that the two pairs of subscales measure something different. The lack of agreement according to the Bland-Altman method may be partly explained by the item content. The monitoring subscales differ slightly in their content in order for each questionnaire to be age appropriate. Considering that the results showed a strong association and a moderate agreement, those subscales could be complementary. The physical punishment subscales differ in the severity of the

punishment, where the APQ subscale includes a more severe type of punishment with an object. The other element which could explain the Bland-Altman results is the small sample size. Only 5.13% and 5.88% of participants were outside the limits of agreements in the monitoring and physical punishment respectively which represents one to two individuals. A larger sample may provide different results either in agreement with the Pearson correlation and ICC or not. Because two out of the three indicators show similarities between the subscales, we would have to consider them to measure similar parenting practices.

In terms of content, both questionnaires are quite similar. Four out of five subscales in the APQ questionnaire are found in the PPI. The remaining subscale, involvement, has not been shown to represent additional content from the PPI or the APQ for that matter. Although it is conceptually different, the involvement subscale did not account for a different parenting practice. The PPI had three other subscales with additional content not covered by the APQ. The positive verbal discipline subscale did not represent content different from the other instrument. It may be due to the item content, which is highly similar to the praise and incentives or positive parenting subscales. Conversely, the appropriate discipline and the clear expectations subscales represented additional content not covered by the APQ.

The appropriate discipline subscale includes items such as “When your child does not complete his/her chores, how likely are you to punish your child (such as taking away a privilege or grounding him/her)?” or “If your child refused to do what you wanted him/her to do, how likely is it that you would get your child to correct the problem and make up for his/her mistake?”. The clear expectation subscale includes two types of items, those relating to giving consequences for misbehaviors (e.g., If your child hit another child, how likely is

it that you would discipline him/her by giving your child extra work chores?) and those about clear rules for things like chores, not fighting or bed time (e.g., I have made clear rules and expectations for my child about going to bed and getting up on time). Both of those subscales represent parenting practices which are deemed effective (Locke & Prinz, 2002) and therefore are encouraged in parent training programs.

An interesting result obtained from the canonical correlation is the relationship between inconsistent discipline and physical punishment. It suggests that among parents who are inconsistent, there are those who use physical punishment and those who do not. To investigate this relationship is beyond the purpose of this study but these results bring forward an interesting relationship that deserves further considerations in future studies while keeping in mind that these parents all have a child with ADHD and were motivated to change their parenting practices.

Some limitations of the study should be addressed. First, the study sample was small and non representative. Such a small sample is considered to be poor for principal component analysis (Tabachnick & Fidell, 2007). To be considered acceptable, a sample size of 300 participants is required. However, analysis supported factorability of the data and the PCA provided invaluable information on the underlying relationship among the subscales. The homogeneity of the sample, which consisted only of parents with a child with ADHD, may limit the results. A good agreement between the instruments with parents and children presenting dissimilar characteristics would support the results obtained here.

Then how do we know which instrument to choose? We shall be cautious with the recommendations because of the study's limitations. According to Ware et al. (1981), the main concern is to identify why we are measuring parenting practices and what constructs are to be studied. Since both instruments measure similar parenting practices, it is possible

to be parsimonious and to choose one instrument over the other. Generally speaking, for non-clinical studies, the APQ would be the instrument of choice as it is more practical; it is shorter, quicker to answer and the likert-type subscale of 1 to 5 remains the same throughout the instrument. Finally, the reliability and validity of the APQ has been documented on many occasions.

For clinical studies evaluating the efficacy of a parent training program, although both instruments should be equally suitable, the PPI seems to have the advantage. In order to evaluate the *Incredible Years* parenting program, the PPI may be more suitable because it most likely will measure exactly what the program is trying to change. It has been designed to do so and remains the instrument of choice regardless of the small number of studies on the psychometric properties of the instrument. For other parenting programs, the two additional subscales from the PPI may still represent added value. Having clear rules and expectations and using appropriate discipline are desired parenting practices and those programs should encourage them. Considering that there are only two subscales which stand out as additional content from the APQ, it is important to assess whether these two parenting practices are relevant for the intervention and the skills the program aims to change. Finally, the age of the child should also be a factor to consider because the two measures do not define all parenting practices in the same way.

While our results are preliminary, it is interesting to see that two different measures are quite comparable and can measure equally well many parenting practices. Although researchers and clinicians should not substitute their judgement for our own, parsimony seems to be achievable. Future studies should compare these questionnaires in terms of their predictive validity and their sensitivity to changes in parenting practices.

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Table 1: *Participants Sociodemographic Variables*

Variables	%
Age, years (mean ± SD)	37.7 ± 5.5
Family composition	
Nuclear family	73.4
Single-parent household	10.6
Other	16.0
Education	
High school diploma or less	15.8
Apprenticeship, cegep or technical college	49.1
University level	35.1
Income (annual in CAD $)	
Less than 25 000$	9.7
25 000 to 35 000$	4.3
35 000 to 45 000$	14.0
45 000 to 55 000$	6.5
More than 55 000$	65.5

Table 2: *Key Features of the APQ and the PPI in this Sample*

APQ			PPI		
Domain	Number of items	α	Domain	Number of items	α
Positive parenting	6	.80	Praise and incentives	11	.69
			Positive verbal discipline	9	.75
Poor monitoring/ Supervision	10	.66	Monitoring	5	.54
Inconsistent discipline	6	.61	Harsh and inconsistent discipline	15	.83
Corporal punishment	3	.65	Physical punishment	6	.60
Involvement	10	.72			
			Appropriate discipline,	12	.79
			Clear expectations	6	.53

Table 3: *Pearson Correlations between the Subscales of the PPI and APQ*

	APQ Subscales				
PPI subscales	Positive parenting	Monitoring/ Supervision	Inconsistent discipline	Corporal punishment	Involvement
Praise and incentives	**.49****	.21*	-.17	-.14	.41**
Monitoring	.15	**.53****	-.05	-.09	.33**
Harsh and inconsistent discipline	-.10	-.15	**.68****	.37**	-.07
Physical punishment	-.24*	-.20*	.22*	**.66****	-.18
Appropriate discipline	.29**	.01	-.09	.02	.07
Positive verbal discipline	.47**	.40**	-.26**	-.15	.51**
Clear expectations	.15	-.02	-.10	-.03	.06

Note. Bold type indicates correlations of corresponding subscales of the APQ and PPI.

Table 4: *Pattern/Structure for Coefficients*

Subscales	Components			
	1	2	3	4
PPI Praise and incentives	*.796*	-.177	-.162	.082
APQ Positive parenting	*.749*	-.002	.146	.277
PPI Positive verbal discipline	*.746*	-.329	.128	.119
APQ Involvement	*.695*	-.039	.387	-.036
APQ Inconsistent discipline	.021	*.909*	-.085	-.149
PPI Harsh and inconsistent discipline	-.101	*.856*	.076	-.142
APQ Corporal punishment	-.138	*.471*	-.107	.077
PPI Physical punishment	-.307	*.410*	-.034	.037
PPI Monitoring	.007	.025	*.974*	.002
APQ Monitoring/Supervision	.303	-.258	*.637*	-.083
PPI Appropriate discipline	.093	.048	.066	*.973*
PPI Clear expectations	.156	-.156	-.160	*.324*
% of variance explained	20.68%	18.20%	13.52%	10.06%

Table 5: *Correlations, Standardized Canonical Coefficients, Canonical Correlation, Percents of Variance, and Redundancies between PPI Subscales and APQ Subscales and their Corresponding Canonical Variate*

	First canonical variate	
	Correlation	Coefficient
PPI set		
Praise and incentives	-.83	-.50
Positive verbal discipline	-.90	-.65
Percent of variance	.75	
Redundancy	.29	
APQ set		
Positive parenting	-.88	-.60
Involvement	-.86	-.55
Percent of variance	.76	
Redundancy	.30	
Canonical correlation	.63	

Table 6: *Correlations, Standardized Canonical Coefficients, Canonical Correlation, Percents of Variance, and Redundancies between PPI Subscales and APQ Subscales and their Corresponding Canonical Variate*

	First canonical variate		Second canonical variate	
	Correlation	Coefficient	Correlation	Coefficient
PPI set				
Harsh and inconsistent	.88	.71	.48	.78
Physical punishment	.74	.50	-.67	-.93
Percent of variance	.66		.34	
Redundancy	.38		.10	
APQ set				
Inconsistent discipline	.79	.63	.61	.82
Corporal punishment	.79	.63	-.61	-.82
Percent of variance	.62		.39	
Redundancy	.35		.11	
Canonical correlation	.75		.54	

Figure 1. *Plot of the Difference Against the Mean of the Inconsistent Discipline Subscales*

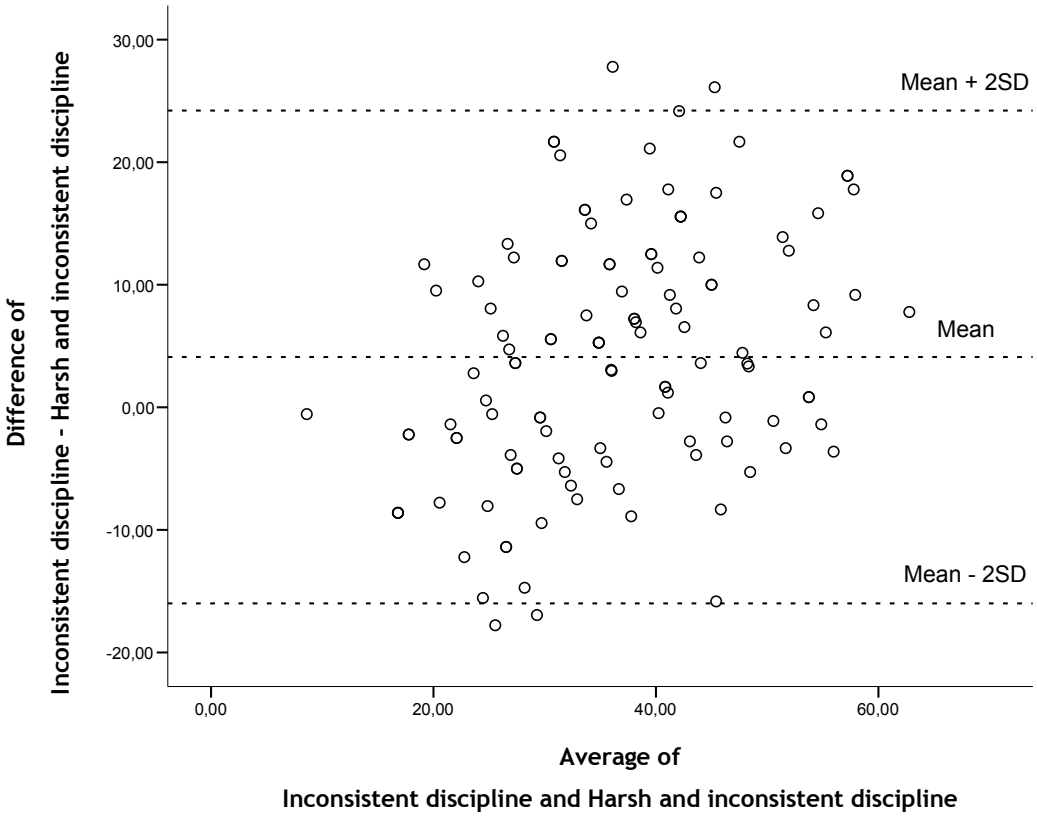


Figure 2. *Plot of the Difference Against the Mean of the Monitoring Subscales*

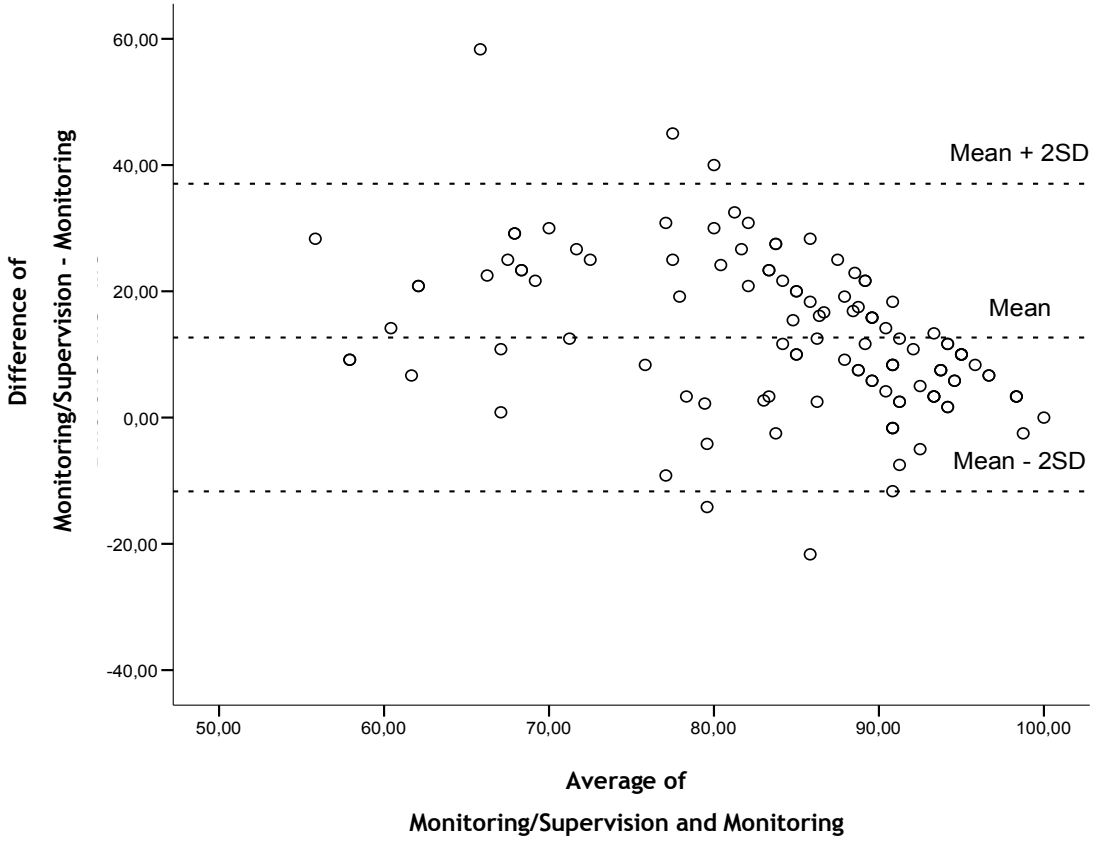


Figure 3. *Plot of the Difference Against the Mean of the Corporal Punishment Subscales*

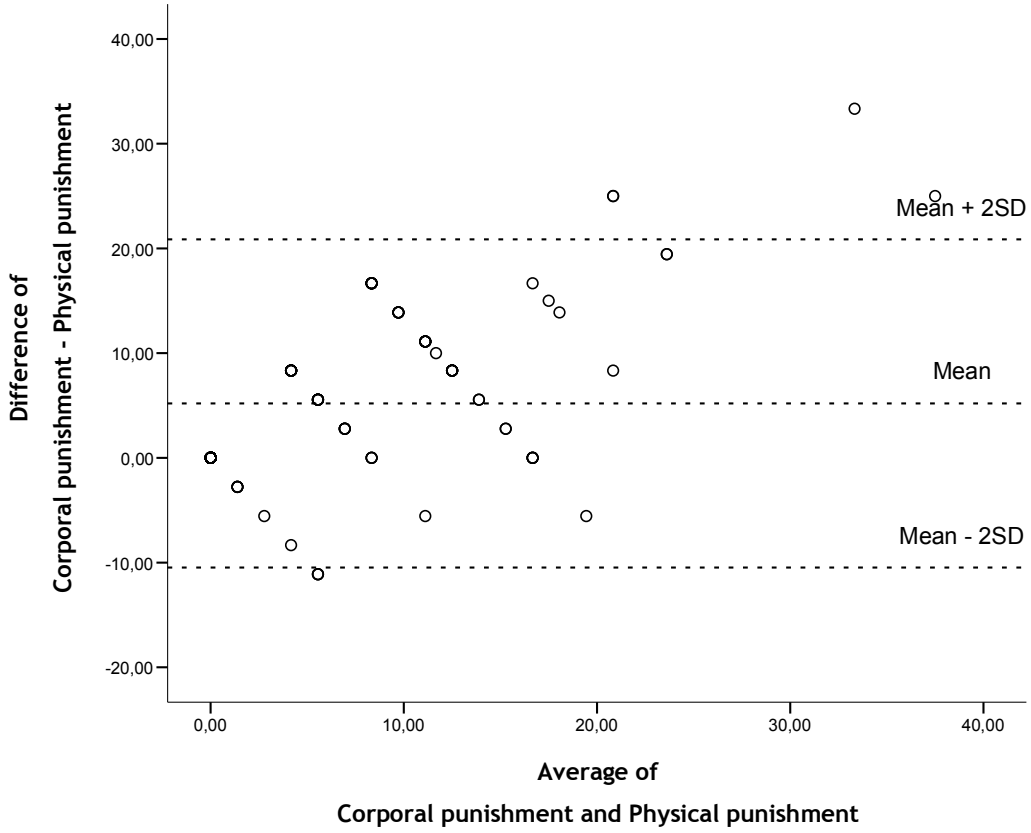
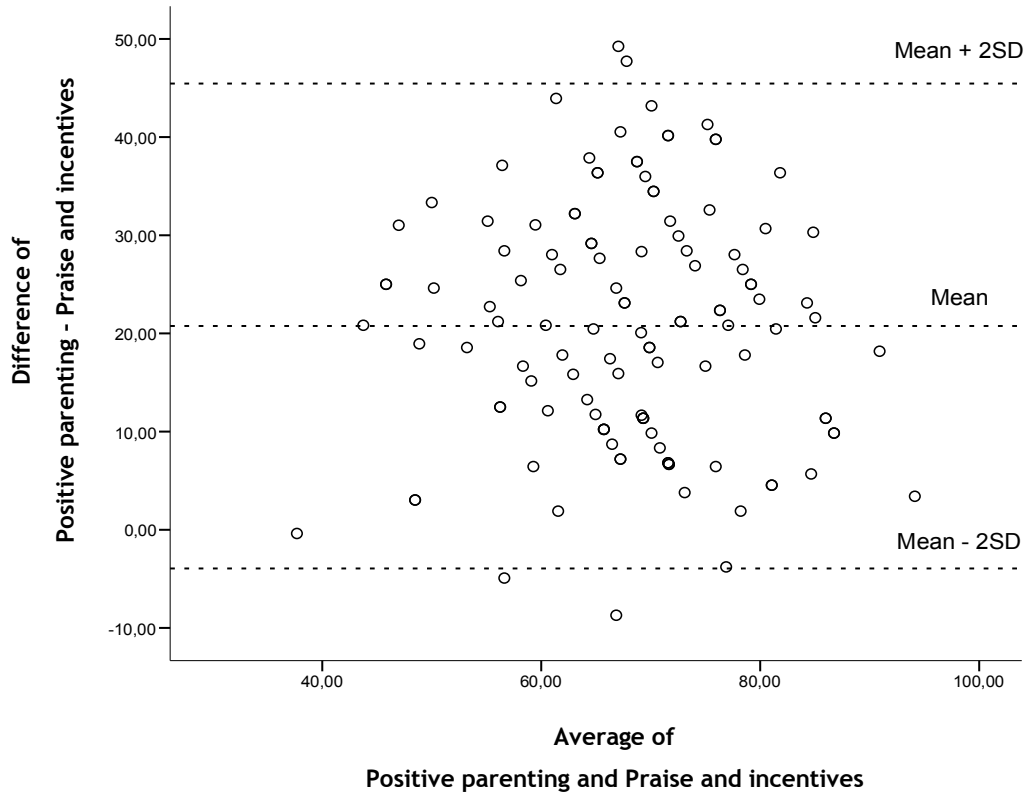


Figure 4. *Plot of the Difference Against the Mean of the Positive Parenting Subscales*



ARTICLE 2

Observation of Parenting Practices in Families of ADHD Children: Treatment Efficacy and Moderators

Julie Lessard and Sylvie Normandeau

École de Psychoéducation, Université de Montréal

Québec, Canada

Philippe Robaey

Children Hospital of Eastern Ontario, Ottawa, Canada

Abstract

The efficacy of a parent training program for families of school-age children diagnosed with attention-deficit/hyperactivity disorder (ADHD) was examined. Seventy-seven families were assigned to either the *Incredible Years* parent training program (PTP), a support phone call group (SPC), or to a community services (C) control group. Parenting practices were assessed before and after the intervention through direct observations. Results showed that parents in the PTP group reduced the percentage of harsh/negative parenting practices and increased the percentage of positive parenting practices used following the intervention while parents from the other two groups did not change. In addition, ADHD subtypes, comorbidity and cumulative risks based on parent's characteristics did not moderate treatment response. Findings from this study indicate that a parent training program is a valuable intervention for families of school-age children diagnosed with ADHD.

Key words: Attention-deficit/hyperactivity disorder, parent training program, comorbidity, ADHD subtypes, cumulative risk

Introduction

Parents of children diagnosed with attention-deficit/hyperactivity disorder (ADHD) are faced with a difficult task. Children diagnosed with ADHD present characteristics that are stressful, demanding and intrusive in nature (Johnston & Mash, 2001). These characteristics, combined with the high comorbidity of mental health problems in these children (Daley, 2006), are likely to evoke negative responses from parents and exert a negative influence on the family relationships.

Attention-deficit/hyperactivity disorder is a serious disorder that affects approximately 3 to 7% of school-age children and is characterized by symptoms of inattention, hyperactivity and impulsivity (American Psychiatric Association, 2000). Three subtypes of ADHD have been defined: predominantly inattentive (ADHD/IA), predominantly hyperactive/impulsive (ADHD/HI), and combined type (ADHD/C). Characteristics of children from each subtype are associated with different areas of impairment in terms of behavioural, academic and social functioning (Gaub & Carlson, 1997). Children who are predominantly inattentive show impairment in all areas but compared to the ADHD/HI and ADHD/C children, they display more appropriate behaviours and fewer externalising problems. The ADHD/HI children are more academically successful than ADHD/AI and ADHD/C children but display more behavioural problems. The ADHD/C children show severe and pervasive impairment in all domains. In general, children diagnosed with ADHD are at increased risk for a host of current and long-term impairments (Shelton et al., 1998).

One study showed that parents of children with ADHD displayed more negative behaviours toward their child than parents of children without ADHD (DuPaul, McGoey, Eckert, & VanBrakle, 2001). Also, observational studies have found high levels of negative behaviours as well as controlling behaviours in both mothers and fathers of children with ADHD (Johnston & Mash, 2001). Research on parent-child interactions of families of children with attentional and disruptive disorders has consistently found that, compared to families of nonproblem children, they showed more negative affect, less positive involvement, less parenting responsiveness, more harsh and inconsistent discipline, and more coercive exchanges (Frick, 1994; Patterson, 2002). When looking at different family characteristics according to ADHD subtypes, Richer (2009) found that parents of children with ADHD/AI reported less stress compared with parents from the other two subtypes

ADHD is also associated with a variety of other mental health problems such as oppositional defiant disorder (ODD), conduct disorder (CD), depression and anxiety (Daley, 2006). More specifically, children with ADHD/C present more externalising behaviours such as ODD and CD than ADHD/IA children (Milich, Balentine, & Lynam, 2001). The presence of comorbid disorders can modulate the consequences of ADHD and place additional strains on the parent-child relationship. Although studies are inconsistent and not unanimous on the association between family relationships, ADHD and conduct problems, there are still an abundance of studies suggesting that family relationships are strained in families of children with ADHD, particularly in those with conduct problems (Johnston & Mash, 2001).

Parenting practices are of interest because, over time, parents may develop counterproductive and ineffective parenting strategies to manage their child's behaviours

which may have an amplifying and maintaining influence on children's development of ADHD symptoms as well as comorbid disorders (Johnston & Mash, 2001; Patterson, DeBaryshe, & Ramsey, 1989). Parenting practices have a direct effect on children's behaviours and characteristics (Darling & Steinberg, 1993), and can act as risk factors for the development of maladaptive behaviours.

Harsh parenting practices have been associated with the development of conduct disorders as well as the development of early antisocial behaviours and low social competence in children (Hawkins et al., 1998). According to Patterson's coercion theory (Patterson, Reid, & Dishion, 1992), negative reinforcement contributes to the development and maintenance of disruptive behaviours in children as well as coercive behaviours in parents. Therefore, harsh parenting practices act as risk factors for the development of disruptive behaviours in children and other problems.

In contrast, positive parenting practices are beneficial for children's development. Parents who are emotionally positive and reinforce prosocial behaviours in their child by giving them attention are more likely to have children who are not aggressive and display more self-regulatory skills (Baydar, Reid, & Webster-Stratton, 2003). Positive parenting can be defined as appropriate discipline which refers to responding appropriately to a child's behaviours in a contingent manner (Wahler & Meginnis, 1997). It can also be defined within reinforcement theory as behaviours that serve as positive reinforcement for appropriate behaviours (Shelton, Frick, & Wootton, 1996). Overall, positive parenting practices have been shown to strengthen prosocial behaviours, including child compliance (Wahler & Meginnis, 1997).

In conclusion, parents of children with ADHD are confronted with multiple challenges and for that reason, parent training programs (PTP) have been developed. These programs support parents to increase the use of positive parenting practices and reduce the use of harsh parenting practices in order to minimize the impact of ADHD symptoms on children and the development of other behavioural problems. Studies of PTP have shown evidence for the influence of parenting practices on symptoms of ADHD and other related behaviours (e.g., Bor, Sanders, & Markie-Dadds, 2002; Hartman, Stage, & Webster-Stratton, 2003).

Evidence for parent training program for ADHD

Parent training is an empirically supported treatment for ADHD (Pelham & Fabiano, 2008). Studies of parent training programs with families of preschoolers with ADHD symptoms have found that parents reported a decrease in behavioural problems in their children as well as an increase in parental competence compared to the control group (Bor et al., 2002; Sonuga-Barke, Daley, Thompson, Weeks, & Laver-Bradbury, 2001). Intervention effects were obtained from parental self-reports. However, observational measures of parenting did not provide support for the intervention on parenting practices (Bor et al. 2002). When compared with a parent counselling and support group that had not received coaching in child management techniques but rather nondirective support and counselling, intervention effects were found only in parents who participated to a PTP. They concluded that although counselling and support are important elements of an intervention, they may not be sufficient to create changes in parenting (Sonuga-Barke et al, 2001).

Anastopoulos, Shelton, DuPaul and Guevremont (1993) evaluated the efficacy of PTP but this time, for school-age children. Parents in the PTP showed a decrease in stress, an increase in self-esteem and reported a diminution in the severity of their child's ADHD symptoms. The child's medication was examined in order to compare post-treatment differences between groups and results showed that it did not modulate treatment response. Medication was not controlled for throughout the study and therefore, additional consideration needs to be given to the role of medication.

The Multimodal Treatment Study of Children with ADHD (MTA; MTA Group, 1999) compared the efficacy of four treatments: medication management alone; behaviour therapy alone including a PTP, a child-focused treatment and a school-based intervention; combined medication management plus behaviour therapy; and a community comparison group. Although the medication management alone was effective to reduce ADHD symptoms, the parent-child relationship improved only for participants in the combined intervention. Furthermore, parents in the combined intervention reported a reduction in harsh and ineffective parenting (Hinshaw et al., 2000). Rigorous procedures were undertaken to establish the adequate medication dose for each children and maintain medication (for the combined and medication management alone groups) throughout the study. This study provides support for PTP in combination with medication as the ideal treatment for school-age children.

The Incredible Years (IY) parent training program (Webster-Stratton, 1998) is a program that has shown its efficacy to enhance parenting practices and reduce disruptive behaviours in children with conduct problems (e.g., Webster-Stratton, 1990; Webster-Stratton & Hammond, 1998). More recently, the IY program has been used with parents of

children diagnosed with ADHD or presenting ADHD symptoms. Hartman, Stage and Webster-Stratton (2003) evaluated the efficacy of the IY program with parents of 4-7 year-old children with conduct problems or a combination of conduct problems and attention problems. They found through observation as well as self-reports that children with attention problems and conduct problems benefited from the program just as much as children with conduct problems only. Observations of parent-child interactions also yielded a significant decrease in negative parenting behaviours for both groups of children. The program's efficacy to reduce ADHD symptoms and antisocial behaviours has also been shown in a group of children age 6 compared to children in a control group (Scott et al., 2010). Parents who participated in the IY parent training reported using more positive parenting, more effective strategies, increased warmth and decreased criticism toward their child. Furthermore, direct observation of parent-child interactions showed an increase in attending and praising in parents from the intervention group compared with parents in the control group.

Although the IY program was created to be offered in a group format, its efficacy has been evaluated in other formats. Normandeau, Letarte, Robaey and Allard (2009) examined the efficacy of the IY parent training program as well as a modified version for parents of children with ADHD. Parents participating in the modified version received support phone calls (SPC) every other week discussing the same topics talked about in the parent training program. Based on parent self-reports, results showed that parents from the PTP and the SPC groups used more praises and incentives, used better strategies to supervise their child and expressed their expectations more clearly. They also reported less intense child problems. Although the SPC group showed improvement following the intervention,

changes in parenting practices were smaller than those of parents in the PTP. In addition, parents in the PTP also reported using less harsh and inconsistent discipline and more improvements in their child's overall ADHD symptoms. The authors concluded that the intensity and quality of the interventions were related to the magnitude of the effects obtained. Results from this study are not consistent with Sonuga-Barke and colleagues (2001) results in which parents receiving counselling and support did not show improvements in parenting. In contrast, results are similar to those of Walcott, Calson and Beamon (2009). This last study evaluated the efficacy of the IY program as a self-administered treatment for four parents of children with ADHD. An important result of this study is that child outcomes were associated with treatment integrity. Intervention effects were greater for parents that followed the training with greater integrity and reported using the parenting strategies. Although no changes were found on parenting practices, results regarding children's behaviours appear to be consistent with other studies using the self-administered version of the IY parent training program (Webster-Stratton, 1992; Webster-Stratton, Kolpacoff, & Hollinsworth, 1988). These studies suggest that the IY program can be beneficial even when not offered in a group format but that treatment intensity and quality is important to obtain significant improvements.

Predictors of treatment response

Although there is evidence for the efficacy of parent training programs, there remains variability in the degree to which individual parents change their parenting practices as a result of their participation to a PTP. There are a number of potential moderators of

treatment effects, including the child's ADHD subtypes, child comorbidity, parental psychopathology, marital satisfaction and socioeconomic status (SES).

Over the years, the classification of ADHD into subcategories has changed many times. Normandeau et al. (2009) evaluated the moderating effect of the most recent diagnostic subtypes on two types of interventions: PTP and support phone call (SPC). Results showed that among parents of ADHD/C children, those who participated in the PTP reported an improvement in their ability to control their child's behaviours whereas parents from the other two groups did not. Among parents of ADHD/IA children, those in the PTP and control group showed improvements in their ability to control their child's behaviours compared with the SPC parents who reported more difficulties at post-intervention. Although there were some differences, more research is needed to clarify the role of ADHD subtypes.

Comorbid disorders present contradictory results related to moderating treatment response. Hartman et al. (2003) found that children with a combination of conduct problems and attention problems benefited from the PTP just as much as children with conduct problems only. In comparison, results from the MTA study showed that comorbidity was a moderator of treatment response. Jensen et al. (2001) reported that children with ADHD alone and ADHD plus ODD or CD showed the largest improvement for the interventions including medication. On the other hand, children with ADHD plus anxiety disorders responded equally well to the behaviour therapy or medication management treatments. Children with multiple comorbid disorders responded best to the combined treatment. The influence of comorbid disorders also needs further evaluation.

Parental psychopathology in general, and primarily depression, has also been shown to be a barrier to optimal treatment response following a PTP for children with ADHD. The MTA study showed that children receiving treatment, in the medication and the combined treatment groups, showed significantly less improvement when mothers reported a higher number of depressive symptoms (Owens et al., 2003). Also, parents of ADHD children report more stress than parents of children without ADHD (Johnston & Mash, 2001). Studies of children with conduct disorders have found PTP to be less effective in families with higher levels of parenting stress (Webster-Stratton, 1985a; Webster-Stratton & Hammond, 1990). However, the influence of stress as a moderator of treatment response for families of children with ADHD has not been studied. Although the prevalence of psychopathology in parents of children with ADHD is greater compared to parents of nonproblem children (Nigg & Hinshaw, 1998) it has received less attention and should be examined further.

It is well documented that socioeconomic status (SES) has been identified as a risk factor for a host of impairments in children's development. The moderating effects of SES on treatment response have been evaluated for participants in the MTA study (Rieppi et al., 2002). A superior reduction in ADHD core symptoms were found in children from more educated families compared to less educated families in the combined treatment. In contrast, the lower SES families showed greater benefit from the combined treatment for oppositional-aggressive symptoms. Therefore, it seems that SES may have a moderating effect on treatment response but it is still not clear how it interacts with the various outcomes targeted by treatment.

Another potential moderator of treatment response is marital satisfaction or being a single parent. Marital adjustment and marital status (partnered or single) have both been found to be moderator of treatment response in parents of children with conduct problems (Beauchaine, Webster-Stratton, & Reid, 2005). Children of mothers with low marital satisfaction showed better 1-year outcomes when the intervention included a PTP component compared to interventions without a PTP. Children of single mothers also showed better outcomes when the intervention included a PTP. Although this literature is not with families of ADHD children, it is reasonable to assume that similar results could be obtained since parents of children with ADHD present more marital conflicts and less marital satisfaction than families of nonproblem children (Johnston & Mash, 2001).

Parental moderators are also risk factors for the development of behavioural problems in children. Although a risk factor implies a greater probability or potential for developing a negative outcome, not every individual who exhibits a risk factor will have a negative outcome (Cicchetti, 2006). The cumulative risk model asserts that the accumulation of risk factors, independently of particular risk factors, impacts developmental outcomes (Rutter, 1979; Sameroff, 2000). Stolk et al. (2008) studied the effects of cumulative risk on the effectiveness of a parenting intervention. Risk factors included in the cumulative risk variable were marital discord, lack of social support, daily hassles, physical health problems, low maternal educational level, and maternal psychopathology. Results showed that cumulative risk was not associated with change in parenting. According to Stolk et al. (2008), no other study investigated the association between cumulative risk and change in parenting behaviours after an intervention. Results seem to show that cumulative risks do

not moderate treatment response but it is still an understudied moderator of treatment response and more research is necessary to obtain a clear conclusion on its impact.

The aims of this study were to: (1) evaluate the efficacy of a PTP to change parenting practices in parents of children with ADHD, (2) examine whether parents receiving a minimal intervention based on the same PTP would benefit from this intervention as much as parents receiving the group program, and (3) examine the moderating effects of the subtype of ADHD (ADHD/IA, ADHD/HI, or ADHD/C), the presence of comorbidity and the accumulation of risk factors through the cumulative risk index on parenting practices.

The present study is unique in four aspects. First, a set of evaluations were used to ensure that children have a clear ADHD diagnostic. Second, the influence of medication was controlled for by having children go through a rigorous procedure to establish the ideal medication dose prior to the interventions. Third, this study used independent observations of parent-child interactions in the home to assess change in parenting practices. Many studies rely on parent self-report which can be biased because parents tend to overestimate changes following intervention. Fourth, it assessed the influence of many children and parents characteristics on the parent's ability to benefit from the parent training program.

First, we hypothesised that parents receiving the PTP would show an increase in positive parenting and a decrease in harsh/negative parenting following the intervention compared to the control group. Second, we hypothesised that parents in the minimal intervention would show improvement in their parenting practices but that the changes would be smaller for parents receiving the minimal intervention compared to parents in the PTP. Third, we hypothesised that child characteristics (ADHD subtype and comorbidity)

would be a moderator of treatment response. Finally, we hypothesised that the accumulation of risk factors would not moderate treatment response.

Method

Participants

Participants in this study were drawn from an existing sample of 102 families that had been previously assigned to one of three conditions: parent training program plus medication (PTP), support phone call plus medication (SPC) and community services plus medication (C) control group. Parents were referred to this project by health care, educational or social services professionals if they had a child who was diagnosed with attention-deficit/hyperactivity disorder (ADHD).

Participants were included in the study if they satisfied these criteria: (1) the child was between the age of 6 and 9 years old; (2) the diagnosis for ADHD based on the criteria from the Diagnostic and Statistical Manual of Mental Disorders (4th ed. [DSM-IV] American Psychiatric Association, 1994) was confirmed with the Diagnostic Interview Schedule for children (DISC4.0; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000), the parent and teacher versions of the Conners' Rating Scale Revised (CRS-R; Conners, 1997) as well as by a psychiatrist from the research team; (3) children presenting other diagnosis usually co-morbid with ADHD such as oppositional defiant disorder, conduct disorder, elimination disorders or anxiety disorders were not excluded from the study as long as ADHD was the most significant diagnosis for the child; (4) the child was not mentally retarded, did not have a communication or learning disorder, a neurological disorder, tic disorders, Tourette's disorder, an obsessive-compulsive disorder, or was not

born prematurely (<35 weeks); and (5) the child was taking medication (methylphenidate) as prescribed.

Families with completed before and after coding of observations were retained for this study. The final sample includes 77 families with one targeted parent (69 mothers and 8 fathers) who completed the questionnaires and their children (65 boys and 12 girls) diagnosed with ADHD. Thirty of these families were in the PTP group, 27 in the SPC group and 20 in the community services control group. Children's and parent's characteristics as well as demographic and family background characteristics for the sample are presented in Table 1 and Table 2. Parents were predominantly well educated, lived in nuclear families (71.43%) and had a majority of male children (84.42%).

Procedure

Once families had been referred to the program, the child's diagnosis of ADHD had to be confirmed and the ideal dose of medication for the child established. Next, parents were randomly assigned to one of the three groups. Data were collected at two time points: pre-intervention or time 1 (T1) and post-intervention or time 2 (T2). A research assistant called parents to make an appointment to go into their home to film parent-child interactions during dinner time. The assistant also provided parents with a series of questionnaires to mail-in. This procedure was repeated either after the PTP program was completed or approximately 16 weeks later. Once the research coordinator received the last booklet of questionnaires, parents received 20$.

Parent training program (PTP)

Parents assigned to the PTP participated in the *Incredible Years* (IY) parent training program (Webster-Stratton, 1998). The program's objectives are to strengthen parenting competencies (i.e. especially increasing the use of nonviolent approaches), increase school involvement and family support networks, strengthen their children's social skills and prosocial behaviours, and reduce conduct problems. This program's numerous randomised evaluations and evidenced excellent effectiveness made it one of the Blueprint program by the Center for Violence Prevention at the University of Colorado (Webster-Stratton et al., 2001). It was selected because it is manualized, and uses a collaborative approach as well as videotape modeling. Parents (7 to 16 per group) met once a week for a two-hour meeting during 16 weeks. Meetings took place in a university-based psychology clinic.

Support phone call (SPC)

Parents assigned to the SPC group received 8 phone calls over a 16 week period. Calls were made every other week by a research assistant and lasted about 20 to 30 minutes. Every conversation addressed a different topic related to parent-child relationship such as reinforcements or setting clear limits. Topics were addressed in the same order as presented in the PTP group. The assistant's role consisted in listening to the parent as well as discussing events or situations experienced by the parent and his or her child on each of the proposed theme. In addition, parents received the same written materials as parents from the PTP group.

Community services (C)

Once the medication dose had been established, parents assigned to the C group continued to receive usual community services.

Measures

Outcome measure: Home observation

Parenting practices were assessed using a 20-min videotaped home observation. The instrument used was created for this study (additional information on the observational coding scheme is available in appendix A, B, and C) and included items from the Dyadic Parent-Child Interaction Coding System (DPICS) which was originally developed by Robinson and Eyberg (1981), and later revised by Webster-Stratton (1985b). The coding scheme includes 15 behavioural categories to assess parenting practices and three rating scales to assess the mood and context at the time of the observation. Observational coding was continuous and recorded the total frequency of each behaviour per specified interval. The observation was divided in 5-min intervals which were recorded continuously. A minimum of one 5-min interval at pre-intervention and post-intervention was necessary to include a family in this study and a maximum of four 5-min intervals were completed when available. Among the families filmed at pre and post-intervention that satisfied those criteria (154 recording), there were four 5-min recordings, thirteen 10-min recordings, twenty-six 15-min recordings and one hundred and eleven 20-min recordings for a percentage of the total sample of 2.60%, 8.44%, 16.88% and 72.08% respectively. The observations were carried out in a naturalistic setting during family mealtime. According to Fiese and Shwartz's report (2008), shared family mealtimes are packed with events that can

lead to either favourable or adverse effects on child development. This repetitive routine creates a significant behavioural setting for family interactions. Other reasons to use family mealtimes were related to the children's characteristics associated with ADHD. Children with ADHD have difficulties with transitions and leaving their activity for dinner can be challenging. Also, children in this study were taking medication. The effects of medication usually start dissipating before dinner. Therefore, we expected children to be acting out more and parents to use a wider variety of parenting skills during that time frame. Families were instructed to do as they would normally do at that time of the day. Home observations were made by one observer who was blind to the group assignments. To assess reliability, a second observer also blind to the group assignments coded 18% of all home observations.

Two composite variables were created: (1) percentage of positive parenting, and (2) percentage of harsh/negative parenting. The percentage was calculated by dividing the number of observed positive or harsh/negative parenting behaviours by the total number of behaviours coded and multiplying that number by one hundred. Behavioural categories representing other parenting practices or with very low frequencies were not retained for this study. The positive parenting variable was created within the reinforcement theory framework and includes praise (labelled and unlabelled), descriptive question or comment/encouragement, and appropriate reward. Kappas for the behaviours in the positive parenting scale are substantial to excellent according to Landis and Koch (1977) ranging from .61 to 1. The harsh/negative parenting variables was inspired from Webster-Stratton and Hammond's (1999) total critical statements variable (including critical statement, negative command with and without opportunity for compliance) as well as physical negative behaviours which are coercive in nature and constitutes harsh parenting. Kappas

for behaviours in the harsh/negative parenting scale are moderate to substantial, ranging from .53 to .76.

Moderator measures

Information relevant to the child such as ADHD subtype and presence of comorbid disorders have been obtained with the DISC4.0 (Shaffer et al., 2000) and the parent and teacher versions of the CRS-R (Conners, 1997).

The risk factors which were used to calculate the cumulative risk index are socioeconomic status, stress, marital relationship, and depression. To create the cumulative risk index (CRI), each variable representing a risk factor was transformed into a dichotomous variable (0: absence of risk, 1: presence of risk). A total CRI was computed by summing across all binary (0 or 1) risk factors for each family. Scores are continuous and resulting in a possible range from 0 to 4.

In order to assess the severity of depression in parents, the Beck Depression Inventory (Beck, Steer, & Brown, 1996) was used. Scores higher or equal to 20 represent moderate or severe depression (1) and scores below 20 imply minimal or mild depressions (Beck et al., 1996) and are coded 0. Marital satisfaction was assessed by the Marital Adjustement Scale from Wright and Sabourin (1985), originally developed by Locke and Wallace (1959). Scores equal or below 100 indicate distress while scores above 100 indicate families not in distress (Locke & Wallace, 1959). For the CRI, families in distress or single parents obtained a 1 while families not in distress were coded as 0. The translated version from Bigras, Lafrenière and Abidin (1996) of the Parenting Stress Index/Short Form (Abidin, 1995) was used. Scores on the total stress scale were used to determine

presence (score of ≥ 85) or absence (< 85) of problematic stress level (Abidin, 1995). Socioeconomic status was obtained from a general information questionnaire. In order to assess whether a family had a low income, the family's annual income as well as the size of the family unit were taken into account. According to Statistics Canada (2009), in 2008, a family of two with an income of 22 361$ or less is considered having a low income. An income of 27 844$, 34 738$, 39 556$, 43 869$, and 48 181$ or less for a family of 3, 4, 5, 6, and 7 or more respectively has a low income. Families with a low income were coded 1 and families above the cut-off annual income were coded 0.

Data analytic strategy

Initial analyses examined the equivalence of the three groups at baseline on demographic and family background variables (i.e. family composition, sex, age and education of the respondent, family income, child's sex and age, ADHD subtypes and comorbidity) as well as the composite scores (i.e. harsh/negative parenting and positive parenting). Analysis of variance (ANOVA) for continuous variables and chi-square tests for categorical variables were conducted.

Treatment effects for each measure of parenting practices were examined using analysis of covariance (ANCOVA) using pre-treatment scores as covariates for corresponding post-treatment scores. Effect sizes (partial eta^2) were estimated using Cohen's criteria (Cohen, 1988) for small (.01-.05), medium (.06-.13) and large (.14 and more) effects. Post hoc tests were examined when overall effects were significant. Two-way ANCOVAs were also performed to examine the moderating effect of the subtype of

ADHD, comorbidity and the cumulative risk index to understand whether intervention effects differed for families with more difficulties.

Results

Preliminary analyses

The ANOVAs and chi-square analyses indicated no significant differences among the three conditions at baseline on demographic variables as presented in Table 1. Findings on composite scores indicated no significant differences at baseline for the harsh/negative parenting ($F(2, 74) = 0.21$, $p = .81$) or the positive parenting ($F(2, 74) = 6.46$, $p = .53$).

Intervention effects on harsh/negative parenting practices

Mean scores for the PTP group decreased from 25.96% (SD = 9.50) at baseline to 22.78% (SD = 14.55) at T2, showing a mean reduction in score of 3.18%. Scores for the SPC and C group increased between T1 and T2 from 28.18% (SD = 17.76) and 25.86% (SD = 16.64) to 31.90% (SD = 11.11) and 31.51% (SD = 16.64) respectively.

Results from the ANCOVA indicated that, after adjusting for pre-intervention scores, post-intervention scores were significantly different between treatment conditions ($F(2, 73) = 3.61$, $p < .04$, ES = .09). Post hoc Least Significant Difference analysis showed that the PTP group scores were significantly lower than the SPC group ($p < .02$) and the C group ($p < .04$). No significant differences were found between the SPC and C group (p = n.s.).

Intervention effects on positive parenting

Mean scores for the PTP group increased from 6.72% (SD = 5.84) at baseline to 11.04% (SD = 9.38) at T2, showing a mean increase in score of 4.32%. Scores for the SPC

group decreased from 5.14% (SD = 5.75) at T1 to 3.71% (SD = 5.07) at T2. The same scenario was obtained for the C group with a decrease in percentage of positive parenting practices from 5.41% (4.94) at baseline to 4.25% (SD = 4.63) at T2.

Results from the ANCOVA indicated that pre-intervention scores were significantly associated with post-intervention scores ($F(1, 73) = 3.73$, $p < .05$, ES = .04). Also, when controlling for the pre-intervention scores, differences between treatment conditions at T2 were still statistically significant ($F(2, 73) = 8.55$, $p < .01$, ES = .19). Post hoc Least Significant Difference analysis indicated that the PTP group scores were significantly higher than the SPC group ($p < .01$) and the C group ($p < .01$) while no significant differences were found between the SPC and C group (p = n.s.).

Moderators of treatment effects

Two-way between-groups analyses of covariance (ANCOVA) were conducted to explore the impact of the interventions (groups) and moderating factors on harsh/negative parenting or positive parenting. When looking at the number of children in each ADHD subtype, there were a small number of predominantly hyperactive/impulsive children in the sample. These children were grouped with the combined subtype, which is the group who has the most resembling characteristics. After adjusting for pre-intervention scores, the interaction effect on harsh/negative parenting ($F(5, 71) = 0.63$, p = n.s.) and positive parenting ($F(5, 71) = 0.50$, p = n.s.) did not reach statistical significance. The interaction effect of comorbidity (none, anxiety or aggressiveness), after adjusting for pre-intervention scores, did not reach statistical significance for harsh/negative parenting ($F(8, 68) = 0.75$, p = n.s.) and positive parenting ($F(8, 68) = 0.37$, p = n.s.). Finally, information on the

presence of risk factors per group is summarised in Table 3. In view of the fact that there were only a small number of individuals with three or four risk factors, three categories were formed: no risk factor, one risk factor, and two or more risk factors. After adjusting for pre-intervention scores, the interaction effect on harsh/negative parenting ($F(8, 68) = 0.69$, p = n.s.) and positive parenting ($F(8, 68) = 0.87$, p = n.s.) did not reach statistical significance.

Discussion

The primary objective of this study was to test the efficacy of a parent training program among parents of children diagnosed with ADHD. The results of this study indicate that parents who participated in the parent training program showed significant improvement in their parenting skills. They significantly increased the percentage of positive parenting practices such as praise and incentives in their interactions with their children. Furthermore, they decreased significantly the amount of harsh/negative parenting practices used toward their children. Results are consistent with those reported by Hartman et al. (2003) with 4-7 year-old boys with conduct problem and attentional difficulties as well as Scott et al. (2010) with children age 6 at risk of antisocial behaviours. Compared to these last two studies with children who presented ADHD symptoms but did not have a clear diagnostic, this study included only children who had a diagnostic of ADHD. Results are also consistent with those reported by Normandeau et al. (2009) based on parental self-report and using a larger sample from this study. Therefore, these results contribute to the growing evidence in the literature for the efficacy of parent training program as a successful intervention for families of school-age children with ADHD. Also, methods such as the

collaborative approach for group-based programs and videotape modeling have been shown to be effective (Chronis, Chacko, Fabiano, Wymbs, & Pelham, 2004) and this study provides additional support for these techniques.

This study's second objective was to examine whether parents receiving the SPC would benefit from this intervention as much as parents who received the PTP. We hypothesised that parents receiving the SPC intervention would show an improvement in their parenting practices and that the changes would be smaller than parents in the PTP. The results indicated that parents receiving the SPC intervention did not change their parenting practices. Parents in the SPC group were similar to those in the control group. The SPC group did not produce changes in the expected direction.

According to self-report questionnaires used in the larger sample from this study (Normandeau et al., 2009), parents in the SPC group reported an improvement in some aspects of parenting practices. Other studies have also shown that minimal interventions or other format such as self-administered interventions are effective in improving parenting skills. Connell, Sanders, and Markie-Dadds (1997) offered a minimal intervention similar to this study. Parents received written materials and weekly telephone consultations for 10 weeks. Compared to a waiting list group, parents in the minimal intervention group reported an increased level of parenting competence and a decrease in dysfunctional parenting practices. Similarly, Sutton (1992) examined the efficacy of a parent training offered through various methods: group intervention, home visits or phone intervention. All three interventions showed improvements and there were no significant differences between intervention methods at post-treatment. Also, the IY parent training program was evaluated as a self-administered version on multiple occasions (e.g.,Webster-Stratton,

1992; Webster-Stratton et al., 1988). The self-administered version included a parent's manual to be used when watching the program's videotape as well as weekly homework assignment. Parent receiving the self-administered training showed improvement in their parenting skills and there were no significant differences when compared with group interventions.

Results for the SPC group may be different from studies supporting their efficacy for a few reasons. Self-reported measures were used in many instances to assess parenting (Connell et al., 1997; Normandeau et al., 2009). Aspland and Gardner (2003) reported that it could be problematic to rely solely on self-reports because parents tend to overestimate changes following intervention. The parent's mood and expectations about intervention may influence the results. Also, observational measures have greater ecological validity. With this measure, it is possible to observe behaviours in their natural setting. Parents in the SPC group may have felt positive about their parenting practices as shown by the self-report results from Normandeau et al. (2009) when in fact, no changes were observed at home. Contrarily to the PTP, the SPC group's learning were not generalised to the home setting. The modeling within the PTP through videotape and role play may be an important contributor to learning and applying new parenting practices at home. On the other hand, studies conducted on the self-administered Incredible Years parent training did use observational measures to assess parenting practices. The differences may be explained by the nature of the intervention. The self-administered version of the IY program allowed parents, in addition to the written materials, to watch videotapes. Again, the modeling through videotape may help parents assimilate better and apply those skills in their daily lives.

The third objective was to examine the moderating effects of the subtype of ADHD (predominantly inattentive, predominantly hyperactive/impulsive, or combined), the presence of comorbidity and the accumulation of risk factors through the cumulative risk index on parenting practices. We hypothesised that the children's characteristics would moderate treatment response but that the accumulation of risk factors would not. Results confirmed our hypothesis regarding the cumulative risk factors but not children's characteristics. The absence of moderating effects may have been obtained primarily because the parent training program was tailored to the specific challenges and needs of each family. Since parents are encouraged to discuss personal behavioural difficulties in their child, they can address specific issues and therefore learn to effectively manage most ADHD symptoms and co-occurring disorders (Chronis et al., 2004). As for the accumulation of risk factors, most families had one or two factors which were for the most part a high level of stress and/or marital dissatisfaction. The potential impact of stress and marital conflict on treatment response may have been reduced because the intervention also encouraged participants to share the information with their spouse and encourage them to get involved, helped parents manage stress by finding ways to reorganise the family's environment in order to better manage children's behaviours, and provided social support. Although the intervention was offered in a group format, it remained individualised enough for parents to benefit from the intervention regardless of the ADHD subtype, the presence of comorbidity, and their own personal challenges.

Some limitations of the study should be addressed. First, the study sample was fairly homogenous. The sample consisted mostly of well-educated nuclear families. Second, the sample cannot be considered representative of all families with a child diagnosed with

ADHD because of the study's rigorous selection based on a large number of criteria. Generalisation of results is therefore limited to this group and needs to be replicated with other subgroups of families. Third, sample size was reduced and 25 families had to be removed from this study because of technical difficulties with sound, image, or mealtime shorter than 5 minutes. A larger sample would have increased statistical power and results for the SPC and C group may have been different. Observations showed that there was a slight tendency for parents in the latter two groups to use more harsh/negative and less positive parenting at time 2 and results from a larger sample may have confirmed this tendency. Fourth, this study does not have observational data on the children's progress. Another observational measure specific to children's behaviours could be used in order to detail changes in ADHD symptoms and other comorbid disorders following the PTP. Finally, no follow-up observational data were collected and it is not possible to know if gains were maintained over time. Other studies of the IY parent training program support the idea that gains are maintained over time (Hartman et al., 2003; Scott et al., 2010).

The originality of this study stands in the facts that the intervention was aimed at parents of children with a diagnostic of ADHD, medication dosage and effects were controlled, an observational measure was used to assess parenting practices, and moderators of treatment efficacy which had been rarely studied such as ADHD subtypes and cumulative risks were taken into account. More research is still needed on the moderating role of children and parents characteristics on treatment response. Overall, findings from this study support the efficacy of parent training programs for parents of children with ADHD.

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Table 1: *Participant's Characteristics**

Variables	PTP n = 30		SPC n = 27		C n = 20	
Child						
Gender (% of boys)	23	(76.70)	24	(88.90)	18	(90.00)
Age (SD) Range from 6 to 9	8.17	(1.34)	8.21	(0.93)	8.23	(1.38)
ADHD subtypes						
IA (%)	9	(30.00)	4	(14.80)	7	(35.00)
HI (%)	2	(6.70)	2	(7.40)	1	(5.00)
Combined type (%)	19	(63.30)	21	(77.80)	12	(60.00)
Comorbidity						
None (%)	13	(43.30)	9	(33.30)	10	(50.00)
Aggressive behaviours (%)	10	(33.30)	14	(51.90)	8	(40.00)
Anxiety (%)	7	(23.30)	4	(14.80)	2	(10.00)
Respondent						
Mother as the respondent (%)	24	(80.00)	25	(92.60)	20	(100.00)
Age of the respondent (SD)	38.82	(7.35)	36.77	(5.38)	35.37	(4.45)

*Groups did not differ significantly on any characteristic (χ^2 and analysis of variance).

PTP, parent training; SPC, support phone call; C, community services; IA, predominantly inattentive; HI, predominantly hyperactive/impulsive.

Table 2: *Demographic and Family Background Characteristics of Participants**

Variables	PTP n = 30		SPC n = 27		C n = 20	
Family composition						
Nuclear family (%)	23	(76.70)	19	(70.40)	13	(65.00)
Single-parent household (%)	2	(6.70)	4	(14.80)	1	(5.00)
Other (%)	5	(16.70)	4	(14.80)	6	(30.00)
Education						
High school diploma or less (%)	3	(10.70)	7	(25.90)	3	(15.00)
Apprenticeship, cegep or technical college (%)	11	(39.30)	11	(40.70)	10	(50.00)
University level (%)	14	(50.00)	9	(33.30)	7	(35.00)
Income (annual in CAD $)						
Less than 25 000$ (%)	3	(10.00)	3	(11.10)	1	(5.30)
25 000 to 55 000$ (%)	5	(16.60)	7	(25.90)	6	(31.60)
More than 55 000$ (%)	22	(73.40)	17	(63.00)	12	(63.10)

*Groups did not differ significantly on any characteristic (χ^2).

Table 3: *Presence of Risk Factors and Cumulative Risks in Participants*

Variables	PTP n = 30		SPC n = 27		C n = 20	
Marital distress or single parent (%)	18	(60.00)	13	(48.10)	10	(50.00)
High stress level (%)	16	(53.30)	9	(33.30)	6	(30.00)
High nb of depressive symptoms (%)	2	(6.70)	1	(3.70)	1	(5.00)
Family income below poverty level (%)	3	(10.00)	5	(18.50)	2	(10.00)
Number of risk factors						
None (%)	9	(30.00)	8	(29.60)	8	(40.00)
One (%)	6	(20.00)	11	(40.70)	5	(25.00)
Two (%)	13	(43.30)	8	(29.60)	7	(35.00)
Three (%)	1	(3.30)	0		0	
Four (%)	1	(3.30)	0		0	

CONCLUSION

La présente thèse s'intéressait à la mesure des pratiques éducatives et plus particulièrement à leur capacité à rendre compte du changement de ces pratiques. Le premier article comparait deux instruments de mesure autorapportés alors que le second article, découlant du développement d'une grille d'observation, évaluait le changement des pratiques éducatives suite à un programme d'entraînement aux habiletés parentales (PEHP) à l'aide de données observationnelles. Les articles de cette thèse mènent à réfléchir sur la pertinence des différents types d'instruments de mesure de la relation parent-enfant ainsi qu'à la complémentarité de ces instruments.

Les instruments de mesure de la relation parent-enfant

Tel que mentionné en annexe, plus des deux tiers des instruments portant sur la parentalité sont des questionnaires autorapportés. Les avantages reliés à l'utilisation de questionnaires, comparativement aux entrevues ou aux mesures observationnelles, sont suffisamment importants pour que ceux-ci soient considérés comme la mesure à privilégier pour la recherche. En effet, les questionnaires autorapportés sur les pratiques parentales sont facilement accessibles et faciles d'utilisation. Par ailleurs, ils requièrent peu de formation pour la passation qui s'avère elle-même être très rapide, tout comme l'analyse des données saisies. De plus, les questions permettent de recueillir de l'information sur plusieurs construits à la fois. Toutefois, ce type d'instrument est aussi considéré comme étant le plus éloigné des comportements réels des parents comparativement aux entrevues et aux observations (Holden, 2001). En effet, l'utilisation de questions à choix multiples ou d'une échelle de type likert, réduit une relation parent-enfant complexe à quelques mots. Il est aussi possible que la formulation des questions tende davantage à prendre en compte l'intention du parent face à un comportement de son enfant, ce qui peut s'avérer être

différent du comportement qu'il aurait réellement. Aussi, l'expérience subjective du parent peut venir biaiser les résultats de différentes façons. Plus un parent est en détresse, moins il sera en mesure de rapporter objectivement les comportements réels (Chamberlain & Patterson, 1995). Également, les attentes des parents face aux changements suite à une intervention sont une autre source de biais potentiel puisque les parents ont tendance à surestimer les changements (Aspland & Gardner, 2003). Toutefois, il est possible d'éviter plusieurs de ces biais par l'utilisation d'une mesure observationnelle. De cette façon, les biais associés aux attentes des parents quant aux changements suite à une intervention sont moins susceptibles d'être présents. De plus, les mesures observationnelles ont démontré une bonne sensibilité aux changements suite à une intervention (Aspland & Garnder, 2003). La possibilité d'observer les parents en milieu naturel augmente la pertinence de la mesure observationnelle pour la relation parent-enfant puisqu'il est alors possible d'observer les comportements tels qu'ils se produisent réellement tout en tenant compte des interactions parent-enfant. La complexité de la relation parent-enfant peut alors être prise en compte par l'observation de la séquence des événements. Bien que la mesure observationnelle prédise mieux et de façon plus constante les comportements des enfants (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Zaslow et al., 2006), celle-ci requiert énormément de temps pour la formation des observateurs ainsi que pour la collecte des données (Holden, 2001). La famille observée peut d'ailleurs réagir face à l'équipement électronique et agir de façon moins naturelle. L'observateur peut aussi biaiser les résultats par ses attentes et sa connaissance des participants. Ainsi, ces limites font en sorte que ce type de mesure est moins utilisé que le questionnaire autorapporté. Cela dit, plusieurs

auteurs s'entendent pour dire qu'une bonne étude sur les pratiques parentales nécessite l'utilisation d'une mesure observationnelle (Chamberlain & Patterson, 1995).

À cet effet, l'analyse des mesures observationnelles peut s'effectuer à deux niveaux. D'abord, l'analyse micro-analytique réfère à l'observation systématique de la fréquence de comportements prédéterminés (Bell & Bell, 1989). Celle-ci permet d'observer, entre autres, la séquence des interactions parent-enfant. Bien que cette méthode d'analyse requière davantage de temps au niveau du décodage, le peu d'inférence de la part des observateurs rend cette méthode plus objective. Pour sa part, l'analyse macro-analytique ne s'intéresse pas à l'observation de chacun des comportements, mais accorde plutôt une cote générale à l'observation de l'ensemble du visionnement qui résume ou représente un concept particulier. Ce genre d'analyse permet entre autres d'identifier des qualités relationnelles telles que le niveau d'affection démontré par le parent ou la sensibilité maternelle. Bien que ce type d'analyse soit plus accessible et rapide d'utilisation, ces grilles d'observations sont plus sujettes aux interprétations subjectives.

Alors qu'au niveau de la recherche, la mesure observationnelle macro-analytique paraît plus intéressante puisqu'elle permet d'obtenir des données plus rapidement et à un coût moindre, la mesure micro-analytique permet l'obtention d'informations cliniquement plus pertinentes. De plus, pour évaluer le changement des pratiques parentales suite à une intervention, la grille micro-analytique est avantageuse et permet d'évaluer le comportement exact du parent et la séquence des comportements de la famille. La grille d'observation élaborée dans le cadre de ce projet de recherche tient compte de la séquence et ce, dans la façon dont les comportements sont définis. Par exemple, la stratégie éducative qui consiste à donner une conséquence au comportement d'un enfant peut être classée

comme appropriée ou non selon des critères prédéterminés; une conséquence appropriée doit être précédée d'un avertissement par le parent, être appropriée à l'âge de l'enfant et être donnée au moment où l'enfant désobéit. Il est donc nécessaire que l'observateur évalue la séquence des événements afin de pouvoir déterminer si la conséquence donnée par le parent est appropriée ou non. Un autre exemple serait l'utilisation de commandes. Chaque type de commande (directe, indirecte ou négative) peut être classé avec ou sans opportunité, c'est-à-dire que le parent doit laisser suffisamment de temps à l'enfant pour répondre à la commande avant de donner une nouvelle commande ou une conséquence pour que celle-ci soit considérée avec opportunité. Une fois le type de commande déterminé, l'observateur doit alors tenir compte du délai entre la commande et la prochaine action du parent ou de l'enfant. Il est ainsi possible de voir si les pratiques éducatives sont utilisées de façon optimale et ce, en lien avec les pratiques éducatives discutées dans le cadre du programme d'entraînement aux habiletés parentales.

La complémentarité des instruments de mesure

Afin d'aborder la question de la complémentarité des instruments de mesure, voici un bref résumé des résultats autorapportés par les parents obtenus dans l'étude de Normandeau, Letarte, Robaey et Allard (2009) ainsi que les résultats de données observationnelles de l'article 2 provenant du même échantillon. Selon le Parenting Practice Interview (PPI), les parents ayant participé au PEHP et ceux ayant reçu du soutien téléphonique (ST) ont rapporté une augmentation des félicitations et des récompenses, une amélioration de leurs stratégies de supervision et une amélioration quant à la clarté de leurs attentes. De plus, seuls les parents du PEHP ont rapporté une diminution des pratiques éducatives sévères et inconstantes. Selon l'Alabama Parenting Questionnaire (APQ), seuls

les parents ayant participé au PEHP ont démontré une amélioration suite au programme et ce, en étant plus impliqués auprès de leur enfant, en utilisant davantage de pratiques positives et moins de stratégies inconstantes. Finalement, les données observationnelles suggèrent que seuls les parents ayant participé au PEHP utilisent davantage de pratiques positives et ont diminué les pratiques sévères et négatives suite à l'intervention. Un phénomène de triangulation est donc obtenu puisqu'il est possible de constater que ces trois instruments recueillent sensiblement les mêmes résultats.

L'article 1 a mis en évidence que plusieurs des sous-échelles du PPI et de l'APQ mesurent les mêmes pratiques éducatives dont la discipline sévère et inconstante, la supervision, la punition corporelle et l'utilisation de pratiques positives comme des félicitations et des récompenses. Les résultats du PPI et de l'APQ sont concordants quant à la discipline sévère et inconstante. Tous deux rapportent une diminution uniquement chez les parents du groupe PEHP. Une amélioration des stratégies de supervision est rapportée pour les groupes PEHP et ST mais uniquement par le PPI. Tel que discuté dans l'article 1, bien que ces sous-échelles mesurent sensiblement les mêmes pratiques éducatives, elles s'adressent à des parents d'enfants de groupes d'âge différents. Par exemple, l'APQ s'adresse à des parents d'enfants d'âge scolaire et ceci se reflète par des questions telles que « Votre enfant ne vous laisse pas de note ou ne vous laisse pas savoir où il va » et « Votre enfant reste à l'extérieur de la maison le soir et revient plus tard que l'heure à laquelle il devait entrer ». En contrepartie, le PPI s'adresse à des enfants de 3 à 8 ans où une plus grande supervision de l'adulte est nécessaire. Ceci est bien représenté dans le questionnaire tel que le démontre cette question : « Dans les dernières 24 heures, environ combien de temps votre enfant a-t-il passé à la maison sans la supervision d'adulte, s'il y a lieu? ». Huit

choix de réponses sont offerts aux parents allant de « aucune » à « plus de 4 heures ». Cette différence dans le contenu des énoncés permettrait d'expliquer les différences quant aux résultats observés avec les sous-échelles comparables des deux instruments de mesure. Mais, la distinction la plus importante entre ces deux instruments se situe au niveau des sous-échelles « félicitations et récompenses » du PPI et « pratiques positives » de l'APQ. Alors que le PPI rapporte une différence suite à l'intervention chez les parents du groupe PEHP et ST, une amélioration est notée par l'APQ seulement pour les parents du groupe PEHP.

Comment est-il possible d'expliquer cette différence entre le PPI et l'APQ, deux mesures autorapportées? Une hypothèse associée à la formulation des questions est proposée. La formulation des questions du PPI diffère quelque peu de celle de l'APQ. La sous-échelle des pratiques positives de l'APQ contient 6 items tous formulés de la même façon et permettant au parent d'identifier la fréquence à laquelle il utilise ces pratiques éducatives. Le parent répond à chaque question (p. ex : « Vous laissez savoir à votre enfant lorsqu'il fait quelque chose de bien ») sur une échelle de 1 (jamais) à 5 (toujours). Contrairement à l'APQ, le PPI utilise différents types de questions à l'intérieur de la sous-échelle félicitations et récompenses. Cette sous-échelle contient 11 items, dont sept sont formulés de façon similaire à ceux de l'APQ, mais quatre sont formulés différemment. Ces quatre items ne ressemblent pas à ceux de l'APQ et ne mesurent pas l'utilisation de certaines pratiques éducatives. Ils évaluent les attitudes ou opinions des parents quant aux différents principes éducatifs plutôt que les comportements. Par exemple, le parent doit répondre à différentes affirmations sur une échelle de 1 (fortement en désaccord) à 7 (fortement en accord) telles que « Donner une récompense aux enfants pour un bon

comportement est de la manipulation » et « Je crois à l'utilisation des récompenses pour enseigner à mon enfant comment se comporter correctement ». Les changements rapportés par le PPI chez les parents du groupe ST suite à l'intervention pourraient être associés, entre autres, à une réflexion de leur part, à une prise de conscience en lien avec ces principes éducatifs.

En ce qui a trait à la mesure observationnelle, deux sous-échelles ont été élaborées dans le cadre de ce projet, soit les pratiques négatives/sévères et les pratiques positives. La sous-échelle pratiques négatives/sévères inclut les comportements suivants : critiquer l'enfant, donner des commandes négatives (p.ex. ne prends pas ta cuillère pour manger tes légumes ou arrête de crier) avec et sans opportunité d'obéir, et les contacts physiques négatifs (p.ex. le parent serre le bras de l'enfant et celui-ci démontre de la douleur et taper ou frapper l'enfant). La sous-échelle des pratiques positives inclut les comportements suivants : les félicitations (spécifiques ou non), les commentaires/questions descriptives et encouragements ainsi que les récompenses appropriées. Les résultats de cet instrument sont similaires à ceux rapportés par l'APQ quant à l'augmentation du pourcentage de pratiques positives chez les parents du groupe PEHP et similaires à ceux de l'APQ et du PPI uniquement quant à la diminution du pourcentage des pratiques sévères/négatives chez les parents du groupe PEHP.

Bien que les résultats entre les mesures autorapportées et la mesure observationnelle soient similaires, cette dernière fournit de l'information cliniquement plus intéressante. L'observation des comportements en milieu naturel augmente la validité écologique de cette mesure. De plus, les résultats obtenus tiennent compte de la séquence des comportements et des interactions parent-enfant telles qu'expliquées précédemment. En

conclusion, l'apport unique d'une mesure observationnelle pour l'évaluation des changements dans les pratiques parentales suite à une intervention contribue à rappeler l'importance d'utiliser cette méthode en complémentarité des mesures autorapportées au-delà des limites qu'elle présente.

Retombées pour l'intervention

Suite à cette réflexion, il est possible d'identifier certaines caractéristiques importantes reliées aux instruments de mesure pour l'évaluation des changements des pratiques éducatives suite à une intervention. Entre autres, les questionnaires autorapportés doivent expliquer et définir clairement les habiletés qu'ils cherchent à évaluer (Ware, Brook, Davies, & Lohr, 1981) et mesurer les comportements plutôt que les attitudes ou les opinions face aux principes éducatifs généraux. La formulation des questions est alors primordiale pour une bonne évaluation. Finalement, l'utilisation d'une mesure observationnelle est essentielle à l'évaluation des pratiques éducatives et s'avère un complément important aux mesures autorapportées par l'information clinique qu'elle fournit. En somme, l'utilisation de stratégies diversifiées de collectes de données offrirait des résultats plus riches et plus représentatifs de l'ensemble des pratiques éducatives.

Bien que la grille d'observation présentée dans cette thèse soit utile au niveau de la recherche, celle-ci présente toutefois une limite importante rendant son utilisation par des cliniciens trop laborieuse. Notamment, le grand nombre de catégories de comportements à observer rend son utilisation en milieu naturel inconcevable. Le nombre de catégories se doit d'être réduit à l'essentiel, c'est-à-dire aux comportements qui fourniront des pistes d'interventions concrètes pour le clinicien. Il serait alors pertinent d'utiliser uniquement les catégories de comportements utilisées dans les sous-échelles pratiques positives et pratiques

négatives/sévères puisque ces comportements représentent les pratiques éducatives associées à l'adaptation des enfants, soit, respectivement, au développement de compétences sociales (Wahler & Meginnis, 1997) et aux problèmes de comportements (Hawkins et al., 1998; Patterson, Reid, & Dishion, 1992) . Cette grille contiendrait alors six catégories comportementales, ce qui est beaucoup plus réaliste pour une utilisation en milieu naturel. La force de cette grille micro-analytique se situerait aussi au niveau de sa capacité à tenir compte de la séquence des événements et ce, due à la façon dont les catégories comportementales sont définies. Cette dernière permettrait donc de tenir compte des interactions et de la bidirectionnalité des échanges dans une famille.

Futures recherches

La méthode d'observation reste l'une des meilleures façons d'évaluer les pratiques éducatives pour les cliniciens. De ce fait, ils ont besoin d'un outil permettant rapidement l'obtention d'informations cliniquement significatives. L'adaptation d'une grille d'observation reste alors une priorité afin de fournir aux intervenants les outils les plus adéquats possible. Les études futures reliées au changement des pratiques éducatives doivent aussi continuer à utiliser les mesures observationnelle en complémentarité avec les mesures autorapportées, et ce, malgré leurs limites.

Finalement, bien que les résultats de l'évaluation de l'influence des facteurs de risque sur le changement des pratiques éducatives aient démontré que ceux-ci n'avaient pas d'impact sur la capacité des parents à changer suite à l'intervention, il est tout de même essentiel de continuer à s'intéresser aux facteurs modérateurs. Entre autres, une validation du modèle de Belsky pourrait contribuer à l'avancement des connaissances sur le sujet. En validant le modèle et en établissant l'importance relative de chacun des facteurs

déterminants des pratiques éducatives, il serait plus facile ensuite d'aller vérifier l'effet modérateur des facteurs ayant le plus de poids quant à leur influence sur les pratiques éducatives. Ces informations sont pertinentes non seulement pour les familles ayant un enfant atteint du trouble déficit d'attention avec hyperactivité, mais aussi pour toutes les clientèles desservies par des intervenants psychosociaux.

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ANNEXE – APPENDIX A

Information on observational measurement of parent-child interactions and development of the coding scheme

Observational measurement of parent-child interactions

Although self-report instruments are the most commonly used method to measure parenting practices, observational measures should be considered an important asset and used more frequently. The advantages and disadvantages of each are explored in the following discussion.

According to Holden (2001), over two thirds of parenthood instruments are questionnaires. Self-reports on parenting practices are readily available and easy to use. They require very little training and time to collect data. Self-reports assess parenting across many contexts and over time. It is no surprise that they are a favourite choice for data collection. Although it may seem to be the best option, self-report measures of parenting are the most removed from actual behaviours when compared with observations or interviews (Holden, 2001). Whether the questions are answered with likert-type scales, multiple choice or true or false questions, items are generally formulated into a single sentence. A complex experience is therefore reduced into a few words. Also, while instruments are designed to assess parenting practices, in some cases, it would be more accurate to describe them as measuring parental behavioural intentions (Holden, 2001). Asking parents how they think they would react or behave in a hypothetical situation measures parental behavioural intentions which may be different from their actual behaviours. Another issue with self-reports is that the subjective experience of the parent can bias the results. According to Chamberlain and Patterson (1995), the more distressed parents are the less reliable reports of parenting behaviours are. The respondent's mood and expectations about intervention may also influence the results. It could be problematic to rely solely on self-reports because parents tend to overestimate changes following an

intervention (Aspland & Gardner, 2003). Observational measures represent an alternative to self-reports because many of the problems associated with questionnaires are avoided.

Observational coding scheme have great advantages but also important limitations. According to Aspland and Gardner (2003), an important advantage is that bias associated with expectancy is less likely when using an observation-based method. Also, observational measures have been shown to be particularly sensitive to change in parent behaviours following an intervention (Aspland & Gardner, 2003). Observations can be conducted in a variety of settings. Home observations have the advantage to assess naturally occurring behaviours specific to that context. Furthermore, observations can take into account interactions between the parent and the child. Questionnaires can assess the parent's view or the child's view according to the respondent. On the other hand, observations can account for both parent and child behaviours simultaneously. Finally, the sequence of events can be recorded and provides valuable information. On the negative side, parents may react to the observer or the technical equipment which could in turn affect their own behaviours (Holden, 2001). Also, the coder may interfere with the objectivity of the data. The expectations and knowledge the observer has of the participants may affect the way he/she codes behaviours. Another important limitation of observational coding scheme is that it requires a considerable amount of time for training coders and collecting data (Holden, 2001). However, compared with self-reports, observation-based measurement have demonstrated stronger and more consistent prediction of child outcomes (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Zaslow et al., 2006). According to Chamberlain and Patterson (1995), "a meaningful study of parenting practices requires an observation database" (p.221).

Microanalytic coding systems

There are two different levels of analysis commonly used in observational measures: micro and macro level. Microanalytic coding systems are based on overt behaviours which can be explicitly described (Bell & Bell, 1989). The observer records the frequency of predetermined verbal or nonverbal behaviours. For example, an observer may record the number of time a baby smiles during a 5 minute of play with his/her mother. Microanalytic coding systems are recommended when there is a high frequency of behaviours as well as when looking at sequential patterns of interaction. Since behavioural codes should be clear and explicit, there should be little inference from coders and therefore less bias. A disadvantage of microanalytic coding systems is the amount of time required for coding. Compared with macroanalytic coding scheme, microanalytic methods required extensive training and the coding time can be overwhelming.

In their 20 year review, Locke and Prinz (2002) identified over 30 standardized observational systems which included 9 microanalytic coding scheme. Of the better known microanalytic systems are the Family Interaction Coding System (Reid, 1978), the Dyadic Parent-Child Interaction Coding System (DPICS; Robinson & Eyberg, 1981; Webster-Stratton, 1985) and the Response-Class Matrix (Mash, Terdal, & Anderson, 1973). The Family Interaction Coding System assesses both parenting practices and nurturance. It has 29 behaviour codes representing positive, negative and neutral behaviours. Behaviours are coded continuously throughout the observation. The DPICS also consists of 29 behaviour categories. Parenting practices are assessed by recording the frequency of behaviours such as commands, praise and warnings. According to Locke and Prinz (2002), both of these instruments have well-established psychometric properties. The Response-Class Matrix

uses matrices to evaluate contingencies in parent-child interactions. One observer codes parent's responses behaviours while a second one codes the child's responses behaviours. This coding system provides the researcher with a clear idea of interaction patterns between a parent and his/her child.

According to Hill, Maskowitz, Danis and Wakschlag (2008), measures that include elements such as harsh physical discipline or other behaviours that are "red flags" for clinician as well as behavioural sequences are likely to be clinically informative. Many microanalytic systems, including the ones mentioned above, are clinically informative. Although they are clinically informative, the labor-intensive nature of these systems makes them less suitable for clinician or research groups with smaller budgets and time-constraints. Simpler codes capturing global properties of behaviour may be more useful in those situations.

Macroanalytic coding systems

Macroanalytic coding systems do not look at individual behaviours but rather assign a single code to summarize or represent a specific concept. The coder gives a code or rating usually after an entire observation session (Holden, 2001). It is with the frequency of certain behaviours over an extended period that the coder is able to assign a code. Although the training is not as extensive as for a microanalytic coding scheme, it is still very important because the coding is often vague and includes a judgment on the part of the coder.

Examples of macroanalytic coding include the Home Observation for Measurement of the Environment Inventory (Caldwell & Bradley, 1984) and the Parent-Child Interaction

System (Deater-Deckard, Pylas, & Petrill, 1997). The Home Observation for Measurement of the Environment Inventory is an observational tool to rate parent-child interactions at home. This instrument includes various versions for parents of children of different ages. Each version is developmentally appropriate and items are clustered to create subscales such as acceptance, involvement and encouragement. The Parent-Child Interaction System includes 13 different categories for parents and child behaviours on 7-points likert-type scales. The instrument can be used in a clinic setting or at home.

Macroanalytic coding systems are well suited to identify patterns of interpersonal events that occur in a family system and the interdependence of behaviours within family relationships (Grotevant & Carlson, 1989). These systems are suitable for both clinical and research setting because they are easy to create and use. Although they are simpler than microanalytic coding scheme, macroanalytic systems do not provide clinician with specific behaviours upon which to base their intervention.

In order to measure parenting practices and changes in parenting following an intervention, microanalytic observation codes are necessary because they preserve the precise actions of individuals. Microanalytic observation codes "capture the moment-to-moment contingencies of family members' behaviours toward one another" (Grotevant & Carlson, 1989, p.14). In addition, macroanalytic observation codes are well suited for relational properties of the whole family as well as single construct defined by overt behaviours. A combination of these two methods will provide information on the processes of interaction within the family as well as general pattern of interactions for the whole family and therefore, a more comprehensive understanding of families.

Context of this study

A new observational measure was developed to evaluate parenting practices. In addition, this measure had to be sensitive enough to evaluate changes in parenting practices following a parent training program and have elements that took into account the pervasive nature of behaviours from children with ADHD and its influence on the parent-child interaction. Consequently, the observational measure had to take into account the following: the parenting skills taught in the parent training, practices which are susceptible to change following the intervention, parenting skills that may lead to change in children's behaviours, the setting in which to conduct the observation, and finally a time of the day or natural event that took into account the effects of the children's medication. The next sections provide details of the observational coding scheme.

Development of the observational coding scheme

First, the observational tool used by the parent training program developer, the Dyadic Parent-Child Interaction Coding System (DPICS; Webster-Stratton, 1985), was used as a starting point. This version of the DPICS was an adapted version of Robinson and Eyberg's measure mentioned previously.

Since one objective with the coding scheme was to measure parenting practices, only categories of behaviours pertaining to parents were kept. These behavioural categories from the DPICS are presented in Table 1. Remaining behaviours were assessed to determine whether they should be kept intact, revised or removed completely. Other objectives were to ensure that important parenting practices that the program intended to change and that are significant because they lead to changes in children's behaviours were not omitted. The

parenting practices taught in the program are: the importance of parental attention, effective praise, tangible rewards, clear limit setting, ignoring misbehaviour, time out consequences, and consequences. Finally, children affected with ADHD present characteristics that are stressful, demanding and intrusive in nature which are likely to evoke negative reactions from parents (Johnston & Mash, 2001). Contextual information was therefore important to better understand parental behaviours in the face of adversity. Videos of families in their homes were picked at random and viewed to assess whether the parent behaviours were present in the sample and made sense.

Final coding scheme

The final coding scheme includes 15 behavioural categories to assess parenting practices and three rating scales to assess the mood and context at the time of the observation. The final coding scheme categories and scales are presented in Table 1. Descriptions of parental behaviours and rating scales are presented in Appendix B and the observation coding sheet is presented in Appendix C.

Table 1: *Parental Behavioural Categories in the DPICS and the New Observational Coding Scheme*

	DPICS	Final coding scheme
Behavioural categories	Acknowledgement	Acknowledgement
	Praise (un/labelled)	Praise (un/labelled)
	Descriptive comment/encouragement	Descriptive comment or
	Descriptive question/encouragement	question/encouragement

	Physical positive	
	Positive affect	
	Grandma's rule (no/with opportunity)	Expectation (same as grandma's rule)
	Warning	Warning
	Direct command (no/with opportunity)	Direct command (no/with opportunity)
	Indirect command (no/with opportunity)	Indirect command (no/with opportunity)
	Negative command	Negative command (no/with opportunity)
	Critical statement marital	
	Critical statement	Critical statement
	Physical negative	Physical negative
	Physical intrusion	
	Ignore	Ignore (in/appropriate)
	Time out warning	Time out warning
	Irrelevant verbalization	
	Questions	
	Statement	
	Problem solving	
Other category	Time out	
New categories		Time out (in/appropriate)
		Consequence negative (in/appropriate)
		Reward (in/appropriate)
Scales	Valence	Valence
New scales		Frequency of interaction
		Children's level of physical activity

Observation setting and procedures

Setting

Parenting practices were observed at home, in the family's natural setting. The family was filmed during meal time. Many observations are conducted in a dyadic context where parents are asked to complete structured activities with their child. These activities or tasks may help create a situation where behaviours can be observed but may also be unrealistic for the family. For example, structured activities such as making puzzles or reading books may not occur frequently in the family's home. A family dinner does allow observing behaviours as they would occur naturally. In North America, dinner usually represents a time when families sit together which makes it a good contender to observe parent-child interaction. According to Fiese and Shwartz's report (2008), shared family mealtimes are packed with events that can lead to either favourable or adverse effects on child development. This repetitive routine creates a significant behavioural setting for family interactions.

Other reasons why dinner was chosen as the setting of observation were related to the children's characteristics. Children in this study were taking medication. The effects of medication usually (depending on what time medication was taken) start dissipating before dinner. Therefore, we expected children to be acting out more and parents to use their parenting skills during this time frame. Lastly, children with ADHD have difficulties with transitions. Leaving their activity to have dinner is a transition and we expected this event to create a good opportunity for parents to use their parenting practices and increase the probability to observe parenting skills.

Procedures

A research assistant, blind to the treatment condition, was designated to call parents and make an appointment to go into their home to film parent-child interactions during dinner time. Assistants were asked to position the camera in order to see the child with ADHD and possibly the target parent without changing the family's routine. Before the recording started, research assistant explained to the family members what was going to happen. Family members were given the following instructions:

- The research assistant will stay beside the camera in case of a problem but will not interact with the family or pay attention.
- The research assistant will listen to music or do homework to keep busy during the recording and help family members stay as natural as possible.
- Try not to talk to the research assistant throughout your dinner. If you need to talk to the research assistant, get up and touch the assistant shoulder to let him/her know.
- Our goal is to see the family's natural interactions. Therefore, we ask that you keep your routine and habits as usual.

The research assistant was instructed to start the recording slightly before dinner (when children were first called for dinner) and to stop the recording after the child had left the table and had finished his/her dinner. The assistant filmed the family during their dinner on two occasions approximately 16 weeks apart.

Coding procedures

Family meals are as unique as the members it includes and the length of a meal can vary greatly between families. On average, family mealtimes last approximately 20 minutes (Fiese & Schwartz, 2008). The minimum required time for an observation was 5 minutes and the maximum time used was 20 minutes. If a family dinner lasted 40 minutes, only the first 20 minutes of the dinner was coded. In order to have a common starting point for all the families, the coding started when all children present at the table were served their food regardless of whether parents were sitting at the table and eating with the children or not. The observation was divided into 5-minutes intervals for a maximum of four intervals.

Behaviour categories were coded in a continuous fashion and resulted in the total frequency of each behaviour per 5-minute interval. At the end of each interval, coders were required to stop de recording in order to code the three rating scales. Each clearly demarcated sentence defined one verbal behaviour. Each time a behaviour stopped for two second (i.e. pause) and then continued, the continuation after the pause was coded as a new behaviour. Finally, each behaviour was coded into only one category.

Coding of the participants was conducted by the author and a research assistant. Observers were blind to the participant's experimental condition and families were selected randomly. Although a coding sheet was available, coding was performed on a software program called The Observer by Noldus Inc. (Noldus, Trienes, Hendriksen, Jansen, & Jansen, 2000). Thirty hours of training were necessary to achieve acceptable observer agreement. Reliability was calculated for 18% of family mealtime observed (n = 28). Reliability was assessed using Cohen's kappa (Cohen, 1960), and results are presented in Table 2. According to Fleiss' classification, a kappa of .40 to .60 is considered as fair, .60

to .75 as good, and over .75 as excellent (Fleiss, 1981). Although all the behaviour categories were based on observations of a random sample of families during the coding scheme development, many behaviours were not observed within the selected 20 minutes.

Utilizing observational data

Once the coding has been completed, there are many ways to use the observational data. From the coding of the observation, raw frequencies are available – how often each behaviour occurred. According to Bakeman and Gottman (1997), raw frequencies should be transformed into rates. Frequencies vary with the amount of observation time. Rates, on the other hand, can be comparable across individuals. Rates are frequencies that have been divided by the amount of observation time. For example, individual A was critical 20 times in 20 minutes and individual B was critical 20 times in 5 minutes. Looking at frequencies would be misleading because it would appear that both individuals are equally critical. In comparison, individual A has a rate of one critical statement per minute while individual B has a rate of 4 critical statements per minute. Individual B displays more critical statement than individual A. Another option is to transform the frequencies in probabilities or percentages. The probability or percentage gives us the proportion of one behaviour relative to the total number of behaviours recorded. For example, if individual A has a total of 100 behaviours coded, the probability for individual A to make a critical statement is .20 or 20% of his/her behaviours are critical.

Table 2: *Reliability Coefficients for the Observational Coding Scheme*

Variables		kappa
Acknowledgement		.85
Praise	labelled	.73
	unlabelled	.82
Descriptive comment or question/encouragement		.61
Reward	inappropriate	-
	appropriate	1
Expectation		.74
Warning		.54
Direct command	no opportunity	.42
	with opportunity	.48
Indirect command	no opportunity	.63
	with opportunity	.53
Negative command	no opportunity	.59
	with opportunity	.54
Critical statement		.76
Physical negative		.69
Ignore	inappropriate	.76
	appropriate	.70
Time out warning		-
Time out	inappropriate	-
	appropriate	-
Consequence (inappropriate)	inappropriate	-
	appropriate	-
Valence		.52
Frequency of interaction		.56
Children's level of physical activity		.50

Rates, probabilities and percentages are descriptive statistics that can be used to compare individuals. More complex composite scores can be created by combining individual behaviours and rating scales. Frequencies can be transformed into ratings which in turns, can be combined with other rating scales. There are many ways to use the information provided by observation and choosing the appropriate strategy is more a personal choice than a right or wrong answer.

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ANNEXE – APPENDIX B

Description of parental behaviours and rating scales

Parental behaviour description

Acknowledgment. An acknowledgment is a brief verbal response to the child's verbalization or behaviour that contains no manifest content other than a simple yes or no response to a question, or that communicate recognition of something the child has said or done, with no descriptive content.

Praise (labelled or unlabelled). Labelled praise is any specific verbalization that expresses a favourable judgment upon an activity, product, or attribute of the child. An unlabelled praise is a nonspecific verbalization that expresses a favourable judgment on an activity, product, or attribute of the child.

Descriptive comment or question/encouragement. A descriptive comment is a statement or phrase that describes what the child is doing. Frequently there is a quality that sounds much like a radio announcer or someone who is describing an ongoing activity to a blind person. These comments express an interest in what the child is doing in the here and now. They are not about what the child may have done in the past or will be doing in the future. A descriptive question is a question that expresses approval, appreciation or positive acknowledgement of the child's efforts, attributes or products.

- Encouragement is a statement or phrase that expresses approval, appreciation, or positive acknowledgment of the child's efforts, attributes or product.

Reward (appropriate/inappropriate). A reward or positive consequence is given when something positive for the child is given to the child for compliance or when something negative is taken away from the child. The reward has to be given immediately. It may be preceded by an expectation. The reward must be clearly positive for the child.

Expectation. An expectation is a positive or negative command that specifies a positive consequence if the child complies.

Warning. A warning is a statement that includes a command accompanied by a negative consequence for noncompliance that is appropriate for the behaviour demanded.

Direct command (no/with opportunity). A direct command is a clearly stated order, demand, or direction in declarative form. The statement must be sufficiently specific as to indicate the behaviour that is expected from the child.

- *No opportunity / with opportunity.* No opportunity occurs when the child is not given an adequate chance to comply with a command. On the other hand, if the child is given adequate chance to comply with a command, code with opportunity.

Indirect command (no/with opportunity). An indirect command is an order, demand, or direction for a behavioural response that is implied, nonspecific, or stated in question form.

Negative command (no/with opportunity). A negative command tells the child not to do something. It is a type of critical statement, but conveys more specific behavioural information.

Critical statement. A critical statement is a verbalization that finds fault with the activities, products, or attributes of the child. Blame statements and "guilt-tripping" statements are coded critical statement.

Physical negative. A physical negative is a parent-initiated touching of the child that inflicts pain, restrains the child, forces or pulls the child, or accompanies a critical remark.

Ignore (appropriate/inappropriate). Deviant behaviour is ignored when the parent remains silent, maintains a neutral facial expression, avoids or breaks eye contact with the child and makes no movement in response to the child, except to turn away. It must last a minimum of five seconds or be an obvious ignore. If the parent continues to watch the child calmly, or continues to talk with the child as if nothing had happened, code "inappropriate ignore". If the parent walks away, code "inappropriate ignore". Walking away gives power to the child.

Time out warning. A Time out warning is a statement in which the parent threatens to put the child in Time out or send the child to her/his room if the child does not comply. Sometimes the command is left unstated.

Time out (appropriate/inappropriate). A time out occurs when the parent sends the child to a neutral area, or into an isolated area such as her/his room, for not complying. A time out should be preceded by a time out warning and be appropriate for the child's age.

Consequence (appropriate/inappropriate). A negative consequence is given when something positive for the child (i.e. playing video games) is taken away from the child for noncompliance or when something negative (i.e. cleaning the bedroom) is given to the child. The consequence has to be given immediately. It should be preceded by a warning and be appropriate for the behaviour demanded.

Rating scales description

Valence. Valence describes the emotional tone of the content behaviours and is coded on the basis of nonverbal gestures, body posture, facial expressions, and tone of voice and/or inflections. Each coded content behaviour is also rated for valence using a scale

ranging from unrestrained negative to exuberant affect (see scale and anchor point definitions below).

Valence scale:

1	2	3	4	5
unrestrained negative affect	negative affect	neutral affect	positive affect	exuberant affect

1 - *Unrestrained negative affect.* Behaviours are rated as (1) when the interactant expresses clear and pronounced anger, disapproval, displeasure or demeaning affect in the coded interaction. In this rating the emotional tone of the interactant is very negative; showing pronounced displeasure with a person or situation. Facial expressions and gestures denoting hostility, anger, extreme irritation, depression or disapproval are rated as (1). Voice tones for this category are loud, harsh, tense, threatening, angry, provocative, extremely sad, depressed or unhappy. Any spanking or Destructive warrants a (1).

2 - *Negative affect.* This category represents negative affect which is less clearly articulated or pronounced than (1). Code (2) when either or both voice tone and facial expression indicate the interactant's mild displeasure, irritation, sadness, contempt, slight hostility and/or mild disapproval. Facial expressions and tone of voice are similar to those described as unrestrained negative but are simply less extreme.

3 - *Neutral affect.* Neutral affect is coded for behaviours that are in a neutral tone of voice in the absence of either effusive or hostile nonverbal gestures. Neutral affect

(3) represents a level of interchange that is typical of casual acquaintances, business associates, or general conversations between family and friends. Only slight fluctuations in affect remain coded in (3), where greater changes require the scoring of either positive or negative valence. When a person is animated or energetic but not clearly in a positive or negative valence, code (3) neutral affect.

4 - *Positive affect.* This rating is used when there is notable warmth, interest, pleasure, supportiveness or affection expressed in an interactant's behaviour. (4) is coded when a behaviour is expressed with laughter, pleasurable facial expressions (smiling), affection and/or enthusiastic interest.

5 - *Exuberant affect.* This rating represents pronunced expressions of intense happiness, warmth, affection, pleasure or supportiveness. The difference between (4) and (5) is that (5) indicates more intense expressions of positive affect that are unmistakably pleasurable and are less controlled. Intensity may be expressed by loudness, length of nonverbal gesture or the intensity of voice intonation or gesture. For example, (5) may be coded in some cases when the interactant whispers, provided his/her facial expression and gestures indicate intense happiness, approval or support. When a child collapses in a fit of giggles, code a (5).

Children's level of activity. Children's level of activity describes to overall energy level of children during dinner and is coded on the basis of body movement as well as tone of voice and rate of speech. Each interval is rated for a level of activity using a scale ranging from inhibited to agitated (see scale and anchor point definitions below).

Children's level of activity scale:

1	2	3	4
inhibited	calm	active	agitated

1 – *Inhibited.* Inhibited is coded when children do not move on their chair and do not talk, or very little. In this category, children would seem to show restraint and have very little spontaneity. They might have eye contact with someone and may even answer questions with a non-verbal response or a short response but will not interact or move unless asked to. This may be partly due to the presence of the camera in their home.

2 – *Calm.* Calm is coded when children are still, speak slowly and use a soft tone of voice. There may be interactions but the overall energy level from children is calm.

3 – *Active.* Active is coded when children are engaged in the activity and are energetic. Children may talk a lot and use gesture while speaking. They may be squirmy and move on their chair. If the behaviours are disruptive to the dinner, then code (4).

4 –*Agitated.* This category represents constant bodily movement or a rapid rate of speech which may be unrelated to the discussions. These behaviours from children may be disruptive to the activity. For example, children may be standing up and running around during dinner. There may also be screaming or yelling as children get more excited.

Frequency of interaction. The frequency of interaction describes the amount of conversation or communication between the target parent and children present during dinner. A global rating is assigned for each 5-min interval. The frequency of interaction between family members is rated on a scale ranging from no interaction to continuous interaction (see scale and anchor point definitions below).

Frequency of interaction scale:

1	2	3	4
no interaction	limited interaction	moderate interaction	continuous interaction

1 – *No interaction.* There is no interaction when parents have a conversation which does not include children or when nobody talks to one another. There may be a few interactions between the target parent and a child but mainly related to the activity at hand (i.e. dinner). For example, parents may ask children what they want for dessert or if they want more chicken. These are mainly questions relevant to dinner but are not considered interactions in which both members are involved.

2 – *Limited interaction.* Limited interaction is coded when there are only a few exchanges between parents and children during a 5-minute interval. Code (1) if the only interactions are related to the dinner (i.e. asking what the child want on his/her hot-dog or if the child wants more spaghetti). This category is represented by few interactions.

3 – *Moderate interaction.* Moderate interaction is coded when there are exchanges and discussions between family members but at times, there are no conversations.

Code (3) if there is one or two period when there are no exchanges between parents and children (i.e. either there may be no conversations at all or parents may have a conversation with each other which does not include children).

4 – *Continuous interaction.* This category represents constant interaction between the target parent and children. It is a reciprocal relationship in which parents and children are involved. The tone of the discussions does not have to be positive since it is not about the valence. It is rather about the frequency of interaction within the family. If both parents contribute to the discussion, you can still code (5) as long as the target parent is still involved in the discussions.

ANNEXE – APPENDIX C

Coding sheet

Coding sheet

	Frequency within a five minute period			
Parent Behaviours	**Beg. time: ____ End time: ____**	**Beg. time: ____ End time: ____**	**Beg. time: ____ End time: ____**	**Beg. time: ____ End time: ____**
negative command w/ opp				
negative command no opp				
direct command w/ opp				
direct command no opp				
indirect command w/ opp				
indirect command no opp				
critical statement				
physical negative				
ignore appropriate				
ignore inappropriate				
warning (if then) + negative cons.				
expectation (if then) + positive cons.				
consequence negative/ appropriate				
consequence negative/ inappropriate				
reward appropriate				
reward inappropriate				
time out warning				
time out appropriate				
time out inappropriate				
acknowledgment				
praise labelled				

praise unlabelled				
descriptive question/ encouragement				
descriptive comment/ encouragement				

	Global score for each 5 minute window			
Scale	**Beg. time: ____ End time: ____**	**Beg. time: ____ End time: ____**	**Beg. time: ____ End time: ____**	**Beg. time: ____ End time: ____**
Valence (scale of 1 to 5)				
Children's level of physical activity (scale of 1 to 4)				
Frequency of interaction (scale of 1to 4)				