Development of a Measure to Assess Parents’ Readiness to Change Parenting Behaviours

Jeffrey Perron

Thesis submitted to the Faculty of Graduate and Post-Doctoral Studies in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Clinical Psychology

School of Psychology
Faculty of Social Sciences
University of Ottawa

© Jeffrey Perron, Ottawa, Canada, 2018
Abstract

There has been increasing attention given to ways to extend the reach of parenting supports to benefit as many parents as possible. Public health-style information campaigns are a relatively new and promising way of reaching parents. However, the impact of public health-style supports such as media campaigns can be difficult to measure. Numerous public health efforts have benefitted from the application of frameworks that measure readiness to change, a construct that can be measured in the absence of overt behaviour change. According to the Stages of Change model, individuals can be categorized in terms of their readiness to engage in health-related behaviours. However, the applicability of the Stages of Change model to parenting is not well understood.

In order to assess the applicability of the Stages of Change model to parenting, I followed best practices in test development to create a measure of readiness to change parenting behaviours. The Parent Assessment of Readiness to Change (PARC) is a 20-item measure of readiness to change parenting behaviours that includes four subscales: Precontemplation, Contemplation, Action, and Maintenance. In the first study, experts were consulted on a preliminary item pool. In the next study, the PARC was pilot tested with a small group of parents. In a third study with a community sample of 381 Canadian parents, I found evidence of internal consistency, convergent validity, discriminant validity, and the hypothesized factor structure. Subsequently, I used confirmatory factor analysis with data from a new sample of 384 Canadian parents to replicate the original four-factor structure. I also further assessed the PARC’s factor structure by conducting analyses with a combined sample that included data from both of the large samples I collected (combined $N = 765$). The four-factor structure was consistent across parent gender and child age categories. The research conducted on the PARC
as part of this dissertation represents a novel application of the four-factor Stages of Change model to parenting behaviours among community parents. My findings suggest that the PARC is a measure with initial evidence of sound psychometric properties that may be useful in research on parents involved in a wide range of parenting programs.
Acknowledgments

To my thesis supervisor, Dr. Catherine Lee. You have been steadfast in your support and guidance over the past six years. You have helped me grow not only academically, but professionally. I am grateful for the unknown number of hours you have spent reviewing my work, providing feedback, and coaching. Your guidance has shaped me into the researcher and clinician I am. I look very forward to continuing our work together beyond this dissertation.

To my thesis committee members, Dr. John Hunsley, Dr. Cary Kogan, and Dr. Allison Ouimet, thank you for your expertise, feedback, and time during the development of my dissertation, particularly during recent months. Your thoughtful and expert review of my work has undoubtedly strengthened my dissertation and made me a better researcher.

A special thank you is due to the parents and experts who participated in my research, sharing their time, feedback, and knowledge. This work could not have been completed without you.

My family members deserve the bulk of the credit for my work and the person I am. To my mother, Susan Sproul, you set the standard for academic excellence and hard work in our family. Every day I am on a mission to have your kindness, compassion, and empathy live on in my work. To my father, Luc Perron, you have always stood by me since day one. Your dedication to the family is second to none. I owe much of my progress in life to you.

Ultimately, this work was completed thanks to the unwavering support of my wife, Sara. You are the best partner and teammate I could have ever imagined. There are no words that to do justice to the person you are and my gratitude for the relationship we have. Any adequate description of the thanks that are owed to you would undoubtedly require more words than are included in this dissertation.
Statement of Co-Authorship

This dissertation includes two manuscripts. Both manuscripts were prepared in collaboration with Dr. Catherine M. Lee, my dissertation supervisor. For both manuscripts, I am the first author and Dr. Lee is the second author. I was responsible for executing the data collection strategies for the component studies of my dissertation, item development, research ethics board correspondence, managing research assistants, data coding, statistical analyses, and manuscript preparation and submission. Dr. Lee provided consistent expert guidance and oversight in virtually all areas of research, particularly in the areas of study conceptualization and planning, statistical analysis, and manuscript preparation and review.
Table of Contents

Abstract .......................................................................................................................... ii
Acknowledgments ....................................................................................................... iv
Statement of Co-Authorship ....................................................................................... v
General Introduction .................................................................................................. 1
  Evidence-Based Parenting Supports ...................................................................... 2
  Readiness to Change ............................................................................................... 6
Application of Readiness to Parenting Behaviours .................................................. 12
Development of Evidence-Based Assessments ....................................................... 20
The Current Study ..................................................................................................... 23
Manuscript One .......................................................................................................... 27
  Abstract ................................................................................................................... 28
  Development of a Measure to Assess Parents’ Readiness to Change Parenting Behaviours .. 29
  Transtheoretical Model of Change ..................................................................... 30
  Study 1 .................................................................................................................... 37
  Study 2 .................................................................................................................... 40
  Study 3 .................................................................................................................... 43
General Discussion ................................................................................................... 53
References .................................................................................................................. 58
Table 1 ....................................................................................................................... 65
Table 2 ....................................................................................................................... 66
Manuscript One Appendix A .................................................................................... 67
Manuscript One Appendix B .................................................................................... 68
Manuscript One Appendix C .................................................................................... 69
Manuscript One Appendix D .................................................................................... 70
Manuscript Two .......................................................................................................... 71
  Abstract ................................................................................................................... 72
  Introduction ............................................................................................................. 73
  Study 1 .................................................................................................................... 76
  Study 2 .................................................................................................................... 83
General Discussion ................................................................................................... 91
References .................................................................................................................. 97
Table 1.......................................................................................................................... 102
Table 2.......................................................................................................................... 103
Table 3.......................................................................................................................... 104
Table 4.......................................................................................................................... 105
Table 5.......................................................................................................................... 106
Manuscript Two Appendix A....................................................................................... 107
Manuscript Two Appendix B....................................................................................... 108
Integrated Discussion................................................................................................. 109
References.................................................................................................................... 127
Appendix A.................................................................................................................. 142
Appendix B.................................................................................................................. 144
Appendix C.................................................................................................................. 145
Appendix D.................................................................................................................. 164
Appendix E.................................................................................................................. 178
Appendix F.................................................................................................................. 195
Appendix G.................................................................................................................. 202
General Introduction

This dissertation entails a series of studies designed to assess the applicability of the readiness to change construct to parenting behaviours. First, I address the importance of parenting. Next, I provide a brief overview of the history of evidence-based parenting supports, highlighting those offered at a population level. I underline the relevance of the measurement of parents’ readiness to change parenting behaviours in light of the increasing availability of evidence-based parenting supports. Next, I describe a prominent readiness to change model, the Transtheoretical Model of Change (TTM), paying particular attention to the Stages of Change (SOC) component of the model. I describe in detail measures assessing SOC and present strategies for establishing psychometric properties of measures.

To examine the applicability of the full SOC model to parenting behaviours it was necessary to develop a measure to assess SOC for parenting. Therefore, I outline the rationale and steps necessary for developing a measure of SOC for parenting behaviour change. The development and preliminary validation of such a measure was the primary focus of my dissertation. This allowed me to better understand whether and how the concept of readiness to change applies to changing parenting behaviours.

Following this introductory section, two manuscripts describing the development of my SOC-based measure of readiness to change parenting behaviours are presented. In the first manuscript (Perron & Lee, 2018a), the three studies conducted to develop the Parent Assessment of Readiness to Change (PARC) are described. The PARC was adapted from the University of Rhode Island Change Assessment Scale (URICA; Prochaska & DiClemente, 1983), a commonly used SOC measure. The first study involved expert consultation on a preliminary item pool I generated. Next, the PARC was pilot tested with a small group of parents. In a third study with a
community sample of Canadian parents (N = 381), I found evidence of internal consistency, convergent validity, discriminant validity, and factor structure. In the second manuscript (Perron & Lee, 2018b), replication of the PARC’s factor structure in a new sample (N = 384) is described and tests of the structure’s consistency across parent gender and child age categories are explained.

Following presentation of the two manuscripts that outline the four component studies of this dissertation, I include a general discussion that provides a synopsis of the evidence found in support of the PARC’s validity and highlights key areas of research that are yet to be explored. Implications of my findings for evidence-based parenting programs are also discussed.

**Evidence-Based Parenting Supports**

Parenting practices have an impact on a broad range of critical developmental outcomes for children (Grusec, 2011). These include child mental and physical health, behaviour, and cognitive development (Patterson, Barlow, Mockford, Klimes, Pyper, & Stewart-Brown, 2002; Phillips & Shonkoff, 2000). More specifically, parenting plays a critical role in the development of language (Pungello, Iruka, Dotterer, Mills-Koonce, & Reznick, 2009), social skills (Bates & Pettit, 2015), problem solving (Raikes & Thompson, 2008), and emotion regulation (Betts, Gullone, & Allen, 2009). Further, children learn moral values and social conventions in the family context largely through the process of parenting (Grusec, 2011).

Parents play a critical role in creating structure and helping children learn that they have some degree of control over their own actions (Grusec, 2011). Not surprisingly, it has been proposed that parenting be a top public health priority (Foster, Prinz, Sanders, & Shapiro, 2008). However, despite the critical nature of parenting in the development of the child, most parents receive no formal parent training or education (Mytton, Ingram, Manns, & Thomas, 2014).
Evidence-based parenting supports are designed to promote parent behaviours that improve the relationship with the child, enable the child to learn new skills, as well as encourage the use of nonviolent discipline techniques to help the child develop emotion regulation skills (Kaehler, Jacobs, & Jones, 2016; Sanders, Kirby, Tellegen, & Day, 2014). The parenting programs best-supported by research evidence are those grounded in social learning theory (Bandura, 1977). Patterson’s observational research on families (e.g., Patterson, Chamberlain, & Reid, 1982) identified coercive interactional cycles in which family members inadvertently reward one another for undesirable behaviours. This work influenced the development of a number of social learning-based parenting interventions including the Community Parent Education Program (COPE; Cunningham, Bremner, & Secord-Gilbert, 1993), Defiant Children (DC; Barkley, 1987), Helping the Noncompliant Child (HTNC; Forehand & McMahon, 1981), Incredible Years (IY; Webster-Stratton & Herbert, 1994), Parent-Child Interaction Therapy (PCIT; Eyberg, 1988), and Triple P – Positive Parenting Program (Triple P; Sanders, 1999).

Early evidence-based parenting programs sought to increase the number of positive interactions between parents and their children through behavioural strategies including positive attention for desirable behaviour, consistent clear rules and expectations, and consequences including time outs for rule-breaking behaviours (Maughan, Christiansen, Jenson, Olimpia, & Clark, 2005; Taylor & Biglan, 1998). Increasingly, these programs place a focus on the prevention of behavioural, emotional, and developmental problems by enhancing the knowledge, skills, and confidence of parents (Sanders, 2008). Sessions of such programs are delivered individually or to groups of parents by trained facilitators (Sanders, 2012).

Evidence-based parenting programs yield changes in parenting practices, satisfaction in the parental role, and a sense of efficacy in parenting, in addition to positive child social,
emotional, and behavioural outcomes (Sanders, Kirby, Tellegen, & Day, 2014). Meta-analyses of studies on the efficacy of parenting programs have found positive effects in terms of parent behaviour (Kaminski, Valle, Filene, & Boyle, 2008; Lundahl, Risser, & Lovejoy, 2006; Nowak & Heinrichs, 2008; Sanders et al., 2014), child externalizing behaviour (Furlong et al., 2012; Lundahl et al., 2006; Maughan et al., 2005; McCart et al., 2006; Piquero, Farrington, Welsh, Tremblay, & Jennings, 2009; Sanders et al., 2014), and parent adjustment (Furlong et al., 2012; McCart et al., 2006; Nowak & Heinrichs, 2008; Sanders et al., 2014).

Social learning-based programs are widely recognized as the ‘gold standard’ in promoting childhood wellbeing and preventing behavioural problems. Both the United Nations (UN; 2009) and World Health Organisation (WHO; 2009) have recommended their use. These programs are endorsed in treatment guidelines. For example, in the United Kingdom (UK), the National Institute for Health and Care Excellence (NICE) has recommended the use of group-based parenting programs for the management of children with conduct disorder (NICE, 2013) and as a first-line treatment for children with attention deficit hyperactivity disorder (ADHD; NICE, 2013). The American Academy of Child and Adolescent Psychiatry (AACAP) has made similar recommendations related to treatment of ADHD (AACAP, 2007a), oppositional defiant disorder (ODD), and conduct disorder (CD; AACAP, 2007b). These recommendations are based on the abundant evidence that parenting programs are efficacious in facilitating the development of parenting skills that support or enhance the social, emotional, and cognitive development of the child (Mercy & Saul, 2009).

**Access to Evidence-based Parenting Supports**

Despite the benefits associated with – and growing availability of – evidence-based parenting programs, parents face numerous barriers to accessing these programs (Wells, Sarkadi,
The majority of parents who are concerned about their child’s behaviour do not receive any parenting programs and an even smaller proportion receives programs that are evidence-based (Lee et al., 2014; Sanders, 2012). Consequently, large numbers of parents who could potentially benefit from these services do not engage in them (Bunting, 2004; Friars & Mellor, 2007; Prinz & Sanders, 2007; Sanders, 2008). Even for parents who start programs, a significant minority do not complete them (Nock & Ferriter, 2005).

Research on participation in parenting programs has provided insight into program features and formats that parents find appealing and the barriers that most frequently prevent participation (e.g., Schmidt, Chomycz, Houlding, Kruse, & Franks, 2014; Wells et al., 2016). Parent-related variables that negatively impact participation include lower socio–economic status (SES; e.g., Peters, Calam, Harrington, 2005) and single parenthood (e.g., Kazdin, Holland & Crowley, 1997; Zubrick et al., 2005). Parents also report time constraints and transportation difficulties as impacting their ability to participate in programs (Morawska & Sanders, 2006).

**Future Directions in the Provision of Parenting Support**

There has been increasing attention given to ways to extend the reach of parenting programs to benefit as many parents as possible (e.g., Enebrink, Danneman, Mattsson, Ulfsdotter, Jalling, & Lindberg, 2015; Fives et al., 2014; Houlding, Schmidt, Stern, Jamieson, & Borg, 2012; Prinz, Sanders, Shapiro, & Whitaker, 2009; Sanders, 2008; Sanders, 2012). This has included the development of “lighter touch” parenting supports which take a public health approach (e.g., Enebrink et al., 2015; Gagné, Lachance, Thomas, Brunson, & Clément, 2014; Sanders, 2012). For example, Sanders (2012) and colleagues have developed a public health approach to parenting support by offering a blend of universal and targeted interventions as part of the Triple P Positive Parenting Program (Triple P). Each of Triple P’s 5 levels corresponds to
a different level of intensity and breadth, ranging from wide-reaching information campaigns (Level 1) to highly focused family interventions (Level 5). Empirical support has been found for each level (Sanders et al., 2014). This approach allows administrators and service providers to adopt the intensity that best matches their resources and the needs of their target users (Sanders, 2012).

Wide-reaching, public health-style information campaigns are a relatively new way of supporting parents. This type of light touch campaign may reduce barriers to accessing parenting supports and could be effective in helping parents become aware of parenting supports (Enebrink et al., 2015). However, the impact of media campaigns can be difficult to measure. Media campaigns are designed to increase awareness or interest in available parenting resources and to decrease stigma about support seeking, rather than to promote measurable change in parenting behaviour (Enebrink et al., 2015; Gagné et al., 2014; Nock & Photos, 2006; Sanders, 2012).

Lessons learned from other health-related fields may prove useful in identifying means of measuring outcomes associated with public-health style interventions. Outside the realm of parenting, numerous other public health efforts have benefitted from the application of frameworks that measure readiness to change, a construct that can be measured in the absence of overt behaviour change (Norcross, Krebs, & Prochaska, 2011).

Readiness to Change

Readiness to change is defined as a “willingness or openness to engage in a particular process or to adopt a particular behaviour” (DiClemente, Schlundt, & Gemmell, 2004, p.104). The most prominent framework for conceptualizing readiness is the Transtheoretical Model of Change (TTM; Norcross et al., 2011). As a construct, readiness to change has been applied to a wide-range of health-related behaviours (Nigg et al., 1999). However, preliminary research has
been conducted to examine the relevance of readiness to change as it relates to parenting and the adoption of new parenting behaviours (Jones, Putt, Rabinovitch, & Hubbard, 2017; Littell & Girvin, 2005; Niec, Barnett, Gering, Triemstra, & Solomon, 2015; Proctor, Brestan-Knight, Fan, & Zlomke, 2018; Nock & Photos, 2006; Wade & Andrade, 2015). One promising strategy for measuring the impact of population-level parenting interventions could be to apply behaviour change theories that assess readiness to change, such as the TTM (Prochaska & DiClemente, 1983) to parenting behaviours (Platt & Riches, 2016; Proctor et al., 2018; Wade & Andrade, 2015).

According to the TTM, individuals move through stages of change readiness as they begin to consider behaviour change, make behaviour change, and eventually integrate new behaviours into their day-to-day life (Norcross et al., 2011). Within the TTM, behaviour change is not considered as an event (e.g., quitting smoking). Instead, change is conceptualized as a progression through five stages of change (SOC): Precontemplation, Contemplation, Preparation, Action, and Maintenance (Velicer, Prochaska, Fava, Norman, & Redding, 1998).

During Precontemplation individuals have no intention to change behaviour in the near to mid-term. They are unaware or under-aware that a problem exists. An individual in the Contemplation stage acknowledges a need to make a behaviour change but has not yet made a change in behaviour. Preparation is the stage in which individuals intend to take action in the coming months and may have already made small, positive behavioural changes. Action is the stage in which individuals are engaged in actively modifying their behaviour. In Maintenance, individuals work to prevent regression to previous stages and further integrate gains into their lives (Norcross et al., 2011). According to the model, when individuals endeavour to change a behaviour, they move from being unaware or unwilling to change, to considering change,
eventually taking change-related action, and then maintaining the change over time (Miller & Rollnick, 2002).

The SOC model has been found to be applicable to a range of health behaviours, including smoking cessation, quitting cocaine use, weight control, avoidance of high fat foods, adolescent avoidance of delinquent behaviours, condom use, sunscreen use, avoidance of radon gas exposure, exercise acquisition, mammography screening, and physicians' preventive practices with smokers (Prochaska et al., 1994). In addition, Nigg et al. (1999) demonstrated that behaviour change progresses according to the SOC framework for 10 health behaviours (seatbelt use, avoidance of high fat food, eating a high-fiber diet, attempting to lose weight, exercising regularly, avoiding sun exposure, sunscreen use, attempting to reduce stress, quitting smoking, and conducting cancer self-exams).

This research suggests that across different health-related behaviour change targets, the steps through which “behaviour changers” move are often similar. This has greatly influenced how researchers and clinicians conceptualize change (Norcross et al., 2011). Health-related behaviour change is viewed as occurring through a series of steps, in which each step involves different tasks for the individual making change and requiring different types of support from clinicians (DiClemente, 1999; Joseph, Breslin, & Skinner, 1999). Individuals with lower levels of readiness to change differ reliably from individuals with higher levels of readiness on measures of change process, activity, decisional considerations, and self-efficacy (key cognitive and behavioural components of the TTM; Carbonari & DiClemente, 2000; DiClemente, Prochaska, & Gibertini, 1985; Prochaska & DiClemente, 1985; Prochaska et al., 1994).

For example, Prochaska et al. (1994) found that, across 12 different health behaviours, participant reports of the advantages and disadvantages of changing varied in the expected
manner in relation to SOC. Specifically, across all 12 behaviours studied, individuals in Precontemplation reported more disadvantages than advantages to changing. Perception of advantages was higher for those in Contemplation than those in Precontemplation. Perceptions of disadvantages of changing were lower for those in Action than for those in Contemplation.

Despite the evidence in support of the applicability of SOC to a number of health-related behaviours, there has been debate about the evidence to support categorizing readiness to change according to discrete stages, instead of along a continuum (Carey, Purine, Maisto, & Carey, 1999; DiClemente & Prochaska, 1998; Littell & Girvin, 2002; West, 2005). Some studies have not found evidence to support the notion of sequential progress through stages (Brug et al., 2004; Littell & Girvin, 2002; West, 2005). Other studies have found nonsignificant relations between SOC and treatment attendance, length, or completion (e.g., Cady, Winters, Jordan, Solberg, & Stinchfield, 1996; Isenhart, 1997; Kavanagh, Sitharthan, & Sayer, 1996; Willoughby & Edens, 1996). Further, some researchers have tested and not found support for stage-matched interventions for smokers (Aveyard, Massey, Parsons, Manaseki, & Griffin, 2009) and drinkers (Callaghan, Taylor, & Cunningham, 2007).

**Measuring Readiness to Change**

The debate over whether readiness should be conceptualized as occurring in discrete stages or along a continuum has influenced how readiness is measured (Health and Addictive Behaviours: Investigating Transtheoretical Solutions Laboratory, 2017). There are multiple ways to measure an individual’s current SOC. Staging algorithms assess SOC with a short series of questions (usually 3-10) related to intention and action towards changing a target behaviour (Polaschek, Anstiss, & Wilson, 2010). For example, DiClemente et al.’s (1991) smoking cessation staging algorithm entails three items to classify the respondent’s SOC. Items include,
“Are you seriously considering quitting smoking within the next 6 months?;” “Are you planning to quit smoking in the next 30 days?;” and “In the last year how many times have you quit for at least 24 hours?”

Staging algorithms can be easily administered and have been developed for a range of behaviours. These include reduction of alcohol use (Maddock, Laforge, & Rossi, 2000), engaging in exercise (Marcus, Selby, Niaura, & Rossi, 1992), smoking cessation (DiClemente et al., 1991), reducing sun exposure (Rossi, Blais, Redding, & Weinstock, 1995), and weight loss (O’Connell & Velicer, 1988).

Despite their appeal and ease of administration, staging algorithms have a number of limitations (Polaschek et al., 2010). The greatest concern is that specific cut-off scores are arbitrary. For example, according to DiClemente et al.’s (1991) smoking cessation algorithm, an individual who plans to quit smoking in 30 days would be categorized as being in a different stage than an individual who plans to quit in 31 days. A psychometric limitation with these measures is that, due to the limited number of items, factor analysis is not appropriate. However, factor analysis is necessary to test for unobserved latent variables representing the theorized SOC (Streiner et al., 2015).

Although algorithms provide a rapid means of assessing SOC in clinical settings, the measure most commonly used in SOC research (Norcross et al., 2011) is the URICA (Prochaska & DiClemente, 1983). The URICA was developed as part of early TTM validation research (Prochaska & DiClemente, 1983). Prochaska and Clemente’s (1983) 40-item scale, the Processes of Change Test was adapted by McConnaughy, DiClemente, Prochaska, and Velicer (1989) to create a 32-item Stages of Change Questionnaire. Principal components analysis (PCA) established a 4-component solution with acceptable internal consistency for scores from each of
the four subscales (Cronbach’s alpha [α] for Precontemplation = .79; Contemplation = .84; Action = .84; and Maintenance = .82) in a sample of 327 American outpatient psychotherapy patients. Hunsley and Mash (2018) indicate that adequate internal consistency is associated with α values of .70–.79, good internal consistency is associated with α values of .80–.89, and excellent internal consistency is associated with α values of ≥ .90. It is important to note the 4-component solution identified by McConnaughy et al. (1989) differs from the 5-stage Precontemplation-Contemplation-Preparation-Action-Maintenance model that was presented in early TTM research (Prochaska & DiClemente, 1983) as there is one stage labeled Contemplation rather than two labelled Contemplation and Preparation.

The URICA items were established by McConnaughy et al. (1989) and the title URICA was first used when DiClemente and Hughes used the scale with individuals entering an alcoholism treatment program (DiClemente & Hughes, 1990). Subsequently, the URICA was adapted for use with a number of health-related behaviours including cocaine cessation (Pantalon, Nich, Franckforter, & Carroll, 2002), heroin cessation (Belding, Iguchi, & Lamb, 1996), and polydrug cessation (Abellanas & McLellan, 1993; Carney & Kivlahan, 1995; El-Bassel et al., 1998). The adaptations modified URICA items to either a target substance or removed reference to specific behaviours. Consequently, adapted scales were of similar length to the original URICA.

Psychometric testing of URICA adaptations have demonstrated that the four-factor solution is robust across a range of behaviours, demographics, and populations (e.g., Chan, Chan, Siu, & Poon, 2007; Dozois, Westra, Collins, Fung, & Garry, 2004; Dunn, Neighbors, Larimer, 2003; Gómez-Peña et al., 2011; Hunt, Coffey, Stasiewicz, & Schumacher, 2006; Khalil, 2011; Laplante-Leveque, Hickson, & Worrall, 2013; Levesque, Gelles, & Velicer, 2000; Mander et al.,
2012; Petry, 2005; Polaschek et al., 2010). Adequate, good, or excellent internal consistency estimates have been reported for scores on each subscale across a number of studies (e.g., Dozois et al., 2004; Gómez-Peña et al., 2011; Khalil, 2011; Laplante-Leveque et al., 2013; Petry, 2005; Polaschek et al., 2010).

**Application of Readiness to Parenting Behaviours**

Given the applicability of the readiness construct, the SOC model, and the URICA to a wide range of health-related behaviours, it is reasonable to hypothesize that it may apply to parents in relation to changing parenting behaviours. Specifically, a psychometrically sound measure of parents’ stage of readiness to change may be useful in the evaluation of population-level parenting supports. Such a measure could potentially assess whether light touch parenting supports such as media campaigns make parents more aware for the need to change, as reflected by changes in their level of readiness or SOC.

To test this hypothesis, it is necessary to have a measure of readiness to change parenting behaviour. Four measures, each influenced by the TTM to varying extents, have been developed to assess parent readiness to engage in an in-person parenting program (Brestan, Ondersma, Simpson, & Gurwitch, 1999a; Brestan, Ondersma, Simpson, & Gurwitch, 1999b; Littell & Girvin, 2005; Nock & Photos, 2006).

Two readiness measures inspired by the TTM are the Readiness, Efficacy, Attributions, Defensiveness, and Importance Scale (READI; Brestan et al., 1999a) and the Parent Motivation Inventory (PMI; Nock & Photos, 2006). Two other measures that involve adaptation of the URICA to parenting behaviours are the Parent Readiness for Change Scale (PRFCS; Brestan et al., 1999b) and an un-named measure developed by Littell and Girvin (2005). Each of these TTM-related measures is described below.
Readiness, Efficacy, Attributions, Defensiveness, and Importance Scale

Brestan et al. (1999a) developed the 61-item READI to assess parental readiness to engage in treatment related to child behaviour difficulties. The READI was designed to assess seven constructs: Readiness (readiness for treatment; 8 items), Efficacy (parental efficacy; 8 items), Attributions (parent attributions for child behaviour problems; 4 items), Defensiveness (defensiveness towards treatment; 8 items), Importance (belief in the importance of treatment; 9 items), Belief in Corporal Punishment (6 items), and Lie (social desirability; 18 items). The READI was initially administered to 28 parents presenting to a community-based clinic for group parent training. Precise internal consistency statistics were not provided for scores on each subscale, though Brestan et al. (1999a) indicated that internal consistency estimates were in the range of alpha = .50 - .83, with the exception of the Attributions scale (alpha = .27).

Niec et al. (2015) administered the READI to married and cohabitating couples who were parents of sixty 2-to-7 year-old children with clinical level conduct problems. Psychometric testing of the READI indicated that scores on six of the READI’s seven subscales demonstrated either adequate or good internal consistency. Of note, scores on the 8-item Readiness scale had good internal consistency (α = .87). Jones et al. (2017) also administered the READI’s 8-item Readiness subscale to 69 parents of children being assessed for ADHD. They identified good internal consistency for scores on the subscale (α = .82).

Proctor et al. (2018) administered an abbreviated form of the READI (READI-SF) to a community sample of 103 parents of 3-to-7-year-old children, 15 of whom subsequently participated in a one-session parenting class. The participants were recruited from an urban charter school. Eighty-eight percent of children at the school received free or discounted meals.
The racial and ethnic profile of the school was 99% African American and 1% Hispanic. The parent gender composition of the sample was not reported.

Exploratory factor analysis (EFA) of the 17-item READI-SF indicated that 15 items and three factors (Importance, Treatment Readiness, and Readiness to Change) provided a “mediocre to reasonable fit to the data” (Proctor et al., 2018, p. 1059). Although there is no consensus on EFA sample size adequacy, this sample size is below the item-to-participant ratio of 1:10 recommended by some experts (e.g., Costello & Osbourne, 2005). The READI-SF demonstrated good-to-excellent internal consistency for scores on each of its subscales: Importance (5 items; α = .88), Treatment Readiness (4 items; α = .83), and Readiness to Change (6 items; α = .89).

Using data from the 15 parents who later attended a one-session parenting class, a binomial linear regression was conducted as a preliminary assessment of predictive validity. It was hypothesized that READI-SF scores would predict attendance at the parenting class. The hypothesis was supported, with READI-SF total scores significantly predicting attendance ($\chi^2(1) = 10.1, p = .001$).

As a preliminary assessment of convergent validity, correlations between READI-SF scores and scores on a measure of parent motivation to engage in treatment (PMI) were examined. The researchers found a moderate correlation between READI-SF and PMI scores ($r(57) = .33, p = .01$).

**Parent Motivation Inventory**

Nock and Photos (2006) developed the PMI, a 25-item scale to measure parent motivation to engage in treatment related to child conduct problems. Although construction of the PMI was informed by TTM research, the PMI was not designed to be a TTM-based measure and was not adapted from any other measure (Nock & Photos, 2006). The PMI was tested with a
sample of 76 parents and caregivers (90.6% mothers) of children with oppositional, aggressive, and antisocial behaviour who had been referred for outpatient treatment. Although the PMI items were designed to address three constructs related to desire for change in the child, readiness to change, and perceived ability to change, a PCA yielded a one component solution. There is disagreement as to the appropriateness of PCA over factor analyses such as EFA and confirmatory factor analysis (CFA). Costello and Osbourne (2005) suggested that factor analysis is preferable to PCA. The size of Nock and Photos’ (2006) sample is also significantly below Costello and Osbourne’s (2005) recommendation of an a priori sample size in the range of 10 participants per item.

Cronbach’s alpha for scores on the PMI was in the excellent range (α = .96). Analysis of data from PMI administrations from the first and fifth session of the treatment program provided evidence of test-retest reliability (Nock & Photos, 2006).

**Parent Readiness for Change Scale**

Brestan et al. (1999b) adapted URICA items to create the 28-item Parent Readiness for Change Scale (PRFCS). Their adaptation included items from the Precontemplation, Contemplation, and Action subscales as they did not consider the Maintenance items relevant to parenting.

Wade and Andrade (2015) examined the psychometric properties of the PRFCS with parents or guardians of 138 children between the ages of 2-12 years who presented to a Canadian community mental health centre for treatment of children’s disruptive and challenging behaviours. The size of this sample is significantly below Costello and Osbourne’s (2005) recommendation of an a priori sample size in the range of 10 participants per item. CFA supported the hypothesized Precontemplation-Contemplation-Action solution. A second-order
factor reflecting overall Readiness was also identified. At least adequate internal consistency was demonstrated for scores on each of the three subscales (\(\alpha = 0.70\) for Precontemplation, \(\alpha = 0.82\) for Contemplation, and \(\alpha = 0.73\) for Action). PRFCS scores converged with ratings of parent and child behaviours, providing evidence of convergent validity. Precontemplation scores were positively associated with low ratings of parent inconsistency and child difficulties. Contemplation and Action scores were associated with higher levels of reported child difficulties than were Precontemplation scores. Further, higher Readiness scores were associated with missing fewer treatment sessions than were missed by parents with lower levels of readiness.

Of note, Niec et al. (2015) used 23 of the original 28 items of the PFRCS in their sample of 120 parents or guardians (cohabitating dyads from 60 families) who engaged in PCIT to address clinical-level child conduct problems. They did not administer the full 28-item PFRCS. The Precontemplation subscale scores demonstrated adequate internal consistency (\(\alpha = 0.78\)). Contemplation and Action scores demonstrated good internal consistency (\(\alpha = 0.87\) and 0.80 respectively).

**Adaptation of the URICA to Services Related to Child Maltreatment**

Littell and Girvin (2005) adapted URICA items to parenting problems by referring to “problems you have in taking care of your children.” Like Brestan et al. (1999b), their adaptation excluded the Maintenance scale as they did not consider the Maintenance items relevant to parenting. The scale was evaluated using data from a sample of 353 American parents receiving in-home services related to maltreatment of their children. Their results did not support the hypothesized Precontemplation-Contemplation-Action structure.

A process of hierarchical linear and nonlinear modelling suggested two unique constructs: Problem Recognition (PR) and Intention to Change (ITC). They also computed an
overall Readiness score. It was found that PR and ITC scores predicted improvements in parenting and family functioning, as well as reductions in the likelihood of reports of child maltreatment within 1 year. ITC predicted reductions in subsequent reports of maltreatment. They concluded that because PR and ITC predicted different outcomes that there is not an advantage to having a combined measure of readiness for change. Results were mixed with regards to predictive validity. The authors provided limited information related to internal consistency, stating only that all subscale scores had internal consistency of \( \alpha > .65 \). A cutoff of \( \alpha > .65 \) falls below Hunsley and Mash’s (2018) criteria for adequate internal consistency.

**Future Directions in the Applicability of the Construct of Readiness to Parenting Behaviours**

There is a growing body of evidence suggesting that the construct of readiness applies to the adoption of parenting behaviours in parents attending programs addressing clinical levels of child behaviour difficulties (Brestan et al., 1999a; Nock & Photos, 2006; Wade & Andrade, 2015). Results from Proctor et al. (2018) suggest that readiness may also apply to the acquisition of parenting behaviours in community settings.

Despite the growing evidence suggesting the relevance of the readiness construct to parenting, findings related to the specific factors that comprise readiness are contradictory. For example, Nock and Photos (2006) found evidence to suggest that among parents (primarily mothers) of children with clinical-level behaviour difficulties, motivation (not explicitly readiness) comprises one factor. However, Littell and Girvin’s (2005) results suggest that among parents receiving treatment related to child maltreatment readiness to change parenting behaviours comprises at least two factors (Intention to Change and Problem Recognition). Among parents of children with clinical-level behaviour difficulties, Wade and Andrade (2015)
found evidence to support three component factors of parents’ readiness to change: Precontemplation, Contemplation, and Action and also identified a second-order readiness factor. Most recently, Proctor et al. (2018) found three factors representing readiness to change parenting behaviours among community parents: Importance, Treatment Readiness, and Readiness to Change.

In the absence of a consensus regarding how readiness to change should be conceptualized as it relates to parenting behaviours, further research is necessary. Given that there is evidence of partial applicability of the SOC model to parenting (Wade & Andrade, 2015) and its broad applicability to other health-related behaviour change, it is reasonable to use this framework in future exploration of the applicability of the construct of change readiness to parenting. Despite this, the applicability of SOC to nonclinical parent populations has yet to be explored. Further, because parenting-related URICA adaptations developed to date have excluded the Maintenance factor, items related to parents’ readiness to sustain their efforts once they have made changes have not been created or assessed.

The Maintenance factor may tap a unique element of parents’ readiness to change parenting behaviours. The Maintenance factor is important because parenting is an iterative and evolving process in which parents may continuously learn and implement new parenting behaviours. They may also be flexible in adapting parenting behaviours and strategies that are effective during certain situations or timepoints, but that are less effective at others. There are some similarities between maintaining new, effective parenting practices and the concept of relapse prevention that the Maintenance factor tapped in early TTM research. Furthermore, it is critical not only that program outcomes be evident at the end of services, but also that parents maintain their gains. The Maintenance factor may tap parents’ ability to maintain the use of
effective parenting behaviours that they have learned in the past or refrain from using behaviours they have learned are ineffective. Consequently, it would be helpful to have a psychometrically strong measure that addresses parents’ readiness to maintain positive changes. The Maintenance factor should be included in future research examining parents’ readiness to change parenting behaviours.

Very limited research has assessed readiness to change parenting behaviours among nonclinical parent populations. Further, I am not aware of any research to date which has sought to develop and assess items that are related to parents’ readiness to sustain their efforts once they have made changes. To address these gaps in the literature, I examined the applicability of the full, Precontemplation-Contemplation-Action-Maintenance SOC model to a community sample of parents in relation to changing parenting behaviours. I hypothesized that I would find evidence of the applicability of this four-factor model to this population. The central task of this line of research was the development of a URICA adaptation entitled the Parent Assessment Readiness to Change (PARC; Perron & Lee, 2018a).

Development of the PARC included four studies designed to produce and examine psychometric evidence to determine whether the PARC meets key criteria associated with evidence-based assessment. Development and testing of a URICA adaptation, specifically, was necessary to test the hypothesis that the SOC model applies to parenting, particularly among community parents, amongst whom readiness to change has been understudied. In addition, testing of a URICA adaptation that includes Maintenance items was important as the applicability of the Maintenance factor to parents’ readiness to change has not been explored despite early evidence of the applicability of the Precontemplation, Contemplation, and Action factors to parenting.
The consideration of whether to assess the applicability of SOC to parenting behaviours using the URICA versus a short staging algorithm was also taken into consideration during the planning of this dissertation. In considering whether a new measure assessing readiness to change parenting behaviours should be based on the URICA or on one of the several SOC staging algorithms, two major issues were considered. First, there is a strong research base demonstrating that the URICA can be readily adapted to behaviours other than the addiction-related behaviours for which it was initially developed. Second, a URICA-based measure would have enough items to allow for a factor analysis to be undertaken to assess for the presence of the hypothesized Precontemplation-Contemplation-Action-Maintenance factor structure. A four-item staging algorithm would not have enough items to allow reliable testing of its factor structure. Given the conflicting literature concerning how readiness in relation to changing parenting behaviours should be conceptualized (Brestan et al., 1999a, Brestan et al., 1999b, Littell & Girvin, 2005; Nock & Photos, 2006; Proctor et al., 2018; Wade & Andrade, 2015) research that does not explore the factor structure associated with a measure of readiness would be of limited utility.

Despite these limitations, it was necessary to address the possibility that a brief staging algorithm could adequately assess parents’ level of readiness to change parenting behaviours. Therefore, a brief staging algorithm meant to assess parents’ SOC in relation to parenting behaviours was developed and simultaneously evaluated alongside the PARC.

**Development of Evidence-Based Assessments**

The studies conducted as part of the development of the PARC entailed examination of key psychometric properties that are the hallmark of evidence-based assessments. To date, many widely used psychological assessments have limited empirical support (Hunsley, Lee, Wood, &
Taylor, 2015; Hunsley & Mash, 2018; Norcross, Koocher, & Garofalo, 2006), so there is an urgent need for measures to be well-developed and carefully assessed.

There are many different approaches to the development of psychological assessments (Holmbeck & Devine, 2009; Worthington & Whitaker, 2006). Criteria for evaluating the quality of such measures have been proposed (Hunsley & Mash, 2018; Newton & Shaw, 2013). Given the number of approaches to the development of psychological assessments, it is important that research in the field be guided by clear criteria and methodology. To this end, the development of the PARC drew upon established guidelines for developing and testing new measures, using Hunsley and Mash’s (2018) criteria for evidence-based instruments. The specific psychometric concepts of the PARC that were assessed as part of the four component studies of this dissertation are described below.

**Reliability**

Reliability refers to the consistency of a respondent’s score on a given measure (Anastasi, 1988). It is an important consideration in evaluating the quality of a measure (Hunsley & Mash, 2018). The element of reliability I sought to establish in the development of the PARC was internal consistency. Internal consistency is commonly measured with the alpha coefficient and refers to the extent to which a given set of items measure the same construct (Streiner, 2003). Hunsley and Mash (2018) proposed that the internal consistency of scores on a set of items be considered adequate for alpha values of .70–.79, good for alpha values of .80–.89, and excellent for alpha values of > .90.

**Validity**

Haynes, Smith, and Hunsley defined validity as “the degree to which variation in scores on an instrument reflects variation in the psychological entity or process of interest” (Haynes et
The specific types of validity that were addressed as part of the development and assessment of the PARC are content validity and construct validity.

**Content validity.** Content validity refers to the extent to which the content of a measure is representative of the construct being measured. The establishment of content validity represents a basic step in the measure development process that has often been overlooked by researchers (Haynes, Richard, & Kubany, 1995). Content validity is established by clearly defining the construct being measured (Hunsley & Mash, 2018) and then inviting one or multiple groups of judges to assess the extent to which the components of the instrument appropriately reflect the content purported to be measured (Holmbeck & Devine, 2009; Hunsley & Mash, 2018). In addition, members of the target population can be invited to provide feedback on the instrument (Holmbeck & Devine, 2009; Hunsley & Mash, 2018).

**Construct validity.** Construct validity is a composite of several types of validity. Those most relevant to the development of the PARC are convergent validity, discriminant validity, and factor structure. Convergent validity refers to the extent to which scores on the new measure are related to scores on instruments that measure theoretically related constructs. The new measure should correlate positively with similar measures and variables (Streiner, Norman, & Cairney, 2008). Discriminant validity, on the other hand, addresses the extent to which the new measure is uncorrelated or negatively correlated with measures and variables that are not relevant or that are opposite to the phenomenon being measured (Hunsley & Mash, 2018).

Factor structure is a concept related to both convergent and discriminant validity. It refers to an underlying structure of a measure onto which individual scale items map. Factor structure is assessed through factor analysis (Gefen & Straub, 2005). Factor analysis is a statistical technique used to identify the number of constructs that underlie a measure’s items and whether the measure
is assessing the intended constructs(s) (Tabachnik & Fiddell, 2001). It is recommended that researchers developing new measures or adaptations of existing measures conduct a factor analysis (Haynes et al., 2011; Holmbeck & Devine, 2009; Worthington & Whitacker, 2006). CFA is used when there is a theoretical foundation for the relations between items and factors in a measure (Worthington & Whitacker, 2006). Given the theoretical foundation of the SOC model and its component factors (Precontemplation-Contemplation-Action-Maintenance), CFA was the analysis most appropriate for exploration of the PARC’s factor structure.

**Norms**

The norms for a measure are data that allow for interpretation of a score relative to others who have responded to the measure (Cohen, Swerdlik & Phillips, 1996). Norms may be expressed as measures of central tendency (Hunsley & Mash, 2018) and are necessary for the accurate interpretation of scores on psychometric measures (Joint Committee on Standards for Educational, & Psychological Testing, 2014). In some cases, a measure requires more than one set of norms in order to compare results with the general population as well as with sub-groups within the population (Holmbeck & Devine, 2009). Hunsley and Mash (2018) suggested that ideally, norms are derived from large, relevant samples as opposed to convenience samples. During the development of the PARC, completion of the measure by two large community samples provided preliminary normative data.

**The Current Study**

The development of the PARC was informed by research on adaptations of the URICA and the aforementioned guidelines for the development of new, evidence-based measures. A series of studies were conducted that addressed content validity (Manuscript One Study One and Manuscript One Study Two), convergent validity (Manuscript One Study One and Manuscript
Two Study One), discriminant validity (Manuscript One Study Three), factor structure (Manuscript One Study Three and Manuscript Two Studies One and Two 4), internal consistency (Manuscript One Study Three and Manuscript Two Studies One and Two 4), and norms (Manuscript Two Study Two).

The studies are presented in Manuscripts One and Two. To elaborate on details that are not included in the submitted manuscripts, I describe below each of the studies and their associated appendices.

**Manuscript One Study One**

This study involved the development of an item pool and subsequent expert consultation on the PARC items and instructions. The original URICA (Prochaska & DiClemente, 1983) was adapted to create the PARC. The 32 items of the original URICA were adapted to address parenting. Four additional items were also created for each stage to capture relevant constructs related to readiness to change parenting behaviours which were not covered in the adapted items. The original PARC therefore included 48 items (12 for each stage).

The first version of the PARC was sent for expert consultation. Based on feedback, PARC items were accepted, modified, or deleted. The purpose of this study was to establish the content validity of the PARC’s items. Recruitment emails were sent to potential participants inviting them to review the PARC and provide feedback. As a supplement to the description of this study included in Perron and Lee (2018a), a copy of the recruitment email is in Appendix A. Appendix B lists the experts who were contacted in this study. The consent form and questions from this study are presented in Appendix C. The expert feedback provided in response to this study’s questions is presented in Appendix D.
Manuscript One Study Two

In this study, the PARC was pilot tested with a small group of parents. It was designed to obtain feedback from parents on the clarity of the instructions and component items of the revised PARC, following best practice recommendations in instrument development (Streiner & Norman, 2008). Based on feedback from participants, PARC instructions and items were accepted, modified, or deleted. Appendix E presents the consent form and questions from this study, including the version of the PARC seen by participants. In order to assess the reading level of the PARC’s items and instructions, I conducted two reading-level tests: the Flesch-Kincaid Grade Level Test (Kincaid, Fishburne, Rogers, & Chissom, 1975) and the Simple Measure of Gobbledygook (SMOG; McLaughlin & Harry, 1969).

Manuscript One Study Three

In this study, internal consistency, convergent validity, discriminant validity, and factor structure were examined in a large community sample of Canadian parents. Factor structure was examined through CFA. To assess convergent validity, scores on the PARC were examined in relation to measures of child behavioural and emotional problems, perceived parental self-efficacy, quality of parenting behaviours, involvement in parenting-related programs and services, and plans to learn new parenting behaviours. To assess discriminant validity, scores on the PARC were examined in relation to a measure of impression management. The consent form and questions are presented in Appendix G.

Manuscript Two Study One

In this study, the PARC was administered to a second large community sample of Canadian parents, providing Canadian norms for the PARC for English-speaking parents of children aged 2-12 years. The Precontemplation-Contemplation-Action-Maintenance structure
identified in the previous study was also replicated in a new sample via CFA. The consent form and questions for Study 4 can be found in Appendix H.

**Manuscript Two Study Two**

Further CFAs conducted on a combined sample that included data from Manuscript Two Study One and this study suggested that the PARC’s factor structure is consistent across parent gender and child age categories. In this sample, internal consistency was adequate, good, or excellent for scores on all subscales for both mothers and fathers.
Manuscript One

Development of a Measure to Assess Parents’ Readiness to Change Parenting Behaviours

Jeffrey Perron   Catherine M. Lee

University of Ottawa

Compliance with Ethical Standards

All procedures performed in studies involving human participants were in compliance with Canadian Psychological Association and American Psychological Association ethical standards and both authors declare that they have no conflict of interest.

Correspondence to:
J. L. Perron
University of Ottawa
Clinical Psychology Program
136 Jean Jacques Lussier, Vanier Hall
Ottawa, Ontario, Canada
K1N 6N5
Abstract

According to the Stages of Change model, individuals can be categorized in terms of their readiness to engage in health-related behaviours. We followed best practices in test development to create a measure of readiness to change parenting behaviours and examined evidence of its validity in community parents with at least one child between the ages of 2-12 years. The Parent Assessment of Readiness to Change (PARC) is a 20-item measure of readiness to change parenting behaviours that includes four subscales: Precontemplation, Contemplation, Action, and Maintenance. The PARC was adapted from the University of Rhode Island Change Assessment Scale, a common Stages of Change measure. In the first study, experts were consulted on a preliminary item pool we generated. Next, the PARC was pilot tested with a small group of parents. In a third study with a community sample of 381 Canadian parents, we found evidence of internal consistency, convergent validity, discriminant validity, and the hypothesized factor structure. The PARC represents a novel application of the four-factor Stages of Change model to parenting behaviours among community parents. Our findings suggest that the PARC is a measure with initial evidence of sound psychometric properties that may be useful in research on parents involved in a wide range of parenting programs.

Keywords: parenting, readiness to change, stages of change, transtheoretical model, confirmatory factor analysis
**Development of a Measure to Assess Parents’ Readiness to Change Parenting Behaviours**

Among the many influences on child development, the family context plays a primary role. Parenting requires adaptation over the course of development to meet the child’s evolving needs (Grusec, 2011). Among the risk and protective factors for the child, parenting is a relatively modifiable element of the developmental context. Consequently, evidence-based parenting supports help parents foster positive environments in which children can learn and grow (Sanders, 2012). A variety of programs based on social-learning theory are efficacious in promoting parenting skills that support or enhance the social, emotional, and cognitive development of the child (Mercy & Saul, 2009). They also reduce parental distress and improve parental well-being (Briesmeister & Schaefer, 2007; Fives, Pursell, Heary, Nic, Gabhainn, & Canavan, 2014; Sanders, Kirby, Tellegen, & Day, 2014).

There has been increasing attention given to ways to benefit as many parents as possible by extending the reach of parenting supports (e.g., Enebrink, Danneman, Mattsson, Ulfsdotter, Jalling, & Lindberg, 2015; Fives et al., 2014; Prinz, Sanders, Shapiro, & Whitaker, 2009; Sanders, 2008; Sanders, 2012). This shift has included the adoption of a public health approach in which support is offered to all parents, not only those experiencing clinical-level difficulties (Sanders, 2012). As not all parents need or desire clinical-level parenting programs, a range of “lighter touch” parenting supports have been developed (e.g., Enebrink et al., 2015; Gagné, Lachance, Thomas, Brunson, & Clément, 2014; Sanders, 2012). Lighter touch approaches include media campaigns, talks, discussion groups, and brief consultations. These supports are designed to prevent parenting-related child developmental behavioural and emotional difficulties (e.g., Enebrink et al., 2015; Sanders, 2012). Research studying their implementation is ongoing (e.g., Charest, Gagné, & Goulet, 2017; Delawarde-Saïas, Gagné, Brunson, & Drapeau, 2018).
An obstacle associated with the implementation of population-level parenting supports is that parents experiencing sub-clinical difficulties may not feel that they are relevant (Nix, Bierman, & McMahon, 2009). Population-level media campaigns are designed to normalize the challenges of parenting and destigmatize support-seeking, however it is difficult to assess their outcomes with current measures (Enebrink et al., 2015; Gagné et al., 2014; Nock & Photos, 2006; Sanders, 2012). Therefore, identifying ways of measuring readiness to engage in – and the subtle changes resulting from – population-level parenting support is essential. A target variable that has received little attention is the extent to which parents are ready to change their parenting (Jones, Putt, Rabinovitch, & Hubbard, 2017; Niec, Barnett, Gering, Triemstra, & Solomon, 2015; Nock & Photos, 2006; Proctor, Brestan-Knight, Fan, & Zlomke, 2018).

Readiness involves a willingness to seek support or to modify a behaviour that is not helpful (DiClemente, Schlundt, & Gemmell, 2004). Effective parenting requires readiness to change parenting behaviours to meet the needs of the developing child (Baker, in press; Grusec, 2011). In measuring parents’ readiness to change, one promising strategy is to apply behaviour change theories that assess readiness to change, such as the Transtheoretical Model of Change (TTM; Prochaska & DiClemente, 1983), to parenting behaviours.

**Transtheoretical Model of Change**

The TTM is an integrative model of intentional behaviour change (Prochaska & DiClemente, 1983). According to the model, behaviour change is best understood not as a single event (e.g., quitting smoking), but as a progression through various stages of readiness (Velicer, Prochaska, Fava, Norman, & Redding, 1998). The model posits that the individual experiences distinct Stages of Change readiness (SOC) including: Precontemplation, Contemplation, Preparation, Action, and Maintenance. In the Precontemplation stage, individuals have no
intention to change behaviour in the near to mid-term. They are unaware or under-aware that a problem exists. An individual in the Contemplation stage acknowledges a need to make a behaviour change but has not yet made a change in behaviour. Individuals in the Contemplation stage acknowledge that they may need to make a behaviour change but have not yet made a change. Preparation is the stage in which individuals intend to take action in the coming months and may have already made small, positive behavioural changes. During the Action stage, individuals actively modify their behaviour. The final stage is Maintenance, when individuals work to prevent regression to previous stages and further integrate gains into their lives (Norcross, Krebs, & Prochaska, 2011).

Readiness to change has been examined for a range of health behaviours including smoking cessation, cocaine cessation, weight control, healthy eating, adolescent avoidance of delinquent behaviours, condom use, sunscreen use, avoidance of radon gas exposure, conducting cancer self-exams, exercise acquisition, stress reduction behaviours, and seatbelt use (Nigg et al. 1999; Prochaska et al. 1994). Given the applicability of readiness to change to a broad range of behaviours, it is reasonable to hypothesize that parents may vary in their stage of readiness to change parenting behaviours. Some changes may simply be those associated with the changing needs of a child; other changes may relate to parenting behaviours or cognitions that are not helpful. To assess the applicability of stage of readiness to change to parenting, it is necessary to first have a means of measuring the stage of change readiness.

The 32-item University of Rhode Island Change Assessment Scale (URICA; McConnaughy, DiClemente, Prochaska, & Velicer, 1989) has been used across many domains to measure stage of readiness to change. Originally, principal components analysis established a 4-component solution with acceptable internal consistency for scores on each of the four 8-item
subscale (Cronbach’s alpha [α] for Precontemplation = .79; Contemplation = .84; Action = .84; and Maintenance = .82) in a sample of 327 American outpatient psychotherapy patients (McConnaughty et al., 1989). It is important to note that this four-component solution differs from the five-stage Precontemplation-Contemplation-Preparation-Action-Maintenance model that was presented in early TTM research (Prochaska & DiClemente, 1983) as there is one stage labeled Contemplation rather than two labeled Contemplation and Preparation.

The URICA has been adapted for use with respect to a number of health-related behaviours (Abellanas & McLellan, 1993; Carney & Kivlahan, 1995; El-Bassel et al., 1998; Belding, Iguchi, & Lamb, 1996; Pantalon, Nich, Franckforter, & Carroll, 2002). The adaptations modified URICA items to either a target substance or removed reference to specific behaviours. Consequently, adapted scales were of similar length as the original URICA.

**Readiness to Change Parenting**

Two URICA adaptations have been developed to address readiness to change in parents who are accessing services due to difficulties in parenting and disruptive behaviour in their children. Littell and Girvin (2005) adapted URICA items to parenting problems. The instructions were revised to refer to “problems you have in taking care of your children.” Their adaptation excluded the Maintenance scale as the authors indicated that they were not examining relapse prevention. The scale was evaluated in a sample of 353 American parents receiving in-home services related to maltreatment of their children. A process of hierarchical linear and nonlinear modelling did not support the hypothesized Precontemplation-Contemplation-Action structure. Instead, two unique constructs were identified: Intention to Change (ITC) and Problem Recognition (PR). Littell and Girvin (2005) also computed an overall Readiness score.
Littell and Girvin found that PR and ITC scores predicted improvements in parenting and family functioning, as well as reductions in the likelihood of reports of child maltreatment within 1 year. ITC predicted reductions in subsequent reports of maltreatment. They concluded that because PR and ITC predicted different outcomes that there is not an advantage to have a combined measure of readiness for change. Results were mixed with regards to predictive validity. The authors provided limited information related to internal consistency, stating only that scores on all subscales had internal consistency of $\alpha > .65$. A cutoff of $\alpha > .65$ falls below Hunsley and Mash’s (2008) criteria for adequate internal consistency. Hunsley and Mash (2008) indicate that *adequate* internal consistency is associated with $\alpha$ values of .70–.79, *good* internal consistency is associated with $\alpha$ values of .80–.89, and *excellent* internal consistency is associated with $\alpha$ values of $\geq .90$.

Brestan, Ondersma, Simpson, and Gurwitch (1999a) adapted URICA items to create the 28-item Parent Readiness for Change Scale (PRFCS) that includes three subscales: Precontemplation, Contemplation, and Action. Instructions were revised to refer to “how a person might feel when thinking about their parenting.” Like Littell and Girvin (2005), Brestan et al. (1999a) did not include Maintenance items as they did not feel that they were relevant to parenting.

Wade and Andrade (2015) administered the PFRCS to parents or guardians of 138 children presenting to a Canadian community mental health centre for treatment of children’s disruptive and challenging behaviours. Of note, the size of this sample is significantly below Costello and Osbourne’s (2005) recommendation of an *a priori* sample size in the range of 10 participants per item. They assessed two models of the PFRCS. The first included the 21 items from the PFRCS that are direct adaptations of URICA items. The second model included only
the 17 scaled items that emerged from the original PRFCS study by Brestan et al. (1999a). The truncated, 17-item version of the PFRCS yielded the best fit to the data. Both of the models assessed by Wade and Andrade (2015) fit the hypothesized three-factor Precontemplation-Contemplation-Action scale when subjected to CFA. Of note, a second-order factor reflecting overall Readiness was identified. Psychometric estimates were stronger than those reported by Littell and Girvin (2005), with at least adequate internal consistency for scores on each of the three subscales (α = 0.70 for Precontemplation, α = 0.82 for Contemplation, and α = 0.73 for Action). Wade and Andrade also found higher readiness to be modestly predictive of fewer missed treatment sessions.

In a related sample, Andrade, Browne, and Naber (2015) administered the PFRCS to 143 parents and guardians of children with clinical-level difficulties. Thirty-seven of these parents participated in parent management training. Latent profile analysis revealed three profiles based on parents’ readiness and parenting skills: “Ready” (40.6% of parents), “Less in Need” (39.2% of parents), and “Almost Ready” (20.2%). Ready parents were associated with relatively higher rates of inconsistent discipline, but also higher levels of positive parenting. Less in Need parents reported relatively lower levels of inconsistent discipline and poor supervision and higher levels of positive parenting. They also participated in significantly fewer treatment sessions. Almost Ready parents were associated with higher levels of inconsistent discipline and poor supervision skills, and low levels of positive parenting.

One non-URICA measure that was initially developed to address readiness to change in parents of children with clinical-level difficulties has recently been tested with a community population. Brestan et al. (1999b) initially developed a 61-item measure entitled the Readiness, Efficacy, Attributions, Defensiveness, and Importance Scale (READI) to assess parental
readiness to engage in treatment related to child behaviour difficulties. Its instructions refer to “how a person might feel when thinking about their parenting.” Niec et al. (2015) administered the READI to married and cohabitating couples who were parents of sixty 2-to-7 year-old children with clinical level conduct problems. Psychometric testing of the READI indicated that scores on six of the READI’s seven subscales demonstrated either adequate or good internal consistency.

Recently, Proctor et al. (2018) administered an abbreviated form of the READI (READI-SF) to a community sample of 128 parents of 3-to-7 year-old children, 15 of whom subsequently participated in a one-session parenting class. The participants were recruited from an urban charter school. The READI-SF initially included 17 items and exploratory factor analysis (EFA) indicated that 15 items and three factors (Importance, Treatment Readiness, and Readiness to Change) provided a “mediocre to reasonable fit to the data” (Proctor et al., 2018, p. 1059). Although there is no consensus on EFA sample size adequacy, this sample size is below the item-to-participant ratio of 1:10 recommended by some experts (e.g., Costello & Osbourne, 2005). The READI-SF demonstrated good-to-excellent internal consistency for scores on each of its subscales: Importance ($\alpha = .88$), Treatment Readiness ($\alpha = .83$), and Readiness to Change ($\alpha = .89$). Using data from the 15 parents who later attended a one-session parenting class, a binomial linear regression was conducted as a preliminary assessment of predictive validity. It was hypothesized that READI-SF scores would predict attendance at the parenting class. The hypothesis was supported, with READI-SF total scores significantly predicting attendance ($\chi^2(1) = 10.1, p = .001$). READI-SF scores accounted for 12% to 22% of the variance in the model.

As a preliminary assessment of convergent validity, correlations between READI-SF scores and scores on a measure of parent motivation to engage in treatment (the Parent
Motivation Inventory; PMI) were examined. It was hypothesized that READI-SF scores would be strongly correlated. The hypothesis was partially supported, with a moderate correlation between READI-SF and PMI scores ($r(57) = .33, p = .01$).

To date, efforts to assess the applicability of readiness to change to parenting behaviours have identified a number of important considerations. For example, research suggests that the Precontemplation, Contemplation, and Action stages may not apply to changing parenting behaviours for parents who are receiving remedial services related to child abuse (Littell & Girvin, 2005) but may apply to parents whose children are receiving services to address clinical-level child behaviour difficulties (Wade & Andrade, 2015). It also appears that readiness as a general construct could be relevant to nonclinical parent populations with regards to changing their parenting behaviours (Proctor et al., 2018).

Despite these important findings, there remain gaps in the literature. For example, no research has examined the applicability of the well-established SOC construct to community parent behaviour change, nor do we have items that are related to parents’ readiness to sustain their efforts once they have made changes. In addition, the factor analyses on relevant measures conducted to date have produced inconsistent results and have generally been conducted with inadequate sample sizes. The inclusion of Maintenance items may allow identification of parents who are similar to those whom Andrade et al. (2015) found to be Less in Need. Furthermore, it is critical that outcomes be evident at the end of support services and also that parents maintain their gains. Consequently, it would be helpful to have a psychometrically strong measure that addresses parents’ readiness to maintain positive changes.

Therefore, we examined evidence of the applicability of the Precontemplation-Contemplation-Action-Maintenance SOC model to a community sample of parents in relation to
changing parenting behaviours. We hypothesized that we would find evidence of the applicability of the Precontemplation-Contemplation-Action-Maintenance model to this population.

**Study 1**

In Study 1 we adapted items from the URICA to parenting behaviours to generate a preliminary item pool for an instrument entitled the Parent Assessment of Readiness to Change (PARC). Next, we assessed content validity of the PARC items by consulting experts on the relevance and comprehensibility of PARC items and instructions.

**Method**

**Preliminary Item Pool.** First, the 32 items of the original URICA were adapted to address parenting. Four additional items were also created for each stage to capture relevant constructs related to readiness to change parenting behaviours which were not covered in the adapted items. The original PARC included 12 items for each stage, with a total of 48 items. A sample Precontemplation item is “It would be a waste of time to try to learn about better ways to parent.” A sample Contemplation item is “Maybe I can learn to be a better parent.” A sample Action item is “I am trying out new ways to parent.” A sample Maintenance item is “Sometimes I feel like I might be slipping back into my old ways of parenting.” Each item is to be rated on a 5-point Likert scale (where 1 = *Strongly Disagree*; 2 = *Disagree*; 3 = *Undecided*; 4 = *Agree*; 5 = *Strongly Agree*). Following best practice in scale development (Streiner, Norman, & Cairney, 2015) a large pool of items was created. This pool would then be reduced based on feedback and psychometric data, so that the final scale would have an equal number of items in each subscale. Those interested in obtaining a list of all items assessed in the development of the PARC are welcome to contact the corresponding author.
Expert Consultation. We used a judgment-quantification approach to evaluate content validity of the items in the preliminary item pool (Grant & Davis, 1997) by inviting expert reviewers to evaluate items (Streiner et al., 2015). The study's protocol was approved by the authors' institutional research ethics board (see Manuscript One Appendix A).

Participants. Participants in Study 1 were 16 experts in one of three fields. Recruitment emails were sent to potential participants ($N = 24$) who were identified as experts in readiness to change ($n = 6$), evidence-based parenting interventions ($n = 14$), or psychological assessment ($n = 4$) inviting them to review the PARC and provide feedback. Experts were directed to a FluidSurveys.com link where they completed the study's measures.

Sixteen experts responded to the request for participation, yielding a participation rate of 66.7%. There were 10 experts in parenting research and interventions, three experts in readiness to change, and seven experts in psychological assessment and measurement. Each expert had experience in more than one of the three domains.

Measures. Participants were asked to rate (on a scale of $1 = \text{does not capture}$ to $7 = \text{completely captures}$; no wording was provided for values between 2 and 6) the extent to which each item of the PARC captured the construct it was intended to measure (Precontemplation, Contemplation, Action, or Maintenance). They also had the opportunity to provide written feedback on each item as well as on the instructions of the PARC. The following definitions were provided for each of the respective SOC: “Precontemplation is the stage in which there is no intention to change behaviour in the foreseeable future;” “Contemplation is the stage in which people are aware that a problem exists and are seriously thinking about overcoming it but have not yet made a commitment to take action;” “Action is the stage in which individuals modify their behaviour, experiences, and/or environment to overcome their problems;” and
“Maintenance is the stage in which people work to prevent relapse and consolidate the gains attained during Action.”

**Analysis.** Responses were examined both descriptively and quantitatively (Holmbeck & Devine, 2009). Items were categorized as: “inadequate” if more than 50% of responses were below 5/7, “moderate” (if 50-89% of responses were 5/7 or higher), or “adequate” (if at least 90% of responses were 5/7 or higher). This was done to bring greater structure to the results and assist in the interpretation of scores.

**Results**

No items were rated as inadequate. Sixteen items were rated as moderately adequate. Thirty-two items were rated as adequate. The stages with the highest number of items rated as moderately adequate were Precontemplation \((n = 8)\) and Maintenance \((n = 5)\). Contemplation had one moderately adequate item and Action had two moderately adequate items. The majority of qualitative comments suggested ways to modify the wording of moderately adequate items in the Precontemplation and Maintenance subscales. Wording suggestions that did not significantly alter the meaning or purpose of the item were accepted. No respondents suggested that the PARC was improperly constructed or irrelevant.

**Discussion**

Overall, experts expressed approval of the measure and the approach taken to assess readiness to change parenting behaviours. Feedback for the measure as a whole, its instructions, and each item was carefully assessed, taking into consideration both quantitative ratings and descriptive comments. Following edits made based on participant feedback, a decision was made to retain only the ten items that had the highest ratings for each stage. The revised scale had a total of 40 items (28 URICA-adapted items and 12 new items), 10 in each of the
Precontemplation, Contemplation, Action, and Maintenance subscales. Maintaining the same number of items per subscale is in accordance with best practice in instrument development (Streiner et al., 2015).

**Study 2**

Study 2 was designed to obtain feedback from parents on the clarity of the wording of the instructions and component items of the revised PARC. In addition, we used standardized assessments to analyze the reading level of the PARC, an important consideration in the development of new instruments (Jensen, Fabiano, Lopez-Williams, & Chacko, 2006).

**Method**

**Participants.** Participants were 4 parents. Parents were eligible to participate if they had a child between the ages of 2-12 years. This age range excludes parents who are dealing with the unique challenges associated with infants/toddlers as well as the unique challenges associated with pubescent children. This small pilot is in line with instrument development guidelines for piloting (e.g., Holmbeck & Devine, 2009) and “pre-testing” (e.g. Streiner et al., 2015) of new instruments.

**Measures.** Two reading-level tests were used: the Flesch-Kincaid Grade Level Test (Kincaid, Fishburne, Rogers, & Chissom, 1975) and the Simple Measure of Gobbledygook (SMOG; McLaughlin & Harry, 1969). These are both widely accepted tests that are used as part of the assessment of a measure’s readability (Si & Callan, 2001). We sought to establish a reading level below Grade 8, a commonly recommended reading level for parent report measures (Jensen et al., 2006).

Demographic information including gender, age, and income, was collected. Participants were asked to read the PARC. For the survey’s instructions, participants were asked, “Are these instructions clear to you?” and “Do you suggest we change any part of these instructions?” For
each item of the survey, participants were asked, “Is this statement clear to you?” and “Do you suggest we change any part of this statement?” Participants were also asked to comment on their experience of taking the PARC and to identify any other concerns.

**Procedure.** The survey was administered online. Self-report data collected online have been found to be generally equivalent to those collected in pen-and-paper format (Weigold, Weigold, & Russell, 2013). Readability was assessed using an online software program. The software used can be found at www.readability-score.com. The software is commonly used in research (e.g. Bell, McGlone, & Dragojevic, 2014). It automatically applies common readability tests to text entered into the software.

To gain access to an appropriate parent sample, recruitment took place through a public health organization offering a range of services. Staff at the organization distributed business cards to parents of children aged 2-12 who were attending vaccination clinics. We reasoned that parental attendance at a vaccine clinic would be unrelated to use of specific parenting practices or accessing parenting supports. The business cards briefly described the study and provided a link to the online survey. The study's protocol was approved by the authors' institutional research ethics board (see Manuscript One Appendix B).

**Analysis.** Responses were analyzed descriptively and through the online readability software.

**Results**

The online readability software indicated that the reading level was at a Grade 5.7 level, as indicated by the Flesch-Kincaid Grade Level Test (Kincaid et al., 1975). The SMOG (McLaughlin & Harry, 1969) yielded a reading level of Grade 5. Both of these scores met the
requirement of a Grade 8 reading level and demonstrate higher readability than the average reported by Jensen et al. (2006).

Parents had an average of 2.75 children. Parents’ children were an average of 10.0 years old. All four parents indicated their age range (one was 25-29; one was 40-44; one was 50-54; one was above 55). Three parents indicated their gender (two female and one male). Three parents indicated their family’s annual income level (one was $30,001-$50,000; one was $50,001-$70,000; one was $90,001-$150,000). There were comments suggesting wording changes for 10 items. Four edits were suggested for Precontemplation items, two edits were suggested for Contemplation items, five edits were suggested for Action items, and one edit was suggested for Maintenance items. No edits were suggested for the instructions.

One parent responded to the question, “Do you have any general comments about the survey?” stating, “I would like to see a focus on parenting SKILLS.” In response, for items in which “parenting skills” could be emphasized (i.e. by changing “parenting” to “parenting skills”), wording edits were made accordingly. Taking into consideration feedback from both Study 1 and Study 2, the PARC was then shortened to 32 items by selecting the eight best-performing items per stage (Streiner et al., 2015).

Discussion

Results from two standardized tests of reading-level suggested that the PARC had a reading level that is acceptable for its intended use with community parents. A small pilot of community parents provided further support for the PARC’s clarity. Participating parents made some suggestions aimed at improving the clarity of the PARC. All items for which lack of clarity was indicated were assessed for possible changes in order to enhance clarity. All changes
suggested by respondents could be made without altering the meaning or purpose of the item, so all suggested changes were made.

**Study 3**

Study 3 was designed to examine some of the psychometric properties of the PARC. Factor structure, internal consistency, convergent validity, and discriminant validity were examined. To assess convergent validity, we examined the correlation between scores on the PARC and measures of child behavioural and emotional problems, perceived parental self-efficacy, parenting effectiveness, and plans to learn new parenting behaviours. To assess discriminant validity, we examined the link between scores on the PARC and a measure of impression management.

We predicted that a four-factor structure would be confirmed. We predicted that scores on the Precontemplation subscale would be correlated inversely with perceptions of child problems and positively with confidence in managing problems. No directional hypotheses were made with respect to parenting or self-efficacy as Precontemplation may include both parents who have no need to change and parents who may be considered by others to need to change, but who do not perceive that need themselves. We predicted that Contemplation scores would be positively correlated with parent ratings of child behavioural and emotional difficulties, laxness, over-reactivity, and hostility and negatively correlated with perceived parental self-efficacy. We predicted that Action and Maintenance scores would be negatively correlated with parent ratings of child behavioural and emotional difficulties, laxness, over-reactivity, and hostility and positively correlated with perceived parental self-efficacy. We also predicted no significant relations among Precontemplation, Contemplation, Action, or Maintenance scores and impression management scores.
Method

Participants. The study's protocol was approved by the authors' institutional research ethics board (see Manuscript Two Appendix C). A community sample including a total of 381 parents with at least one child between the ages of 2 and 12 years was recruited through social media (e.g., through Facebook messages to generic [i.e. not explicitly related to parenting] Facebook groups inviting individuals with a child between 2-12 years old to complete a survey online; \( n = 201 \)), from an arena in Ottawa, Ontario \( (n = 58) \), from public locations (e.g., public parks) in Ottawa, Ontario \( (n = 79) \), from a site offering multiple health and parenting services in Calgary, Alberta \( (n = 15) \), from a child care center in Ottawa, Ontario \( (n = 10) \), and from a child care center in Gatineau, Quebec \( (n = 8) \). These recruitment sources were deemed to be appropriate because none of them were associated with parenting supports, making it more likely that we would obtain a sample that includes adequate representation of parents in each hypothesized stage of change readiness. Ten parents who completed the survey had missing data on the question related to recruitment location. As responses from members of parent dyads (partners) may be nonindependent (Kenny, 1996) only one member from the same parent dyad was recruited. This was ensured through recruitment scripts that screened for parents who had a partner who had already completed the survey.

Of the 381 participants, 260 were mothers (68.2%) and 121 were fathers (31.8%). The majority of participants (58.3%) were between the ages of 30-39, 26.5% were between the ages of 40-49, 11.8% were between the ages of 19-29, and 3.4% were above age 50. In response to an item related to family income, 2.4% of participants reported annual family income between \$0-10,000, 7.1% reported annual family income between \$10,001-30,000, 6.3% reported annual family income between \$30,001-50,000, 10.8% reported annual family income between
between $50,001-70,000, 11.8% reported annual family income between $70,001-90,000, 33.6% reported annual family income between $90,001-150,000, and 26.5% reported annual family income of over $150,000. The sample under-represents families whose income is below the median family income for Canadian families of $78,870 (Statistics Canada, 2016). Data were missing for the annual family income item for 1.6% of participants. Ethnicity data were not collected.

**Validity measures.**

**Child behavioural and emotional difficulties.** The Child Adjustment and Parenting Efficacy Scale (CAPES; Morawska, Sanders, Haslam, Filus, & Fletcher, 2014) is a 30-item scale designed to measure child behavioural and emotional difficulties and yields an overall problem intensity score. Scores on the CAPES were found to have excellent internal consistency in a sample of Australian parents of children aged 2-12 (α = .91). In the current study sample, alpha coefficients were .90 for mothers and .90 for fathers. The CAPES also includes a 20-item self-efficacy scale through which parents report their perceived self-efficacy in dealing with the child problems described in various items. To shorten the questionnaire for respondents in this study, the CAPES self-efficacy items were simplified to a single item addressing overall perceived self-efficacy in dealing with child problems (item wording: “On a scale from 1-10 what is your overall level of confidence to deal with your child’s behavioural or emotional problems?”).

**Use of effective parenting behaviours.** The Parenting Scale (PS; Arnold, O'Leary, Wolff, & Acker, 1993) contains 30 items assessing parenting behaviours and yields scores on three subscales: Lax, Overreactive, and Hostile. Scores on all three subscales showed excellent internal consistency in a sample of American couples with children aged 3-7 years: Lax yielded α = .85 for mothers and .82 for fathers; Overreactive yielded α = .80 for mothers and .80 for
fathers; Hostile yielded $\alpha = .78$ for mothers and .83 for fathers (Rhoades & O’Leary, 2007). In the current sample, $\alpha$ coefficients were, for Lax, .85 for mothers and .82 for fathers; for Overreactive, .70 for mothers and .72 for fathers; for Hostile, .62 for mothers and .73 for fathers.

**Impression management.** The Marlowe–Crowne Social Desirability Scale (MCSDS; Crowne & Marlowe, 1960) consists of 33 true-or-false items that assess the extent to which participants’ responses are characterized by social desirability (Crowne & Marlowe, 1960). As part of its development, scores on the measure were found to have adequate internal consistency ($\alpha = .78$) in a sample of American adults. This instrument is the most widely used measure of social desirability bias (Beretvas, Meyers, & Leite, 2002). In this sample, $\alpha$ coefficients were .71 for mothers and .81 for fathers.

**Readiness to change parenting behaviours.** A 4-item staging algorithm was developed for this study and included in the study battery. Each of the algorithm’s items represented an item from one of the four stages: Precontemplation (“I don’t think that I will try to improve my parenting in the next 6 months”), Contemplation (“I want to learn new ways of parenting in the next 6 months”), Action (“I am learning new ways of parenting and want to keep learning about parenting”), or Maintenance (“In the past 6 months I have started to use new ways of parenting”). Response options for each item were “Yes” and “No” (where Yes represented a score of one and where No represented a score of zero). The algorithm was created for convergent validity testing based on the notion that PARC sub-scale scores should converge in a manner consistent with the straightforward statements captured in its items. The algorithm was scored by summing scores of Contemplation, Action, and Maintenance, and from that sum subtracting the score for the Precontemplation item.
There were two versions of the Study 3 battery. One version included the PS, but not the MCSDS (the online version). The other version included the MCSDS, but not the PS (the pen-and-paper version). This limited the number of items that any single participant was asked to complete while maintaining adequate sample sizes for all of the planned analyses. The online battery was completed by 261 parents (70.1%) and the pen-and-paper battery was completed by 114 parents (29.9%). An independent samples t-test comparing PARC responses collected online to those collected in pen-and-paper format yielded no significant difference between the scores for online ($M = 7.70, SD = 2.29$) and pen-and-paper ($M = 7.40, SD = 2.04$) conditions; $t(379) = 1.70, p = 0.24$. There was also no significant differences on CAPES parental self-efficacy scores for the online ($M = 7.74, SD = 1.65$) and pen-and-paper ($M = 7.67, SD = 2.04$) conditions; $t(347) = 0.31, p = 0.76$. However, there was a significant difference on CAPES child behavioural and emotional intensity scores for the online ($M = 24.52, SD = 9.97$) and pen-and-paper ($M = 22.05, SD = 11.21$) conditions; $t(347) = 2.07, p = 0.04$. As there were no differences except for CAPES scores, responses completed using both modalities were included together in analyses.

**Results**

**Data cleaning.** Data were cleaned according to the guidelines presented by Tabachnick and Fidell (2016). Data were deleted listwise for any respondent who had 4 or more missing items on the PARC (Bennett, 2001). This resulted in the deletion of all data from 22 participants. For other measures, any respondent who had more than 10% missing data on a measure had their responses deleted for that measure (responses on other completed measures were kept). This resulted in the deletion of CAPES responses for 13 participants, the deletion of PS responses for 14 participants, and the deletion of MCSDS responses for one participant. Screening for impossible values did not identify any such values. Following this initial review of the data, there
reliability remained a total of 0.003% missing data on the PARC, CAPES, PS, and the MCSDS. These remaining missing values were imputed through expectation maximization. Analysis of pairwise plots did not reveal any issues of nonlinearity or heteroscedasticity. Scaled scores for which skewness/standard error values were greater than ±3.29 were addressed through Winsorizing, which limits extreme values in a set of data (Kim, 2013). These included Precontemplation (prior to Winsorizing skewness = 0.53; SE = 0.13), Contemplation (prior to Winsorizing skewness = -0.94; SE = 0.13), Action (prior to Winsorizing skewness = -0.96; SE = 0.13), and CAPES (prior to Winsorizing skewness = 0.72; SE = 0.13).

**Factor structure.**

*Four-factor model.* A confirmatory factor analysis (CFA), using *AMOS 23.0* (IBM SPSS, 2014) was conducted to determine whether the PARC maps onto the four-factor solution of the URICA. Schweizer’s (2010) guidelines for assessing and reporting model fit were followed. Accordingly, we assessed goodness of fit against criterion values in the range of comparative fit index (CFI) > .90-.95 (where values above .95 indicate good fit and values between .90 and .95 indicate acceptable fit), root mean square error of approximation (RMSEA) < .05-08 (where values below .05 indicate good fit and values between .05-08 indicate acceptable fit), standardized root mean square residual (SRMR) > .10, and $\chi^2$/df < 3 (where values below 2 indicate good fit and values between 2-3 indicate acceptable fit).

The model (Model 1) was estimated using maximum likelihood estimation with the 32 items as indicators of the four factors. This CFA yielded fit indices of: RMSEA = .09, SRMR = .10, CFI = .79, and with $\chi^2$/df = 1.60, suggesting an inadequate fit. Item analysis was conducted to delete poorly performing items and optimize survey length. Following the procedure implemented by Levesque, Gelles, and Velicer (2000), the five items with the highest factor
loadings for each factor were retained (Manuscript One Appendix B presents items, indicates their source, and whether or not they were retained). This also ensured that an equal number of items represented each subscale, a relevant consideration in reducing implicit weighting (Streiner et al., 2015). A second CFA was conducted on this 20-item, 4-factor model (Model 2). Model 2 yielded fit indices of: RMSEA = .08, SRMR = .07, CFI = .89, and χ²/df = 3.43, suggesting an improved fit.

A review of modification indices revealed that the model fit could be improved by allowing the correlation of certain error terms (Kline, 2011). The underlying assumption in a CFA is that error terms in a given model are uncorrelated. There are instances, however, when it is theoretically sound to assume that error terms for some items in a model be correlated and, in response, to allow for the correlation of those error terms. Therefore, items for which error terms were allowed to correlate were items that were similarly worded or referenced related concepts. Specifically, items PC3 and PC7 refer to changing parenting behaviours as being a “waste” of time. Items PC6 and PC7 make reference to reasons for not changing parenting behaviours. Items A1 and A4 refer to “working” on parenting. Items A1 and A7 refer to “new ways to parent.”

After making these specifications, a CFA was conducted on this model (Model 3). This CFA yielded fit indices of: RMSEA = .07, SRMR = .06, CFI = .92, and χ²/df = 2.91, suggesting an acceptable fit. Table 1 presents goodness of fit statistics for the CFAs. Further modifications to the model could lead to minor improvements in model fit but these were not made as there was no clear theoretical rationale for doing so. The correlations between the factors were as follows: Precontemplation and Contemplation = -.85; Precontemplation and Action = -.72; Precontemplation and Maintenance = -.57; Contemplation and Action = .94; Contemplation and
Maintenance = .90; Action and Maintenance = .86. These analyses support the hypothesized four-factor model underlying the PARC.

**Three-factor model.** After confirming the hypothesized four-factor model by CFA, we also assessed alternate models. Following Wade and Andrade (2015) we examined a three-factor model (Model 4) using maximum likelihood estimation with the 24 items (the 8 original Precontemplation, Contemplation, and Action items) as indicators of the three factors. This CFA yielded fit indices of: RMSEA = .09, SRMR = .07, CFI = .82, and $\chi^2$/df = 3.79, suggesting an inadequate fit.

Item analysis was conducted to delete poorly performing items and optimize survey length. As in the four-factor model analyses, the five items with the highest factor loadings for each factor were retained. In this model (Model 5), the 5-highest loading items for Precontemplation, Contemplation, and Action were the same 5-highest loading items for those factors in the 4-factor, 20-item PARC. One exception was that A2 and A8 were tied as the 5th and 6th highest loading items. Item A8 was dropped because it was not a URICA-derived item. A CFA was conducted with the 15 items as indicators on the three factors. This CFA yielded fit indices of: RMSEA = .10, SRMR = .07, CFI = .87, and $\chi^2$/df = 4.70, suggesting an inadequate fit.

A review of modification indices suggested that theoretically sound modifications to the model could be made by correlating error terms for similarly worded items. Therefore, the error terms were correlated for the following items: A1 and A7; A1 and A4; PC3 and PC7 and PC6 and PC7. A CFA (Model 6) was conducted and yielded fit indices of: RMSEA = .08, SRMR = .06, CFI = .91, and $\chi^2$/df = 3.67, suggesting an improved but inadequate fit.

**One-factor model.** The possibility that a single factor model in which the 32 items represent a theoretical continuum of Readiness (with Precontemplation items reverse scored) was
assessed. The model (Model 7) was estimated using maximum likelihood estimation with the 32 items as indicators of the single factor. This CFA yielded fit indices of: RMSEA = .10, SRMR = .09, CFI = .71, and $\chi^2$/df = 4.60, suggesting an inadequate fit.

Item analysis was conducted to delete poorly performing items and optimize survey length. To replicate the number of items retained in previous models, the 20 items with the highest factor loadings were retained. A CFA on this model (Model 8) yielded fit indices of: RMSEA = .10, SRMR = .09, CFI = .75, and $\chi^2$/df = 4.65, suggesting an inadequate fit.

A review of modification indices suggested that theoretically sound modifications to the model could be made by correlating error terms for similarly worded items. Therefore, the error terms were correlated for the following items: A1 and A7; A1 and A6; A6 and A7; PC3 and PC2; and M1 and M3. A CFA (Model 9) was conducted and yielded fit indices of: RMSEA = .09, SRMR = .09, CFI = .81, and $\chi^2$/df = 3.83, suggesting an inadequate fit.

**Additional alternate models.** Conducting further analyses by splitting the sample randomly and by splitting the sample into mothers and fathers was considered. However, these analyses were not performed due to insufficient sample size for split samples or for a sub-sample of fathers. Because there was no clear theoretical rationale or precedent for exploring a two-factor model it was not assessed. Such a theoretical rationale or precedent is a prerequisite for a CFA (Kline, 2011).

**Internal consistency.** A reliability analysis was undertaken following the CFA to establish internal consistency of scores on each subscale of the 20-item PARC (5 items per subscale). Subscale $\alpha$ values were as follows for mothers: Precontemplation = .71, Contemplation = .80, Action = .77, and Maintenance = .85. Subscale $\alpha$ values were as follows for fathers: Precontemplation = .78, Contemplation = .87, Action = .77, and Maintenance = .90.
**Convergent validity.** Correlations between scores on the PARC and related constructs were calculated to assess convergent validity. Correlations between the PARC scales and ancillary measures are shown in Table 2. There was a significant inverse relationship between Precontemplation scores and scores on the CAPES. Each of Contemplation, Action, and Maintenance scores demonstrated a significant positive relationship with scores on the CAPES. Although the positive relationship with CAPES and Contemplation scores was expected, the positive relationships between CAPES scores and Action and Maintenance scores were unexpected.

There was a significant positive relationship between Precontemplation scores and perceived parental self-efficacy. There was an expected significant inverse relationship between perceived parental self-efficacy and Contemplation. A similar significant inverse relationship between perceived parental self-efficacy and both Action and Maintenance scores was identified, however this was unexpected.

The correlations with scores on the PS are more difficult to interpret. There was a significant positive relationship between Precontemplation and hostility, an unexpected significant positive relationship between Maintenance and laxness, and unexpected significant positive relationships between both Action and Maintenance and over-reactivity.

The relationships between scores on the 4-item staging algorithm created for this study and PARC subscale scores were in the expected directions. Precontemplation scores were inversely correlated with scores on the staging algorithm. Scores on Contemplation, Action, and Maintenance subscales were positively correlated with scores on the staging algorithm.

In addition, associations between staging algorithm scores and other convergent validity indices were examined. There was a significant positive association between staging algorithm
scores and the CAPES, ($r(347) = .21, p = .012$) indicating that higher levels of reported child emotional and behavioural problems were associated with higher levels of readiness to change parenting behaviours. The relations between staging algorithm scores and parents’ perceived parental self-efficacy, ($r(347) = -.10, p = .058$), laxness, ($r(223) = .04, p = .556$), over-reactivity, ($r(223) = .063, p = .346$), and hostility ($r(223) = -.04, p = .552$) were not significant.

**Discriminant validity.** Correlations between scores on the PARC and the MCSDS were calculated to assess discriminant validity. As expected, there was a nonsignificant relationship between Precontemplation and Action scores and MCSDS scores. There was an unexpected inverse relation between Contemplation and Maintenance scores and MCSDS.

**Discussion**

In a large community sample of Canadian parents, the hypothesized four-factor solution of the PARC was confirmed with a CFA, which represents the first validation of the 4-factor Precontemplation-Contemplation-Action-Maintenance solution with regards to parenting behaviours with a community sample. Alternate three-factor and one-factor models were not supported. Scores on each of the PARC’s subscales demonstrated acceptable internal consistency for both mothers and fathers. Overall, PARC scores correlated significantly with measures of child behavioural and emotional intensity, perceived parental self-efficacy, laxness, over-reactivity, and hostility in parenting, a readiness algorithm, and impression management. However, some of the correlations between ancillary measures and PARC subscale scores were not in the expected directions.

**General Discussion**

Our findings add to a growing body of evidence supporting the applicability of change readiness to parenting behaviours. A series of studies provide preliminary evidence for the
validity of the PARC, a measure of parents’ readiness to change parenting behaviours. Expert consultation established the content validity of the item pool. Reading level testing established acceptable scale readability and pilot testing established acceptable scale clarity. A study with a community sample provided evidence of factor structure, internal consistency, convergent validity, and discriminant validity for the 20-item PARC and its hypothesized four-factor Precontemplation-Contemplation-Action-Maintenance solution was confirmed. Support for each of these four factors is important in terms of assessing the applicability of the SOC construct to parenting in the broader context of understanding the applicability of readiness to change to parenting. The evidence in support of the Maintenance factor is noteworthy as previous URICA adaptations (e.g., Brestan et al., 1999; Littell & Girvin, 2005; Wade & Andrade, 2015) have not included the Maintenance factor.

As predicted, high Precontemplation scores were associated with lower levels of parent-reported child behavioural and emotional difficulties and higher perceived self-efficacy in managing those difficulties when they occur. Parents who thought their children had few problems and who felt confident in their ability to manage problems did not see a need to change the way they parent.

Contrary to predictions, higher scores on Contemplation, Action, and Maintenance were associated with higher levels of parent-reported child emotional and behavioural difficulties and lower perceived self-efficacy in managing those difficulties. This suggests that a perception of child behavioural and emotional difficulties may be an important precursor of readiness to change parenting behaviours. Parents who perceived their child to engage in more problematic behaviours and emotions endorsed higher levels of readiness to change than did those who did not perceive these problems. The pattern of results with respect to self-reported parenting
behaviours are more difficult to interpret. It is possible that parents who have begun to change their parenting behaviours may evaluate their own parenting behaviours more critically than they would have prior to making changes, but this hypothesis requires empirical testing.

The significant positive association between staging algorithm scores and parent-reported child behavioural and emotional difficulties is consistent with the finding that Contemplation, Action, and Maintenance were associated with higher levels of parent-reported child emotional and behavioural difficulties. Associations between staging algorithm scores and other measures of convergent validity were nonsignificant. These findings indicate that there is more and clearer convergent validity evidence for the PARC than there is for the staging algorithm we tested. The significant correlations between the PARC and convergent validity indices we examined suggest that inferences may be made about related constructs based on PARC scores but that such inferences would generally not be appropriate based on staging algorithm scores. For these reasons, until further research is conducted on the staging algorithm it appears reasonable to assert that the PARC has greater explanatory value than the algorithm.

Taken together, the data suggest that the PARC merits further evaluation and use. Important next steps are to address test-retest reliability, predictive validity, and clinical utility. If future research further establishes the psychometric properties of the PARC, it could be a useful outcome measure in studies that measure the impact of population-level parenting supports delivered through a public health approach. For example, parents’ PARC scores could be assessed before and after being exposed to parenting information as part of a population-level public education campaign. Ideally, such a study would also examine the likelihood that parents
further seek parenting support or whether they apply newly-learned parenting strategies in their lives.

The PARC’s reliability, clarity, and validity in diverse cultural and social groups should be further examined. Related, it will be important to determine the applicability of the PARC to families with below-median incomes. It may be useful for future research to examine the PARC in clinical samples (e.g., parents whose children have diagnosed behaviour disorders or parents who have been identified as requiring intervention for problematic parenting behaviours, such as abuse) as well as in samples of parents who have enrolled in parenting supports voluntarily.

Efforts should also be made to examine and potentially reconcile our findings with those of Wade and Andrade (2015) who found support for a three-factor Precontemplation-Contemplation-Action solution of the PRFCS (as well as for a second-order factor reflecting overall Readiness) in a clinical sample of parents. A key task for researchers could be to understand whether the presence of the Maintenance factor as found in our community sample also applies to clinical samples such as that of Wade and Andrade (2015). Similarly, the near-adequate fit of the three-factor model assessed in Study 3 should not be overlooked. Our study suggests that the four-factor Precontemplation-Contemplation-Action-Maintenance structure may apply to readiness to change among community parents. However, future studies will be necessary to replicate the Precontemplation-Contemplation-Action-Maintenance structure and to understand any incremental psychometric value associated with Maintenance construct.

Future efforts to examine the PARC’s factor structure should take into account the results of the CFA described in Study 3. Although there is no universal consensus on goodness-of-fit statistic cut-offs in the context of a CFA, the PARC’s goodness-of-fit statistics generally fall in the acceptable range as opposed to the good range.
Keeping these limitations in mind, the PARC may warrant further examination as a tool to be used in the evaluation of emerging population-level parenting supports. In the relative absence of means of evaluating the impact of these supports, measuring changes in parents’ readiness to change their parenting behaviours may prove useful.
References


assessments that work. New York: Oxford University Press.


Table 1

*Results of Confirmatory Factor Analyses*

<table>
<thead>
<tr>
<th>Model</th>
<th>Number of items and factors</th>
<th>$\chi^2$/df</th>
<th>CFI</th>
<th>RMSEA</th>
<th>RMSEA 90% CI</th>
<th>SRMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4 factors; 32 items</td>
<td>1.60</td>
<td>.79</td>
<td>.09</td>
<td>[.081, .090]</td>
<td>.10</td>
</tr>
<tr>
<td>2</td>
<td>4 factors; 20 items</td>
<td>3.43</td>
<td>.89</td>
<td>.08</td>
<td>[.073, .087]</td>
<td>.07</td>
</tr>
<tr>
<td>3</td>
<td>4 factors; 20 items</td>
<td>2.91</td>
<td>.92</td>
<td>.07</td>
<td>[.062, .077]</td>
<td>.06</td>
</tr>
<tr>
<td>4</td>
<td>3 factors; 24 items</td>
<td>3.79</td>
<td>.82</td>
<td>.09</td>
<td>[.064, .077]</td>
<td>.07</td>
</tr>
<tr>
<td>5</td>
<td>3 factors; 15 items</td>
<td>4.70</td>
<td>.87</td>
<td>.10</td>
<td>[.088, .108]</td>
<td>.07</td>
</tr>
<tr>
<td>6</td>
<td>3 factors; 15 items</td>
<td>3.67</td>
<td>.91</td>
<td>.08</td>
<td>[.071, .092]</td>
<td>.06</td>
</tr>
<tr>
<td>7</td>
<td>1 factor; 32 items</td>
<td>4.60</td>
<td>.71</td>
<td>.10</td>
<td>[.092, .101]</td>
<td>.10</td>
</tr>
</tbody>
</table>

*Note.* CFI = comparative fit index; RMSEA = root-mean-square error of approximation; CI = confidence interval; SRMR = standardized root-mean-square residual.
Table 2

*Convergent and Discriminant Validity*

<table>
<thead>
<tr>
<th>Construct</th>
<th>PC</th>
<th>C</th>
<th>A</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Convergent validity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child behavioural and emotional intensity (N = 349)</td>
<td>-.23**</td>
<td>.45**</td>
<td>.30**</td>
<td>.47**</td>
</tr>
<tr>
<td>Perceived self-efficacy (N = 349)</td>
<td>.19**</td>
<td>-.39**</td>
<td>-.26**</td>
<td>-.41**</td>
</tr>
<tr>
<td>Lax parenting (N = 225)</td>
<td>.02</td>
<td>.16*</td>
<td>.10</td>
<td>.22**</td>
</tr>
<tr>
<td>Overreactive parenting (N = 225)</td>
<td>-.07</td>
<td>.29**</td>
<td>.21**</td>
<td>.35**</td>
</tr>
<tr>
<td>Hostile parenting (N = 225)</td>
<td>.24**</td>
<td>.02</td>
<td>-.03</td>
<td>.05</td>
</tr>
<tr>
<td>Readiness algorithm (N = 366)</td>
<td>-.42**</td>
<td>.47**</td>
<td>.56**</td>
<td>.37**</td>
</tr>
<tr>
<td><strong>Discriminant validity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impression management (N = 155)</td>
<td>.024</td>
<td>-.17*</td>
<td>-.03</td>
<td>-.17*</td>
</tr>
</tbody>
</table>

*Note.* PC = Precontemplation; C = Contemplation; A = Action; M = Maintenance.

*p < .05. **p < .01.*
Ethics Approval Certificate for Study One

Université d’Ottawa
Office of Research Ethics and Integrity

Ethics Approval Notice
Social Science and Humanities REB

Principal Investigator / Supervisor / Co-investigator(s) / Student(s)

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Affiliation</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catherine M.</td>
<td>Lee</td>
<td>Social Sciences / Psychology</td>
<td>Supervisor</td>
</tr>
<tr>
<td>Jeffrey</td>
<td>Perron</td>
<td>Social Sciences / Psychology</td>
<td>Student Researcher</td>
</tr>
</tbody>
</table>

File Number: 02-13-33

Type of Project: Independent Student Project

Title: Expert Consultation for a New Measure Assessing Readiness to Change Parenting Behaviours

Approval Date (mm/dd/yyyy)  03/20/2013
Expiry Date (mm/dd/yyyy)   03/19/2014
Approval Type              la

(1a: Approval, 1b: Approval for initial stage only)

Special Conditions / Comments:
N/A

550, rue Cumberland, pièce 154  550 Cumberland Street, room 154
Ottawa (Ontario) K1N 6N5 Canada  Ottawa, Ontario K1N 6N5 Canada
(613) 562-5387  Télé.; (613) 562-5338
http://www.recherche.uottawa.ca/deontologie/index.html
Ethics Approval Certificate for Study Two

Université d’Ottawa

Bureau d’éthique et d’intégrité de la recherche

University of Ottawa

Office of Research Ethics and Integrity

Health Sciences and Science REB

Principal Investigator / Supervisor / Co-investigator(s) / Student(s)

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Affiliation</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catherine M.</td>
<td>Lee</td>
<td>Social Sciences / Psychology</td>
<td>Supervisor</td>
</tr>
<tr>
<td>Jeffrey</td>
<td>Perron</td>
<td>Social Sciences / Psychology</td>
<td>Student Researcher</td>
</tr>
</tbody>
</table>

File Number: H10-13-08

Type of Project: Independent Student Project

Title: Assessing the comprehensibility of a new measure, the assessment of readiness to change Parenting Behaviours (ARC-PB)

Approval Date (mm/dd/yyyy): 11/13/2013

Expiry Date (mm/dd/yyyy): 11/12/2014

Approval Type: la

Special Conditions / Comments:
N/A
Manuscript One Appendix C

Ethics Approval Certificate for Study Three

File Number: H03-16-06

Université d’Ottawa  University of Ottawa
Bureau d’éthique et d’intégrité de la recherche  Office of Research Ethics and Integrity

Ethics Approval Notice

Health Sciences and Science REB

Principal Investigator / Supervisor / Co-investigator(s) / Student(s)

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Affiliation</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catherine M.</td>
<td>Lee</td>
<td>Social Sciences / Psychology</td>
<td>Supervisor</td>
</tr>
<tr>
<td>Jeffrey</td>
<td>Perron</td>
<td>Social Sciences / Psychology</td>
<td>Student Researcher</td>
</tr>
</tbody>
</table>

File Number: H03-16-06

Type of Project: PhD Thesis

Title: Psychometric testing for a new measure, the Parent Assessment of Readiness to Change (PARC)

Approval Date (mm/dd/yyyy): 04/15/2016

Expiry Date (mm/dd/yyyy): 04/14/2017

Approval Type: Approved

Special Conditions / Comments:
N/A
### PARC Items From 32- and 20-item Versions

<table>
<thead>
<tr>
<th>Item Label</th>
<th>Item wording</th>
<th>Source</th>
<th>Included in 20-item PARC?</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC1</td>
<td>As far as I’m concerned, I don’t need to change the way I parent.</td>
<td>URICA</td>
<td>Yes</td>
</tr>
<tr>
<td>PC2</td>
<td>I don’t need an expert telling me how to parent my children.</td>
<td>New</td>
<td>Yes</td>
</tr>
<tr>
<td>PC3</td>
<td>Trying to change the way I parent is pretty much a waste of time for me because it won’t change my child’s...</td>
<td>URICA</td>
<td>Yes</td>
</tr>
<tr>
<td>PC4</td>
<td>I guess I have challenges as a parent, but there’s nothing that I really need to change.</td>
<td>URICA</td>
<td>No</td>
</tr>
<tr>
<td>PC5</td>
<td>I have worries about the way I parent but so does every parent. Why spend time thinking about it?</td>
<td>URICA</td>
<td>No</td>
</tr>
<tr>
<td>PC6</td>
<td>I would rather accept that my child is not perfect than change the way I parent.</td>
<td>URICA</td>
<td>Yes</td>
</tr>
<tr>
<td>PC7</td>
<td>It would be a waste of time to try to learn about better ways to parent.</td>
<td>New</td>
<td>Yes</td>
</tr>
<tr>
<td>PC8</td>
<td>Parenting programs are only useful for people who are having major problems with parenting, not me.</td>
<td>New</td>
<td>No</td>
</tr>
<tr>
<td>C1</td>
<td>I think I might be ready to find ways to improve my parenting.</td>
<td>URICA</td>
<td>No</td>
</tr>
<tr>
<td>C2</td>
<td>I’m hoping I can get help to be a better parent.</td>
<td>URICA</td>
<td>Yes</td>
</tr>
<tr>
<td>C3</td>
<td>I’ve been thinking about changing the way I parent.</td>
<td>URICA</td>
<td>Yes</td>
</tr>
<tr>
<td>C4</td>
<td>I wish I had more ideas on how to be a better parent.</td>
<td>URICA</td>
<td>No</td>
</tr>
<tr>
<td>C5</td>
<td>Maybe I can learn to be a better parent.</td>
<td>URICA</td>
<td>Yes</td>
</tr>
<tr>
<td>C6</td>
<td>I have parenting challenges and I really think I should work on them.</td>
<td>URICA</td>
<td>Yes</td>
</tr>
<tr>
<td>C7</td>
<td>I think some advice on parenting would be helpful.</td>
<td>New</td>
<td>No</td>
</tr>
<tr>
<td>C8</td>
<td>I’d like to change some things about the way I parent.</td>
<td>URICA</td>
<td>Yes</td>
</tr>
<tr>
<td>A1</td>
<td>I am working hard to learn new ways to parent.</td>
<td>URICA</td>
<td>Yes</td>
</tr>
<tr>
<td>A2</td>
<td>I am finally working on the way I parent.</td>
<td>URICA</td>
<td>Yes</td>
</tr>
<tr>
<td>A3</td>
<td>At times, it is difficult to be a good parent but I’m working on it.</td>
<td>URICA</td>
<td>No</td>
</tr>
<tr>
<td>A4</td>
<td>Even though I’m not always successful in changing the way I parent, I am at least working on it.</td>
<td>URICA</td>
<td>Yes</td>
</tr>
<tr>
<td>A5</td>
<td>I have started working on the way I parent but I could use some help.</td>
<td>URICA</td>
<td>Yes</td>
</tr>
<tr>
<td>A6</td>
<td>I am actively working to become a better parent.</td>
<td>URICA</td>
<td>No</td>
</tr>
<tr>
<td>A7</td>
<td>I am trying out new ways to parent.</td>
<td>New</td>
<td>Yes</td>
</tr>
<tr>
<td>A8</td>
<td>I’ve been making an effort to learn things that will help me be the best parent I can be.</td>
<td>New</td>
<td>No</td>
</tr>
<tr>
<td>M1</td>
<td>I have worked hard to be a better parent to help my child, but every now and then, I slip into old habits so I need help to stay on track.</td>
<td>URICA</td>
<td>No</td>
</tr>
<tr>
<td>M2</td>
<td>I’m not following through with the way I parent as well as I had hoped, and I want to make sure I don’t slip back into old habits.</td>
<td>URICA</td>
<td>Yes</td>
</tr>
<tr>
<td>M3</td>
<td>I thought once I had learned to parent in a positive way, the problems would be solved, but sometimes I still find myself slipping back into old habits.</td>
<td>URICA</td>
<td>Yes</td>
</tr>
<tr>
<td>M4</td>
<td>I may need a boost right now to help me maintain the changes I’ve already made in the way I parent my child.</td>
<td>URICA</td>
<td>Yes</td>
</tr>
<tr>
<td>M5</td>
<td>I need to prevent myself from slipping back into my old ways of parenting.</td>
<td>URICA</td>
<td>Yes</td>
</tr>
<tr>
<td>M6</td>
<td>Sometimes I feel like I might be slipping back into my old ways of parenting.</td>
<td>New</td>
<td>Yes</td>
</tr>
<tr>
<td>M7</td>
<td>I try to find ways to use the parenting tips I’ve learned in new situations with my children.</td>
<td>New</td>
<td>Yes</td>
</tr>
<tr>
<td>M8</td>
<td>I’ve learned a lot about becoming a better parent and I want to keep learning more.</td>
<td>New</td>
<td>No</td>
</tr>
</tbody>
</table>

*Note. PARC = Parent Assessment of Readiness to Change; URICA = University of Rhode Island Change Assessment Scale; PC = Precontemplation; C = Contemplation; A = Action; M = Maintenance.*
Manuscript Two

Factor Analytic Replication and Norms of the Parent Assessment of Readiness to Change Scale

Jeffrey Perron  Catherine M. Lee

University of Ottawa

Compliance with Ethical Standards

All procedures performed in studies involving human participants were in compliance with Canadian Psychological Association and American Psychological Association ethical standards and both authors declare that they have no conflict of interest.

Correspondence to:
J. L. Perron
University of Ottawa
Clinical Psychology Program
136 Jean Jacques Lussier, Vanier Hall
Ottawa, Ontario, Canada
K1N 6N5
Abstract

The Parent Assessment of Readiness to Change Scale (PARC) is a 20-item measure adapted from the University of Rhode Island Change Assessment Scale (URICA). Previous research on the PARC revealed a four-factor Precontemplation-Contemplation-Action-Maintenance structure and evidence of internal consistency, convergent validity, and discriminant validity. In this study, we attempted to replicate the Precontemplation-Contemplation-Action-Maintenance structure in a new sample. We used confirmatory factor analyses with data from a sample of 384 Canadian parents of 2-to-12-year-old children. Our analyses replicated the original four-factor structure. We also further assessed the PARC’s factor structure by conducting analyses with a combined sample that included data from this study and a previous study (combined N = 765). Additional confirmatory factor analyses demonstrated that the four-factor structure was consistent across parent gender and child age categories. In this sample, internal consistency was adequate, good, or excellent for scores on all subscales for both mothers and fathers. Correlations with a staging algorithm and PARC subscale scores were significant and in the expected directions and magnitudes. Mothers rated themselves as more ready to change parenting behaviours than did fathers. Replication of the PARC’s factor structure in new samples and across parent gender and child age categories provides support for its potential utility as a measure of parents’ readiness to change parenting behaviours.

Keywords: parenting, readiness to change, stages of change, transtheoretical model, confirmatory factor analysis
**Introduction**

Parenting supports based on social learning principles produce positive changes in parenting that enhance the social and emotional development of children (Sanders, 2012; World Health Organization, 2009). Efforts now focus on identifying ways to extend their reach (e.g., Enebrink, Danneman, Mattsson, Ulfsdotter, Jalling, & Lindberg, 2015; Fives, Purcell, Heary, Nic, Gabhainn, & Canavan, 2014). This has included the adoption of a public health approach in which support is offered to all parents, not only those experiencing clinical-level difficulties (Doyle, Hegerty & Owens, 2018; Sanders, 2012). Interventions delivered through a public health approach may include media campaigns, talks, discussion groups, and brief consultations designed to prevent parenting-related child developmental behavioural and emotional difficulties (e.g., Enebrink et al., 2015; Sanders, 2012). Research studying their implementation is ongoing (e.g., Charest, Gagné, & Goulet, 2017; Delawarde-Saïas, Gagné, Brunson, & Drapeau, 2018).

A challenge associated with the evaluation of parenting supports offered at a population level is the selection of a suitable measure of their outcomes (Enebrink et al., 2015). For example, media campaigns designed to normalize parenting challenges and destigmatize help-seeking may not result in changes in problematic parent or child behaviour but may influence the extent to which parents are ready to change their parenting. Several researchers have studied parents’ readiness to change in recent years (e.g., Jones, Putt, Rabinovitch, & Hubbard, 2017; Niec, Barnett, Gering, Triemstra, & Solomon, 2015; Nock & Photos, 2006; Proctor, Brestan-Knight, Fan, & Zlomke, 2018; Wade & Andrade, 2015). Most recently, the relevance of readiness to engage in parenting-related behaviour change has been studied in relation to community parent populations (Perron & Lee, 2018; Proctor et al., 2018).
Readiness involves a willingness to seek support or to modify a behaviour that is not helpful (DiClemente, Schlundt, & Gemmell, 2004). Effective parenting requires continuous adaptation as both the child and parent change and mature (Baker, in press; Grusec, 2011; Sanders & Mazzucchelli, 2018). Since it was proposed 35 years ago, the construct of readiness to change has been shown to play a key role in engaging in health-related behaviour change (Norcross, Krebs, & Prochaska, 2011). The most prominent model of readiness to change health-related behaviour is the Transtheoretical Model of Change (TTM; DiClemente & Prochaska, 1983), which identifies the Stages of Change (SOC) that individuals are hypothesized to move through as part of the process of behaviour change.

There have been attempts to apply the TTM to parenting behaviours (Littell & Girvin, 2005; Wade & Andrade, 2015). Efforts to assess the applicability of the SOC to parenting behaviours have suggested that the Precontemplation, Contemplation, and Action stages may not apply to changing parenting behaviours for parents who are receiving remedial services related to child abuse (Littell & Girvin, 2005) but may apply to parents whose children are receiving services to address clinical-level behaviour difficulties (Wade & Andrade, 2015).

The Parent Assessment of Readiness to Change (PARC; Perron & Lee, 2018) is a 20-item measure designed to assess parents’ readiness to change parenting behaviours. Derived from a common TTM-based measure of change readiness, the University of Rhode Island Change Assessment (URICA; McConnaughy, DiClemente, Prochaska, & Velicer, 1989), the PARC assesses the four stages of Precontemplation, Contemplation, Action, and Maintenance in relation to parenting behaviours. Following best practice guidelines in scale construction (Streiner, Norman, & Cairney, 2008) an item pool was generated, expert consultation was conducted, instructions and items were piloted, and psychometric properties – including initial
evidence of internal consistency, convergent validity, discriminant validity, and factor structure – were assessed (Perron & Lee, 2018).

Confirmatory factor analysis (CFA) in a community sample of Canadian parents \((N = 381)\) supported the hypothesized four-factor Precontemplation-Contemplation-Action-Maintenance structure for the PARC. Scores on each of the PARC’s subscales demonstrated adequate or better internal consistency for both mothers and fathers. The majority of PARC scores correlated significantly and in the expected directions with measures of child behavioural and emotional intensity, perceived parental self-efficacy, parental laxness, parental over-reactivity, hostility in parenting, impression management, and a readiness algorithm.

In the first application of the full four-factor SOC model to parenting behaviours, Perron and Lee (2018) reported goodness-of-fit indices in the adequate range. Although their results are encouraging, it is important to further assess the factor structure of the PARC in a new sample. The present manuscript is divided into two parts. In Study 1 we describe an attempt to replicate the initial CFA of the PARC conducted by Perron and Lee (2018) in a new community sample of 384 Canadian parents. In Study 2 we further examined the consistency of the PARC’s factor structure across parent gender and child age categories. These categories were selected as previous research has identified important differences in the way mothers and fathers – respectively – parent and that the tasks of parenting differ between preschool years and school age years (Russell et al., 1998). We hypothesized that the Precontemplation-Contemplation-Action-Maintenance structure for the PARC would be consistent across these categories. In Study 2 we also provide normative data for the PARC based on a composite community sample \((N = 765)\) that includes the sample described in Study 1 \((n = 384)\) and the sample previously reported by Perron and Lee (2018).
Study 1

The purpose of this study is to replicate the CFA results for the PARC reported by Perron and Lee (2018) in a separate community sample of Canadian parents. Our analyses address model consistency. We also further assessed convergent validity of the PARC by assessing the differences in PARC subscale scores based on responses to a staging algorithm created by Perron and Lee (2018). The staging algorithm is a 4-item questionnaire with each item representing one of the 4 SOC. We hypothesized that PARC subscale scores would differ significantly based on readiness algorithm group.

Method

Participants and procedure. The study's protocol was approved by the authors' institutional research ethics board (see Manuscript Two Appendix A). A community sample of 384 Canadian parents with at least one child between the ages of 2 and 12 years was recruited through social media (e.g., through Facebook messages to generic [i.e. not explicitly related to parenting] Facebook groups located in Canada inviting individuals with a child between 2-12 years old to complete a survey online).

Of the 384 participants, 224 were mothers (58.3%), 159 were fathers (41.4%), and 1 (0.3%) did not identify a gender. The majority of participants (61.8%) were between the ages of 30-39, 25.3% were between the ages of 40-49, 9.1% were between the ages of 19-29, and 2.8% were above age 50. As responses from members of parent dyads (partners) may be nonindependent (Kenny, 1996) only one member from the same parent dyad was recruited. This was ensured through recruitment scripts that screened for parents who had a partner who had already completed the survey.
In response to an item related to family income, 0.3% of participants reported annual family income between $0-10,000CDN, 4.7% reported annual family income between $10,001-30,000CDN, 9.2% reported annual family income between $30,001-50,000CDN, 10.8% reported annual family income between $50,001-70,000CDN, 15.6% reported annual family income between $70,001-90,000CDN, 33.2% reported annual family income between $90,001-150,000CDN, and 26.1% reported annual family income of over $150,000CDN. The sample under-represents families whose income is below the median family income for Canadian families of $78,870CDN (Statistics Canada, 2016). Data were missing for the annual family income item for 1.6% of participants.

In response to an item related to marital status, 86.7% of participants reported their marital status as married, 5.2% reported their marital status as single, 3.1% reported their marital status as divorced, 4.7% reported their marital status separated, and one participant did not respond to the item related to marital status. The sample over-represents married families, as Statistics Canada (2017a) reported that 69.7% of Canadian children under age 14 live with two parents. The sample under-represents lone-parent families, which form 19.2% of Canadian families with children aged under 14 years (Statistics Canada, 2017a). Marital status data specific to families with children aged 2-12 is not available from Statistics Canada.

In response to an item related to education, 0.3% of participants reported that the highest level of education they had attended was elementary or middle school, 11.7% reported that it was high school, 29.4% reported that it was college or trade school, 36.2% reported that it was a university undergraduate degree, and 22.4% reported that it was a university graduate degree. In comparison to Statistics Canada (2017b) data showing that 56.3% of Canadians over the age of
15 had completed a post-secondary education program, our sample over-represents parents who have completed a post-secondary education program.

The majority of participants reported being born in Canada (77.9%). The 22.1% of the sample who reported being born outside of Canada is comparable to the 21.9% of the Canadian population that is born outside of Canada (Statistics Canada, 2017c).

**Measures.**

*Readiness to change parenting behaviours*. In addition to demographic questions, parents completed two measures assessing readiness to change parenting behaviours. The PARC\(^1\) (Perron & Lee, 2018) is a 20-item measure of readiness to change parenting behaviours that has 4 subscales: Precontemplation, Contemplation, Action, and Maintenance. Manuscript Two Appendix B lists PARC item labels used in the present manuscript and presents the full wording for each item.

According to Hunsley and Mash’s (2008) criteria for internal consistency, *adequate* internal consistency is associated with \(\alpha\) values of .70–.79; *good* internal consistency is associated with \(\alpha\) values of .80–.89; *excellent* internal consistency is associated with \(\alpha\) values of \(\geq .90\). In an initial development sample, scores on the PARC were found to have adequate internal consistency for Precontemplation (\(\alpha = .71\) for mothers and .78 for fathers) and Action (\(\alpha = .77\) for both mothers and fathers). Good internal consistency was found for scores on Contemplation (\(\alpha = .80\) for mothers and .87 for fathers) and Maintenance (\(\alpha = .85\)) for mothers. Excellent internal consistency was found for scores on the Maintenance subscale for fathers (\(\alpha = .90\); Perron & Lee, 2018).

---

\(^1\) A copy of the PARC can be obtained by contacting the corresponding author.
**Readiness algorithm.** A modified version of a four-item staging algorithm that was developed by Perron and Lee (2018) was included in the study battery. Each item approximated one of the stages in the SOC model: Precontemplation (“I don’t think that I will try to improve my parenting in the next 6 months”), Contemplation (“I want to learn new ways of parenting in the next 6 months”), Action (“I am learning new ways of parenting and want to keep learning about parenting”), or Maintenance (“In the past 6 months I have started to use new ways of parenting”). We predicted that parents who selected I don’t think that I will try to improve my parenting in the next 6 months would have higher PARC Precontemplation scores and lower PARC Contemplation, PARC Action, and PARC Maintenance scores than would parents who selected one of the other 3 algorithm items.

**Data analyses and results**

**Data cleaning.** Data were cleaned according to the guidelines proposed by Tabachnick and Fidell (2016). Data were deleted listwise for any respondent who had 2 or more (10% or more) missing items on the PARC (Bennett, 2001). This resulted in the deletion of data from 9 participants. Screening for impossible values did not identify any such values. Following this initial review of the data, there remained a total of 0.0013% missing data on the PARC. These remaining missing values were imputed through expectation maximization (Roth, 1994).

**Factor structure.** A CFA using AMOS 23.0 (IBM SPSS, 2014) was conducted to determine whether the PARC data map onto the hypothesized four-factor Precontemplation-Contemplation-Action-Maintenance structure. Schweizer’s (2010) guidelines for assessing and reporting model fit were followed. Accordingly, we assessed goodness of fit against criterion values in the range of comparative fit index (CFI) > .90-.95 (where values above .95 indicate good fit and values between .90 and .95 indicate acceptable fit), root mean square error of
approximation (RMSEA) < .05-08 (where values below .05 indicate good fit and values between .05-08 indicate acceptable fit), standardized root mean square residual (SRMR) < .10, and normed \( \chi^2/df < 3 \) (where values below 2 indicate good fit and values between 2-3 indicate acceptable fit). These criteria were also used in Perron and Lee (2018) to evaluate the PARC’s factor structure.

The model (Model 1) was estimated using maximum likelihood estimation with the 20 items as indicators of the four factors. This CFA yielded fit indices of: RMSEA = .09, SRMR = .07, CFI = .89, and normed \( \chi^2/df = 3.74 \), suggesting an inadequate fit. Consequently, the modification indices were consulted to determine whether the model fit could be improved by allowing the correlation of specific error terms (Kline, 2011). The modification indices suggested allowing the correlation of error terms for the following pairs of items: PC1 and PC3; PC3 and PC7; PC6 and PC7; A1 and A4; A1 and A7; A4 and A7; A1 and A2; A2 and A4. The correlation of error terms for these pairs of items was theoretically sound given the similar wording and concepts covered in each of the pairs. For example, items PC3 and PC7 both refer to changing parenting behaviours as being a “waste” of time, items PC6 and PC7 both make reference to reasons for not changing parenting behaviours, items A1 and A4 refer to “working” on parenting, and items A1 and A7 refer to “new ways to parent.” In addition, the suggested modifications are similar to those performed by Perron and Lee (2018). Specifically, 4 of the 8 suggested modifications are modifications that were also performed by Perron and Lee (2018). Despite the potential for chance capitalization (MacCallum, Roznowski, & Necowitz, 1992), the suggested modifications were performed (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Note that the theoretical rationale described in this section as it relates to following modification
indices to correlate certain error terms is the same rationale followed for other CFAs described in this manuscript.

After making model specifications based on modification indices, a CFA was conducted on the updated model (Model 2). This CFA yielded fit indices of: RMSEA = .07, SRMR = .05, CFI = .93, and normed χ²/df = 2.77, suggesting an acceptable model fit. Although further modifications to the model might lead to minor improvements in the model fit, none were made as there was no clear theoretical rationale for doing so. The correlations between the factors were as follows: Precontemplation and Contemplation = -.89; Precontemplation and Action = -.82; Precontemplation and Maintenance = -.67; Contemplation and Action = .95; Contemplation and Maintenance = .81; Action and Maintenance = .82. These analyses support the hypothesized four-factor model underlying the PARC. Table 1 presents factor loadings for Models 1 and 2. Table 2 presents goodness of fit statistics for the CFAs on Models 1 and 2.

**One-factor model.** Given the size of the correlations between factors in Model 2, the possibility that a single factor model in which the 20 items represent a theoretical continuum of Readiness (with Precontemplation items reverse scored) was assessed. The model (Model 3) was estimated using maximum likelihood estimation with the 20 items as indicators of the single factor. This CFA yielded fit indices of: RMSEA = .11, SRMR = .08, CFI = .80, and χ²/df = 5.74, suggesting an inadequate fit. Consequently, the modification indices were consulted to determine whether the model fit could be improved by allowing the correlation of specific error terms (Kline, 2011). The modification indices suggested allowing the correlation of error terms for the following pairs of items: PC3 and PC7; PC6 and PC7; A1 and A2; A1 and A4; A1 and A7; A4 and A7; A1 and A2; A2 and A4; M5 and M6; M3 and M6; M3 and M5. After making these specifications, a CFA was conducted on this model (Model 4). This CFA yielded fit indices of:
RMSEA = .08, SRMR = .06, CFI = .90, and normed $\chi^2$/df = 3.45, suggesting an improved but marginally inadequate fit.

**Additional models.** Conducting further analyses by splitting the sample randomly and by splitting the sample into mothers and fathers was considered. However, these analyses were not performed due to inadequate sample size for split samples or for a sub-sample of fathers.

**Internal consistency.** A reliability analysis was undertaken following the CFA to evaluate the reliability of scores from this sample. Subscale $\alpha$ values were marginally inadequate for scores on the Precontemplation subscale for mothers (.67) and fathers (.67) and good for Contemplation for mothers (.85) and fathers (.83), Action for mothers (.83) and fathers (.85), and Maintenance for mothers (.88). Excellent internal consistency was obtained for scores on Maintenance for fathers (.92).

**Convergent validity.** One-way ANOVAs yielded statistically significant differences for each PARC subscale, meaning that PARC subscale scores were different according to algorithm grouping. Mean scores on PARC subscales for each respective algorithm group are displayed in Table 3.

Specifically, Precontemplation scores were significantly different for different levels of the algorithm, $F(3, 379) = 35.86, p < .001$. Tukey post hoc analysis revealed that mean Precontemplation scores for those in the algorithm Precontemplation group ($M = 2.92, SD = .51$) were significantly higher than for those in the Contemplation ($M = 2.32, 95\% CI [2.19, 2.45], p < .001$), Action ($M = 2.36, 95\% CI [2.19, 2.33], p < .001$), and Maintenance ($M = 2.20, 95\% CI [2.02, 2.37], p < .001$) groups.

Contemplation scores were significantly different for different levels of the algorithm, $F(3, 379) = 94.08, p < .001$. Tukey post hoc analysis revealed that mean
Contemplation scores for those in the algorithm Contemplation group ($M = 3.82, SD = .49$) were significantly higher than for those in the Precontemplation ($M = 2.64, 95\% \text{CI } [2.54, 2.75], p < .001$) and Action ($M = 3.58, 95\% \text{CI } [3.51, 3.67], p = < .001$) groups.

Action scores were significantly different for different levels of the algorithm, $F(3, 379) = 81.16, p < .001$. Tukey post hoc analysis revealed that mean Action scores for those in the algorithm Action group ($M = 3.66, SD = .52$) were higher than for those in the Precontemplation ($M = 2.67, 95\% \text{CI } [2.58, 2.76], p < .001$) group.

Maintenance scores were significantly different for different levels of the algorithm, $F(3, 379) = 39.74, p < .001$. Tukey post hoc analysis revealed that mean Maintenance scores for those in the algorithm Maintenance group ($M = 2.97, SD = .90$) were higher than for those in the Precontemplation ($M = 1.98, 95\% \text{CI } [1.84, 2.13], p < .001$) group.

**Discussion**

In a large community sample of Canadian parents, the four-factor (Precontemplation-Contemplation-Action-Maintenance) solution of the PARC that was identified by Perron and Lee (2018) was replicated in a CFA. With the exception of the Precontemplation subscale (for which scores demonstrated marginally inadequate internal consistency) scores on the PARC’s subscales demonstrated predominantly good internal consistency for both mothers and fathers. Overall, PARC subscale scores had significant relationships in the expected directions with a readiness algorithm, providing evidence of convergent validity.

**Study 2**

In Study 2 we examined whether the PARC’s factor structure was consistent for mothers, fathers, parents with a preschool aged child, and parents with a school aged child in a combined sample that included the sample reported in Perron and Lee (2018) and the sample described in
Study 1. These analyses were performed in order to examine the consistency of the PARC’s factor structure across demographic groups. We hypothesized that our findings would further support the PARC’s underlying Precontemplation-Contemplation-Action-Maintenance structure. Following a description of these analyses, we report normative data for the PARC.

**Method**

**Participants and procedure.** Participants were 765 Canadian parents with at least one child between the ages of 2 and 12 years. Participants were derived from two large Canadian community samples: Perron and Lee’s (2018) sample of 381 parents and the sample of 384 parents described in Study 1. The participants from Perron and Lee (2018) were recruited from a variety of sources, including social media (e.g., through Facebook messages to generic [i.e. not explicitly related to parenting] Facebook groups located in Canada inviting individuals with a child between 2-12 years old to complete a survey online; \( n = 201 \)), from an arena in Ottawa, Ontario \( (n = 58) \), from public locations (e.g., public parks) in Ottawa, Ontario \( (n = 79) \), from a site offering multiple health and parenting services in Calgary, Alberta \( (n = 15) \), from a child care center in Ottawa, Ontario \( (n = 10) \), and from a child care center in Gatineau, Quebec \( (n = 8) \). Demographics for the combined sample are shown in Table 4.

**Measure.** Parents completed a number of demographic questions and the 20-item PARC.

**Data analyses and results.**

**PARC scores.** Scores for PARC subscales (Precontemplation, Contemplation, Action, and Maintenance) were calculated by determining the mean score for items in each respective subscale. Table 5 presents means and standard deviations for PARC subscale scores across key demographic categories.
Sample differences.

**PARC differences.** Independent samples $t$-tests were used to assess mean differences for PARC subscale scores between participants from Perron and Lee (2018) and those described in Study 1. No differences were found except for scores on the Maintenance subscale. Independent samples $t$-tests indicated that Maintenance scores were significantly higher for participants from Perron and Lee (2018) than they were for participants described in Study 1: $t(756.09)=2.90, p < 0.01$.

**Gender differences.** Of the 765 participants, 484 (63.3%) were mothers and 280 (36.6%) were fathers. One participant did not identify a gender so this participant’s data were excluded from gender-based analyses. Independent samples $t$-tests were used to assess mean differences for PARC subscale scores between mothers and fathers. Levene’s test was significant for Contemplation and Maintenance, suggesting that variances were not equal between mothers and fathers for those subscales. Therefore, Welch’s $t$-test was used for $t$-tests on those subscales (Ruxton, 2006). Precontemplation scores were significantly higher for fathers than for mothers: $t(762)=3.89, p < .001$. Contemplation scores were significantly higher for mothers than for fathers: $t(547.32)=-2.01, p = .05$. Action scores were significantly higher for mothers than for fathers: $t(762) = -2.12, p = .03$. The $t$-test on mothers’ and fathers’ Maintenance scores was not significant $t(527.60)=-1.86, p = .065$.

**Child age differences.** Of the 765 participants, 340 (44.4%) responded with regards to a preschool aged child (a child aged 2-4 years) and 419 (54.8%) responded with regards to a school aged child (a child aged 5-12 years). Six participants did not indicate a target child age so their data were excluded from child age-based analyses. Independent samples $t$-tests were used to assess mean differences for PARC subscale scores between parents who responded with regards
to a pre-school aged child and those who responded with regards to a school aged child. 

Variance were equal for all PARC subscale scores. Independent samples t-tests indicated that there were no significant child age-related differences on PARC subscale scores.

**Factor structure.**

*Factor structure for mothers.* A CFA was conducted to determine whether the PARC maps onto the hypothesized four-factor solution among mothers \( N = 484 \). The model (Model 5) was estimated using maximum likelihood estimation with the 20 items as indicators of the four factors. This CFA yielded fit indices of: RMSEA = .08, SRMR = .07, CFI = .89, and normed \( \chi^2/df = 4.03 \), suggesting an inadequate fit.

A review of modification indices revealed that the model fit could be improved by allowing the correlation of some error terms (Kline, 2011). The modification indices suggested allowing the correlation of error terms for the following pairs of items: PC1 and PC3; PC3 and PC7; PC6 and PC7; PC7 and PC1; A1 and A4; A1 and A7; A4 and A7; A4 and A5; A7 and A5. After making these specifications, a CFA was conducted on this model (Model 6). This CFA yielded fit indices of: RMSEA = .06, SRMR = .05, CFI = .93, and normed \( \chi^2/df = 3.00 \), suggesting an acceptable model fit.

Further modifications to the model could lead to minor improvements in the model fit but these were not made as there was no clear rationale for doing so. The correlations between the factors were as follows: Precontemplation and Contemplation = -.84; Precontemplation and Action = -.71; Precontemplation and Maintenance = -.57; Contemplation and Action = .93; Contemplation and Maintenance = .88; Action and Maintenance = .84.

*One-factor model.* Given the size of the correlations between factors in Model 6, the possibility that a single factor model in which the 20 items represent a theoretical continuum of
Readiness (with Precontemplation items reverse scored) was assessed. The model (Model 7) was estimated using maximum likelihood estimation with the 20 items as indicators of the single factor. This CFA yielded fit indices of: RMSEA = .10, SRMR = .08, CFI = .82, and $\chi^2/df = 5.91$, suggesting an inadequate fit. Consequently, the modification indices were consulted to determine whether the model fit could be improved by allowing the correlation of specific error terms (Kline, 2011). The modification indices suggested allowing the correlation of error terms for the following pairs of items: PC3 and PC7; PC6 and PC7; A1 and A2; A1 and A4; A2 and A4; A1 and A7; M5 and M6; M3 and M5; M3 and M6. After making these specifications, a CFA was conducted on this model (Model 8). This CFA yielded fit indices of: RMSEA = .08, SRMR = .06, CFI = .90, and normed $\chi^2/df = 3.71$, suggesting an improved but marginally inadequate fit.

**Factor structure for fathers.** A CFA was conducted to determine whether the PARC maps onto the hypothesized four-factor solution among fathers ($n = 280$). The model (Model 9) was estimated using maximum likelihood estimation with the 20 items as indicators of the four factors. This CFA yielded fit indices of: RMSEA = .09, SRMR = .07, CFI = .88, and normed $\chi^2/df = 3.30$, suggesting an inadequate fit. A review of modification indices revealed that the model fit could be improved by allowing the correlation of some error terms (Kline, 2011). The modification indices suggested allowing the correlation of error terms for the following pairs of items: PC3 and PC7; A1 and A4; A1 and A5. After making these specifications, a CFA was conducted on this model (Model 10). This CFA yielded fit indices of: RMSEA = .08, SRMR = .06, CFI = .90, and normed $\chi^2/df = 2.95$, suggesting an acceptable model fit.

Further modifications to the model could lead to minor improvements in the model fit but these were not made as there was no clear rationale for doing so. The correlations between the factors were as follows: Precontemplation and Contemplation = -.89; Precontemplation and
Action = -.77; Precontemplation and Maintenance = -.67; Contemplation and Action = .90; Contemplation and Maintenance = .82; Action and Maintenance = .77.

**One-factor model.** Given the size of the correlations between factors in Model 10, the possibility that a single factor model in which the 20 items represent a theoretical continuum of Readiness (with Precontemplation items reverse scored) was assessed. The model (Model 11) was estimated using maximum likelihood estimation with the 20 items as indicators of the single factor. This CFA yielded fit indices of: RMSEA = .12, SRMR = .08, CFI = .78, and χ²/df = 4.98, suggesting an inadequate fit. Consequently, the modification indices were consulted to determine whether the model fit could be improved by allowing the correlation of specific error terms (Kline, 2011). The modification indices suggested allowing the correlation of error terms for the following pairs of items: PC3 and PC7; PC6 and PC7; A1 and A2; A1 and A4; A1 and A7; A4 and A7; A1 and A2; M5 and M6; M3 and M6; M3 and M5. After making these specifications, a CFA was conducted on this model (Model 12). This CFA yielded fit indices of: RMSEA = .10, SRMR = .07, CFI = .87, and normed χ²/df = 3.53, suggesting an inadequate fit.

**Factor structure for parents responding in reference to a pre-school aged child.** A CFA was conducted to determine whether the PARC maps onto the hypothesized four-factor solution among parents responding in reference to a pre-school-age child (n = 340). The model (Model 13) was estimated using maximum likelihood estimation with the 20 items as indicators of the four factors. This CFA yielded fit indices of: RMSEA = .08, SRMR = .07, CFI = .89, and normed χ²/df = 3.16, suggesting an inadequate fit. A review of modification indices revealed that the model fit could be improved by allowing the correlation of certain error terms (Kline, 2011). The modification indices suggested allowing the correlation of error terms for the following pairs of items: PC1 and PC3; PC1 and PC7; PC3 and PC7; A1 and A4; A4 and A5; A1 and A7; A4
and A7. After making these specifications, a CFA was conducted on this model (Model 14). This CFA yielded fit indices of: RMSEA = .07, SRMR = .06, CFI = .92, and normed $\chi^2$/df = 2.57, suggesting an acceptable model fit. Further modifications to the model could lead to minor improvements in the model fit but these were not made as there was no clear rationale for doing so. The correlations between the factors were as follows: Precontemplation and Contemplation = -.79; Precontemplation and Action = -.76; Precontemplation and Maintenance = -.49; Contemplation and Action = .98; Contemplation and Maintenance = .81; Action and Maintenance = .81.

**One-factor model.** Given the size of the correlations between factors in Model 14, the possibility that a single factor model in which the 20 items represent a theoretical continuum of Readiness (with Precontemplation items reverse scored) was assessed. The model (Model 15) was estimated using maximum likelihood estimation with the 20 items as indicators of the single factor. This CFA yielded fit indices of: RMSEA = .11, SRMR = .08, CFI = .80, and $\chi^2$/df = 5.74, suggesting an inadequate fit. Consequently, the modification indices were consulted to determine whether the model fit could be improved by allowing the correlation of certain error terms (Kline, 2011). The modification indices suggested allowing the correlation of error terms for the following pairs of items: PC3 and PC7; PC6 and PC7; A1 and A2; A1 and A4; A1 and A7; A4 and A7; M5 and M6; M3 and M6; M5 and M6. After making these specifications, a CFA was conducted on this model (Model 16). This CFA yielded fit indices of: RMSEA = .08, SRMR = .07, CFI = .88, and normed $\chi^2$/df = 3.34, suggesting an inadequate fit.

**Factor structure for parents responding in reference to a school aged child.** A CFA was conducted to determine whether the PARC maps onto the hypothesized four-factor model among parents who responded to the PARC in reference to a school-age child ($n = 419$). The
model (Model 17) was estimated using maximum likelihood estimation with the 20 items as indicators of the four factors. This CFA yielded fit indices of: RMSEA = .08, SRMR = .07, CFI = .89, and normed $\chi^2$/df = 3.88, suggesting an inadequate fit. A review of modification indices revealed that the model fit could be improved by allowing the correlation of certain error terms (Kline, 2011). The modification indices suggested allowing the correlation of error terms for the following pairs of items: PC3 and PC7; A1 and A4; A1 and A5. The suggested modifications were performed.

After making these specifications, a CFA was conducted on this model (Model 18). This CFA yielded fit indices of: RMSEA = .07, SRMR = .05, CFI = .93, and normed $\chi^2$/df = 2.97, suggesting an acceptable model fit. Further modifications to the model could lead to minor improvements in the model fit but these were not made as there was no clear rationale for doing so. The correlations between the factors were as follows: Precontemplation and Contemplation = -.84; Precontemplation and Action = -.68; Precontemplation and Maintenance = -.65; Contemplation and Action = .88; Contemplation and Maintenance = .88; Action and Maintenance = .81.

**One-factor model.** Given the size of the correlations between factors in Model 18, the possibility that a single factor model in which the 20 items represent a theoretical continuum of Readiness (with Precontemplation items reverse scored) was assessed. The model (Model 19) was estimated using maximum likelihood estimation with the 20 items as indicators of the single factor. This CFA yielded fit indices of: RMSEA = .11, SRMR = .08, CFI = .80, and $\chi^2$/df = 5.74, suggesting an inadequate fit. Consequently, the modification indices were consulted to determine whether the model fit could be improved by allowing the correlation of specific error terms (Kline, 2011). The modification indices suggested allowing the correlation of error terms for the
following pairs of items: PC3 and PC7; A1 and A2; A1 and A4; A1 and A7; A4 and A7; M5 and M6; M3 and M6. After making these specifications, a CFA was conducted on this model (Model 20). This CFA yielded fit indices of: RMSEA = .08, SRMR = .06, CFI = .91, and normed $\chi^2/df = 3.46$, suggesting a marginally inadequate fit.

**Internal consistency.** A reliability analysis was undertaken following the CFA to establish internal consistency for scores on each subscale. We followed Hunsley and Mash’s (2008) criteria for internal consistency. For the combined sample ($n = 765$), subscale $\alpha$ values were adequate for scores on the Precontemplation subscale for mothers (.70) and fathers (.72) and good for Contemplation for mothers (.83) and fathers (.85), Action for mothers (.81) and fathers (.82), and Maintenance for mothers (.86). Excellent internal consistency was obtained for scores on Maintenance for fathers (.91).

**Discussion**

We have presented preliminary Canadian norms for the PARC and we have found at least adequate internal consistency for all subscales for both mothers and fathers, with the majority of subscales demonstrating good internal consistency. We also found the PARC’s Precontemplation-Contemplation-Action-Maintenance factor structure to be consistent across parent gender categories and child age categories.

**General Discussion**

We replicated the four-factor (Precontemplation-Contemplation-Action-Maintenance) solution of the PARC identified by Perron and Lee (2018) in a new sample. Further evidence related to the PARC’s convergent validity was also found. PARC subscale scores were significantly different for different levels of the four-item staging algorithm. In addition, analyses of a combined sample with data from this study and from Perron and Lee (2018) found this
factor structure to be consistent across parent gender and child age categories. The majority of PARC subscales demonstrated good internal consistency for scores on all subscales for mothers and fathers.

Gender-based analyses of mean scores from the combined sample provided preliminary normative information that may be useful for future applications of the PARC. These analyses also highlighted relevant differences in PARC scores between mothers and fathers: Precontemplation scores were significantly higher for fathers compared with mothers, suggesting that more fathers than mothers were not thinking about changing their parenting. Mothers scored higher than did fathers for both Contemplation and Action. This provides support for the interpretation that more mothers than fathers were considering changing parenting behaviours and had begun to make change. These findings suggest that researchers and clinicians who use the PARC should use separate norms for mothers and fathers. In addition, future research into differences in response patterns between mothers and fathers will be important to informing the interpretation of PARC results.

Although differences in PARC scores were identified between mothers and fathers, there were no significant child age-related differences on PARC subscale scores. Parents of preschool children and parents of school age children generally responded to the PARC in the same manner. Our results suggest that separate norms may not be needed for parents of children of different ages.

Early applications of the URICA to parenting (e.g., Brestan et al., 1999; Littell & Girvin, 2005; Wade & Andrade, 2015) included only three stages and did not attempt to address the Maintenance factor. Perron and Lee (2018) reported support for the Maintenance factor. We found further support for the Maintenance factor given that it was replicated in a new sample and
confirmed in the combined sample across parent gender and child age categories. This lends further support to the notion that the Maintenance factor taps a unique element of parents’ readiness to change parenting behaviours. The Maintenance factor is important because parenting is an iterative and evolving process in which parents may continuously learn and implement new parenting behaviours. They may also be flexible in adapting parenting behaviours and strategies that are effective during certain situations or timepoints, but that are less effective at others.

There are some similarities between maintaining new, effective parenting practices and the concept of relapse prevention that the Maintenance factor tapped in early TTM research. The PARC Maintenance factor may tap parents’ ability to maintain the use of effective parenting behaviours that they have learned in the past or refrain from using behaviours they have learned are ineffective. The Maintenance factor should be included in future research examining parents’ readiness to change parenting behaviours. Related, further research should be conducted to assess the PARC’s applicability to parents of children with clinical-level difficulties and, more specifically, to ascertain whether the Maintenance factor applies to this population.

Taken together, the present results and those presented by Perron and Lee (2018) provide evidence in support of the PARC’s underlying factor structure as well as the PARC scores’ internal consistency, convergent validity, and discriminant validity. As a measure that may be useful in measuring parents’ readiness to change their parenting behaviours, there are important areas of research and clinical work to which the PARC could be applied.

Specifically, the PARC may warrant further research for its potential use as an outcome measure for media campaigns that are conducted as part of population-level parenting support programs. A key target of such campaigns is to increase parents’ readiness to change their
parenting behaviours. Research into the clinical utility and feasibility of the PARC may also be useful in understanding the applicability of the PARC in assessing parents’ readiness to change prior to starting a parenting program.

Although our findings are promising in suggesting that scores on the PARC could provide valid and useful information about parents’ stage of readiness to change their parenting behaviours, there are a number of limitations associated with the research conducted to date. Our research examining the psychometric properties of the PARC was conducted with convenience community samples. The majority of parents taking part in PARC-related research were recruited online from Facebook groups. Although some research has determined that data collected via Facebook is equivalent to data collected offline (Grieve, Witteveen, & Tolan, 2014), the parents who participated our studies under-represent parents with low incomes and those who are not married. These factors have implications for the generalizability of the PARC and, ultimately, underscore that our sample was not fully representative of the population for which the PARC is intended to be used. Future research examining the PARC’s properties among parents with low family incomes and among single parents would be useful in better-understanding the generalizability of the PARC.

The staging algorithm used in the present study had been developed for the study described in Perron and Lee (2018). Comparisons between the PARC and this staging algorithm form only part of the convergent validity evidence for the PARC, but the algorithm itself lacks validity data beyond face validity.

Across all factor analyses the PARC’s goodness-of-fit statistics fall in the acceptable range rather than the good range. This is consistent with CFA results from Perron and Lee (2018). Adequate goodness-of-fit statistics were also obtained after correlating certain error
terms. Though it is reasonable to expect some shared variance between similarly worded items, it will be important for future research to assess whether modifications to the model may lead to improved goodness-of-fit statistics. Such research may be useful in further identifying items that should be dropped or modified. Future research should also investigate psychometric properties of the PARC such as temporal stability or predictive validity.

In addition, goodness-of-fit statistics were nearly adequate in certain instances for CFAs on a single-factor model. Therefore, our findings do not necessarily support an outright rejection of the notion of a single-factor model of readiness. However, these results came after correlating a relatively high number of error terms and, overall, the 4-factor model of the PARC offers a superior fit to the data.

Although scores on the majority of PARC subscales exhibited good or excellent internal consistency for both mothers and fathers, internal consistency for scores on Precontemplation was marginal. This could be associated with the low factor loadings of the PC6 item reported in Study 1. This item (“I would rather accept that my child is not perfect than change the way I parent”) is positively worded in contrast to all the other Precontemplation items, which are worded in a negative or hostile manner (e.g., PC7: “It would be a waste of time to try to learn about better ways to parent”). Given that internal consistency for the Precontemplation scale data generally meets the criterion for adequacy and that keeping the item ensures that each subscale has five items, future research may explore alternate wordings for this item (for example, “My child will never be perfect so there’s no point changing my parenting”) that better represent the negative wording of the other Precontemplation items.

Despite these limitations, the PARC may serve as a useful tool in the assessment of parents’ readiness to change parenting behaviours. Researchers and clinicians may wish to
consult mean subscale scores in Table 5 to inform their interpretations of a PARC respondent’s level of readiness. In the relative absence of other well-validated means of measuring this construct, the PARC merits further study of its psychometric properties and its utility in clinical and research settings.
References


DiClemente, C. C., Schlundt, D., & Gemmell, L. (2004). Readiness and stages of change in


Statistics Canada. (2016). *Median total income, by family type, by province and territory (All families)*.


Table 1

*PARC Factor Loadings for Models 1 and 2 (N = 384).*

<table>
<thead>
<tr>
<th>Item</th>
<th>Model 1 PC</th>
<th>C</th>
<th>A</th>
<th>M</th>
<th>Model 2 PC</th>
<th>C</th>
<th>A</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC1</td>
<td>.68</td>
<td>.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC2</td>
<td>.62</td>
<td>.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC3</td>
<td>.48</td>
<td>.41</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC6</td>
<td>.30</td>
<td>.24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC7</td>
<td>.58</td>
<td>.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>.70</td>
<td>.70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C3</td>
<td>.79</td>
<td>.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C5</td>
<td>.66</td>
<td>.66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C6</td>
<td>.74</td>
<td>.74</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C8</td>
<td>.72</td>
<td>.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A1</td>
<td>.65</td>
<td>.54</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>.68</td>
<td>.61</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A4</td>
<td>.70</td>
<td>.61</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A5</td>
<td>.76</td>
<td>.82</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A7</td>
<td>.79</td>
<td>.71</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2</td>
<td>.71</td>
<td>.71</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3</td>
<td>.79</td>
<td>.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M4</td>
<td>.80</td>
<td>.80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M5</td>
<td>.86</td>
<td>.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M6</td>
<td>.84</td>
<td>.84</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* PARC = Parent Assessment of Readiness to Change; PC = Precontemplation; C = Contemplation; A = Action; M = Maintenance.
Table 2

Results of Confirmatory Factor Analyses Conducted in Study 1 (N = 384).

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$/df $^2$</th>
<th>CFI</th>
<th>RMSEA</th>
<th>RMSEA 90% CI</th>
<th>SRMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>3.74</td>
<td>.89</td>
<td>.09</td>
<td>[.077, .092]</td>
<td>.07</td>
</tr>
<tr>
<td>Model 2</td>
<td>2.77</td>
<td>.93</td>
<td>.07</td>
<td>[.060, .076]</td>
<td>.05</td>
</tr>
</tbody>
</table>

Note. CFI = comparative fit index; RMSEA = root-mean-square error of approximation; CI = confidence interval; SRMR = standardized root-mean-square residual.
Table 3

**PARC Subscale Scores as a Function of Algorithm Scores (N = 383)**

<table>
<thead>
<tr>
<th>Response to Algorithm</th>
<th>Precontemplation</th>
<th>Contemplation</th>
<th>Action</th>
<th>Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>I don’t think that I will try to improve my parenting in the next 6 months (n = 64)</td>
<td>2.92 (.51)</td>
<td>2.64 (.49)</td>
<td>2.67 (.42)</td>
<td>1.98 (.68)</td>
</tr>
<tr>
<td>I want to learn new ways of parenting in the next 6 months (n = 68)</td>
<td>2.32 (.55)</td>
<td>3.82 (.49)</td>
<td>3.57 (.48)</td>
<td>3.31 (.76)</td>
</tr>
<tr>
<td>I am learning new ways of parenting and want to keep learning about parenting (n = 188)</td>
<td>2.26 (.49)</td>
<td>3.59 (.55)</td>
<td>3.66 (.52)</td>
<td>2.91 (.85)</td>
</tr>
<tr>
<td>In the past 6 months I have started to use new ways of parenting (n = 43)</td>
<td>2.19 (.58)</td>
<td>3.68 (.59)</td>
<td>3.81 (.49)</td>
<td>2.97 (.90)</td>
</tr>
</tbody>
</table>

*Note. PC = Precontemplation; C = Contemplation; A = Action; M = Maintenance.*
Table 4

Demographics for the Combined Sample

<table>
<thead>
<tr>
<th></th>
<th>Combined Sample (N = 765)</th>
<th>Mothers (n = 484)</th>
<th>Fathers (n = 280)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>63.3%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Male</td>
<td>36.6%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Do you have a child older than 12?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>17.4%</td>
<td>11.7%</td>
<td>27.1%</td>
</tr>
<tr>
<td>Child age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-4</td>
<td>44.8%</td>
<td>49.9%</td>
<td>35.6%</td>
</tr>
<tr>
<td>5-12</td>
<td>55.1%</td>
<td>50.1%</td>
<td>64.3%</td>
</tr>
<tr>
<td>Parent Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-29</td>
<td>10.5%</td>
<td>13.0%</td>
<td>6.1%</td>
</tr>
<tr>
<td>30-39</td>
<td>60.5%</td>
<td>77.8%</td>
<td>47.9%</td>
</tr>
<tr>
<td>40-49</td>
<td>25.9%</td>
<td>18.8%</td>
<td>38.2%</td>
</tr>
<tr>
<td>Over 50</td>
<td>3.2%</td>
<td>0.4%</td>
<td>7.9%</td>
</tr>
<tr>
<td>Annual Family Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-$30,000CDN</td>
<td>7.3%</td>
<td>6.2%</td>
<td>9.4%</td>
</tr>
<tr>
<td>$30,001-50,000CDN</td>
<td>7.8%</td>
<td>8.0%</td>
<td>7.6%</td>
</tr>
<tr>
<td>$50,001-70,000CDN</td>
<td>10.9%</td>
<td>13.1%</td>
<td>7.2%</td>
</tr>
<tr>
<td>$70,001-90,000CDN</td>
<td>13.7%</td>
<td>15.6%</td>
<td>10.5%</td>
</tr>
<tr>
<td>$90,001-150,000CDN</td>
<td>33.7%</td>
<td>36.4%</td>
<td>29.2%</td>
</tr>
<tr>
<td>Over $150,000CDN</td>
<td>26.6%</td>
<td>20.8%</td>
<td>36.1%</td>
</tr>
</tbody>
</table>
Table 5

*PARC Scores for the Combined Sample (N = 765)*

<table>
<thead>
<tr>
<th></th>
<th>Mothers (n = 484)</th>
<th>Fathers (n = 280)</th>
<th>Parents of Preschool-Aged Child (n = 340)</th>
<th>Parents of School-Aged Child (n = 419)</th>
<th>Parents with family income below $90,000 (n = 299)</th>
<th>Parents with family income above $90,000 (n = 454)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precontemplation</td>
<td>2.30 (0.55)</td>
<td>2.47 (0.60)</td>
<td>2.37 (0.60)</td>
<td>2.38 (0.58)</td>
<td>2.40 (0.62)</td>
<td>2.35 (0.56)</td>
</tr>
<tr>
<td>Contemplation</td>
<td>3.40 (0.62)</td>
<td>3.50 (0.66)</td>
<td>3.46 (0.65)</td>
<td>3.44 (0.67)</td>
<td>3.44 (0.69)</td>
<td>3.45 (0.65)</td>
</tr>
<tr>
<td>Action</td>
<td>3.54 (0.57)</td>
<td>3.44 (0.56)</td>
<td>3.51 (0.63)</td>
<td>3.45 (0.62)</td>
<td>3.54 (0.62)</td>
<td>3.44 (0.62)</td>
</tr>
<tr>
<td>Maintenance</td>
<td>2.92 (0.84)</td>
<td>2.80 (0.94)</td>
<td>2.85 (0.87)</td>
<td>2.90 (0.89)</td>
<td>2.92 (0.92)</td>
<td>2.84 (0.85)</td>
</tr>
</tbody>
</table>
Manuscript Two Appendix A

Certificate of Ethics Approval

File Number: H03-16-06

Date (mm/dd/yyyy): 04/15/2016

Université d’Ottawa  University of Ottawa
Bureau d’éthique et d’intégrité de la recherche  Office of Research Ethics and Integrity

Ethics Approval Notice

Health Sciences and Science REB

Principal Investigator / Supervisor / Co-investigator(s) / Student(s)

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Affiliation</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catherine</td>
<td>Lee</td>
<td>Social Sciences / Psychology</td>
<td>Supervisor</td>
</tr>
<tr>
<td>Jeffrey</td>
<td>Perron</td>
<td>Social Sciences / Psychology</td>
<td>Student Researcher</td>
</tr>
</tbody>
</table>

File Number: H03-16-06

Type of Project: PhD Thesis

Title: Psychometric testing for a new measure, the Parent Assessment of Readiness to Change (PARC)

Approval Date (mm/dd/yyyy): 04/15/2016

Expiry Date (mm/dd/yyyy): 04/14/2017

Approval Type: Approved

Special Conditions / Comments:
N/A
Manuscript Two Appendix B

**PARC Items**

<table>
<thead>
<tr>
<th>Item Label</th>
<th>Item wording</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC1</td>
<td>As far as I'm concerned, I don't need to change the way I parent.</td>
</tr>
<tr>
<td>PC2</td>
<td>I don't need an expert telling me how to parent my children.</td>
</tr>
<tr>
<td>PC3</td>
<td>Trying to change the way I parent is pretty much a waste of time for me because it won't</td>
</tr>
<tr>
<td>PC6</td>
<td>I would rather accept that my child is not perfect than change the way I parent.</td>
</tr>
<tr>
<td>PC7</td>
<td>It would be a waste of time to try to learn about better ways to parent.</td>
</tr>
<tr>
<td>C2</td>
<td>I'm hoping I can get help to be a better parent.</td>
</tr>
<tr>
<td>C3</td>
<td>I've been thinking about changing the way I parent.</td>
</tr>
<tr>
<td>C5</td>
<td>Maybe I can learn to be a better parent.</td>
</tr>
<tr>
<td>C6</td>
<td>I have parenting challenges and I really think I should work on them.</td>
</tr>
<tr>
<td>C8</td>
<td>I'd like to change some things about the way I parent.</td>
</tr>
<tr>
<td>A1</td>
<td>I am working hard to learn new ways to parent.</td>
</tr>
<tr>
<td>A2</td>
<td>I am finally working on the way I parent.</td>
</tr>
<tr>
<td>A4</td>
<td>Even though I'm not always successful in changing the way I parent, I am at least working</td>
</tr>
<tr>
<td>A5</td>
<td>I have started working on the way I parent but I could use some help.</td>
</tr>
<tr>
<td>A7</td>
<td>I am trying out new ways to parent.</td>
</tr>
<tr>
<td>M2</td>
<td>I'm not following through with the way I parent as well as I had hoped, and I want to make</td>
</tr>
<tr>
<td>M3</td>
<td>I thought once I had learned to parent in a positive way, the problems would be solved, but</td>
</tr>
<tr>
<td>M4</td>
<td>I may need a boost right now to help me maintain the changes I've already made in the way</td>
</tr>
<tr>
<td>M5</td>
<td>I need to prevent myself from slipping back into my old ways of parenting.</td>
</tr>
<tr>
<td>M6</td>
<td>Sometimes I feel like I might be slipping back into my old ways of parenting.</td>
</tr>
</tbody>
</table>

*Note. PC = Precontemplation; C = Contemplation; A = Action; M = Maintenance.*
Integrated Discussion

This dissertation entailed a series of studies designed to assess the applicability of the stages of readiness to change construct to parenting behaviours. The primary focus of this line of research was the development and testing of a measure of stage of readiness to change parenting behaviours labelled the PARC. A measure of stage of change readiness would serve as a useful outcome measurement to evaluate the impact of media campaigns designed to provide parents with information about parenting. Such a measure could capture the subtle changes that may result in parents’ level of readiness to learn more about parenting, even in the absence of overt changes in parenting behaviours. The PARC is designed to be used with community parents and includes items designed to assess the change readiness stages of Precontemplation, Contemplation, Action, and Maintenance. Items addressing the Maintenance stage were included because a critical part of parenting entails integrating new techniques into the iterative, day-to-day process of parenting.

The development of the PARC drew upon established guidelines for developing and testing new measures, with particular attention given to Hunsley and Mash’s (2018) criteria for evidence-based assessments. The psychometric properties of the PARC that were assessed included its scores’ reliability (by examination of internal consistency), content validity (achieved through defining the construct being measured, expert consultation, and pilot testing), construct validity (via assessment of convergent validity, discriminant validity, and factor structure), and the development of preliminary norms.

The two manuscripts included in this dissertation outlined the studies that were conducted to develop and assess the PARC. In this discussion section I highlight primary findings in an integrated manner and discuss the implications of these findings. I have organized this discussion
according to the following sub-headings: Findings, Limitations, Degree of Fit with Previous Research, Implications for Theory, Implications for Practice, Future Research, and Conclusion.

**Findings**

The initial step in the development of the PARC was the generation of an item pool. The development of the PARC item pool included, primarily, items adapted from the URICA as well as some new items that were created to capture relevant parenting tasks and concepts that were not covered in the URICA-adapted items. Expert consultation with individuals with experience in one or more areas of readiness to change, evidence-based parenting interventions, or psychological assessment provided valuable feedback on items, instructions, and the approach taken to assess readiness to change parenting behaviours. Overall the experts consulted were very positive about the potential usefulness of the PARC. Items with the lowest level of support from experts were removed and the suggested edits to items and instructions were made. The expert consultation showed that measuring stages of readiness to change among community parents was considered a worthwhile endeavour. It also suggested that a URICA adaptation was an appropriate starting point for a measure of stage of change readiness among parents.

Because it is essential that any measure of stage of change readiness for parents can be used broadly with parents who have limited literacy, I assessed the PARC’s readability and clarity. Following expert consultation and making the suggested modifications to the PARC, two standardized tests of reading level were applied to the PARC. These tests suggested that the PARC had a reading level acceptable for its intended use with community parents.

Next, I conducted a pilot test with community parents to determine whether the wording and instructions of the PARC were clear to parents. Participating parents made minor suggestions on ways that comprehensibility could be enhanced. Changes that could be made without altering
the meaning of items were made. At this stage the PARC was also reduced from 40 to 32 items, taking into account feedback from the expert consultation and the pilot test. Overall, the pilot test confirmed that community parents seemed to find the PARC both clear and relevant.

Following initial item development, expert consultation, and pilot testing, the PARC was assessed in a large community sample of Canadian parents. One of the main goals at this point was to assess whether its items mapped onto the Precontemplation-Contemplation-Action-Maintenance structure that has been identified in other SOC research. This structure was confirmed with a CFA and represented the first validation of the four-factor Precontemplation-Contemplation-Action-Maintenance SOC solution with regards to parenting behaviours. Alternate three-factor and one-factor models were not supported. This suggests that a multi-factor-based conceptualization of parents’ readiness is appropriate and that the Maintenance factor may tap an important component of parents’ readiness to change not captured in a three-factor Precontemplation-Contemplation-Action model. It also suggests that parents’ readiness to change parenting behaviours is better-explained by a multi-factor model as opposed to a one-factor model representing a continuum of readiness.

In addition to assessing factor structure, additional goals at this stage of research were to assess the PARC for other important qualities of evidence-based measures. In this initial sample, scores on each of the PARC’s subscales demonstrated acceptable internal consistency for both mothers and fathers. This means that items that were intended to measure a given stage produced similar scores. Also, PARC subscale scores generally had significant correlations with measures of child behavioural and emotional problems, perceived parental self-efficacy, laxness, overreactivity, and hostility in parenting, impression management, and a readiness algorithm.
As predicted, high Precontemplation scores were associated with lower levels of parent-reported child behavioural and emotional difficulties and higher perceived self-efficacy in managing those difficulties when they occur. This suggests that parents who thought their child had few problems and who felt confident in their ability to manage problems did not see a need to change the way they parent.

Higher scores on Contemplation and Action were associated with higher levels of parent-reported child emotional and behavioural difficulties and lower perceived self-efficacy in managing those difficulties. This suggests that a perception of child behavioural and emotional difficulties could be an important precursor of readiness to change parenting behaviours. Parents who perceived their child to engage in more problematic behaviours and emotions endorsed higher levels of readiness to change than did those who did not perceive these problems. This suggests that accurate feedback from others (e.g., teachers, child care workers) could be important in relation to parents’ readiness to change.

I also found an unexpected positive relationship between both Action and Maintenance and parental self-reports of over-reactivity as well as an unexpected positive relationship between Maintenance and parental self-reports of laxness. These findings were unexpected because I had hypothesized that higher scores on Action and Maintenance would be associated with more effective parenting behaviours. However, it is possible that parents who have begun to change their parenting behaviours (i.e., those who score higher on Action or Maintenance) may evaluate their own parenting behaviours more critically than they would have prior to making changes, but this hypothesis requires empirical testing. It would seem reasonable to hypothesize that as parents learn more about positive parenting – or simply gain experience as parents – they more readily recognize when their parenting is inconsistent with positive parenting.
Overall, the results of analyses conducted with my initial large sample provide important support that the PARC measures what it is intended to measure (and that it does not measure what it is not intended to measure). In straightforward terms, the results show that PARC items map onto the intended constructs and that items intended to measure a given stage generally produced similar scores. Also, parents’ responses to measures of non-PARC constructs (like child behavioural difficulties and perceived parental self-efficacy) generally correlated with Precontemplation, Contemplation, Action, and Maintenance scores in a theoretically sound manner.

Despite finding evidence to support key psychometric properties of the PARC in my first large sample, replication of certain findings was necessary for the PARC to be taken seriously by researchers and clinicians. Specifically, testing the PARC with another large sample was an important step in verifying whether what was found with the first large sample was due to chance or, perhaps, due to characteristics unique to the sample. Therefore, a second large community sample of Canadian parents was recruited. In this sample, the four-factor solution of the PARC was replicated with a CFA. With the exception of the Precontemplation subscale (for which scores demonstrated marginally inadequate internal consistency), the PARC’s subscale scores demonstrated predominantly good internal consistency for both mothers and fathers. PARC subscale scores were significantly different for different levels of a four-item staging algorithm, adding to the evidence of its convergent validity.

In addition, by combining data from the first sample and second sample, I had data from a sufficiently large sample of mothers, fathers, parents of pre-school aged children, and parents of school-aged children to test the consistency of the PARC’s factor structure across parent gender categories and child age categories. By conducting additional CFAs, I found the PARC’s
Precontemplation-Contemplation-Action-Maintenance factor structure to be consistent across each of these categories. The combined sample also allowed for establishment of preliminary Canadian norms for the PARC.

Gender-based analyses conducted with the combined sample highlighted a number of relevant differences in PARC scores between mothers and fathers: Precontemplation scores were significantly higher for fathers than for mothers, suggesting that more fathers than mothers were not thinking about changing their parenting. Mothers scored higher than did fathers on both Contemplation and Action. This suggests that more mothers than fathers were considering changing parenting behaviours and had begun to make change. These findings are consistent with research demonstrating that men attend fewer healthcare appointments than do women (including for their own healthcare) and that fathers are less likely to be responsible for taking their children to healthcare appointments. Mothers also spend more time with the child than do fathers (Lee, 2006). It is therefore possible that fathers’ perception of which tasks of parenting that are being referred to in the PARC influence their response patterns. Fathers may also feel that because of the fact that they spend less time with children, that changing parenting behaviours is less relevant or impactful than, perhaps, mothers feel that it would be. If this is the case, we would reasonably expect fathers’ level of readiness to change parenting behaviours to be lower than mothers’.

Although differences in PARC scores were identified between mothers and fathers in the combined sample, there were no significant child age-related differences on PARC subscale scores. Parents of preschool children and parents of school age children generally responded to the PARC in the same manner.
The results from the second sample and the combined sample are important because they add to the body of evidence that suggests that the PARC’s items map onto the four-factor structure they are intended to map onto. They also suggest that the PARC’s structure is consistent across important demographic categories relevant to parenting. In addition, the fact that parents generally responded to the PARC in the expected way based on their algorithm response is important in building upon the evidence base that shows that the PARC measures what it is intended to measure. Finally, the preliminary norms yielded with the combined sample are important to have before other researchers or clinicians use or assess the PARC. They provide a necessary point of reference that will help interpret results and situate them in the context of the research I have conducted.

**Limitations**

Despite the evidence found in support of key psychometric properties of the PARC and subsequent replication of some of the findings, there are a number of limitations associated with the research conducted as part of this dissertation. For example, my results are drawn exclusively from self-report data. My assessment of the convergent and discriminant validity could have been strengthened by the inclusion of observational assessment of problematic parenting behaviours.

Also, the two large samples collected are convenience community samples. The majority of parents taking part in PARC-related research were recruited online from Facebook groups. Although some research has determined that data collected via Facebook is equivalent to data collected offline (Grieve, Witteveen, & Tolan, 2014), the parents who participated under-represent parents with low incomes and those who are not married. Therefore, caution is urged in applying the norms for the PARC to parents who are single parents or who have low incomes.
Further, although my findings about parents’ readiness to change are consistent with a stage model, they do not address whether parents actually progress through stages over time nor whether it is possible to “skip” stages. Such evidence would be necessary in order to assert that parents’ readiness to change parenting behaviours truly occurs according to distinct stages.

The staging algorithm itself lacks validity data beyond face validity. Despite the significant positive association between staging algorithm scores and parent-reported child behavioural and emotional difficulties, all other correlations with convergent validity measures were nonsignificant. I obtained superior convergent validity evidence for the PARC. Therefore, until further research is conducted on the staging algorithm it appears reasonable to assert that the PARC has greater explanatory value than does the algorithm.

Finally, it must be stated that although my findings are promising, there is more work to be done on the PARC before it is ready to be actively used in some of the research and clinical endeavours proposed in this discussion section. There are many ways in which additional assessment of the PARC could be done to bolster the evidence in support of its psychometric properties or to challenge some of the evidence identified to date. Many of the ways in which the PARC could be further studied – and the evidence associated with its psychometrics enhanced – are outlined in the Future Research section.

**Degree of Fit with Previous Research**

My research expands on earlier applications of the URICA to parenting (e.g., Littell & Girvin, 2005; Wade & Andrade, 2015) that included only three stages and did not attempt to address the Maintenance factor. My findings are consistent with Wade and Andrade (2015) in that Precontemplation, Contemplation, and Action were identified as component stages of parents’ readiness to change parenting behaviours. My research expands this work by providing
support for a Maintenance factor, suggesting that the URICA’s full Precontemplation-Contemplation-Action-Maintenance structure applies to readiness to change parenting behaviours. Of note, my work is the first application of the SOC model to parenting behaviours among community parents.

Adding to the findings reported by Wade and Andrade (2015) the findings reported in this dissertation provide are consistent with a stage-based conceptualization applies to parents’ readiness to change parenting behaviours. The findings are contradictory to those reported by Littell and Girvin’s (2005) who found a two-factor Intention to Change-Problem Recognition structure for their URICA adaptation.

It is possible that the findings reported by Littell and Girvin are explained by having conducted principal axis factoring (rather than a CFA) despite the existence of a theory to guide their analyses. It is unknown whether a CFA conducted on their data would have yielded results comparable to those reported by Wade and Andrade (2015) or myself.

Littell and Girvin (2005) found that cluster analysis produced groups that did not correspond to the stages of change. They indicated that the specific results that lead them to this conclusion had been submitted for publication elsewhere however a literature search did not identify the article in which these results were published. It would be informative to see these results. Of course, it is also possible that the discrepancies are related to sample differences: Littell and Girvin’s (2005) sample was of parents who had been receiving services related to child maltreatment, not a clinical sample (like that of Wade & Andrade, 2005) nor a community sample (like the participants in my research).

The findings reported in this dissertation are consistent with the findings reported by Proctor et al. (2018) in a community sample. Although Proctor et al.’s (2018) measure is neither
a URICA adaptation nor a stage-based measure, they identified a multiple-factor structure associated with parents’ readiness to change.

In contrast to a stage-based conceptualization of parents’ readiness to change parenting behaviours, a theoretical continuum of readiness has also been proposed. For example, Nock and Photos’ (2006) PCA on the PMI yielded a one component solution. However, their findings should be interpreted with caution given the small sample size and the debate over the appropriateness of PCA over factor analysis. In addition, Wade and Andrade (2015) identified a second-order readiness factor for the PFRCS. Importantly, they specified that the best-fitting model was one in which the first-order Precontemplation, Contemplation, and Action factors were specified first, followed by a second-order factor representing readiness.

Although assessment of a second-order factor was outside the scope of this dissertation, I assessed the fit of a one-factor model representing a theoretical continuum of readiness. Across multiple CFAs – including those with a combined sample, with fathers only, with mothers only, with parents of pre-school aged children only, and with parents of school-aged children only – no single-factor model met all of Schweizer’s (2010) four criteria of adequacy for model fit. Therefore, my findings did not support the notion that parents’ readiness to change exists on a continuum of readiness. Neither my findings nor Wade and Andrade’s (2015) support conceptualizing readiness as a first-order factor. However, given that goodness-of-fit statistics were nearly adequate in certain instances (for CFAs on the single-factor model), my research does not necessarily support an outright rejection of the notion of a single-factor model of readiness. It does suggest, however, that a multi-factor conceptualization of readiness (e.g., the 4-factor model of the PARC) offers a superior fit to the data.
Wade and Andrade’s work was published in 2015, so I was not aware of their testing of the PFRCS when I commenced my line of research in 2012. In addition, the expert consultation (conducted in 2013) asked participants to indicate whether they were aware of similar or related lines of work. No similar or related lines of work were identified. Had I been aware of similar or related lines of research at that time, I would have certainly considered including the relevant measures as part of research. My goal was to create a measure with the same number of items per construct, with the related aim of capturing each of the 4 well-validated SOC suggested by other lines of TTM research.

Taken together, the majority of research on parents’ readiness to change parenting behaviours suggests that the construct comprises several factors. Further, there are now multiple studies – my research included – which have suggested that the Precontemplation, Contemplation, and Action factors apply to parents’ readiness to change. My research adds to this body of knowledge by finding support for the Maintenance factor as well. This suggests that the full four-factor structure of the URICA applies to parents’ readiness to change parenting behaviours. These findings are important not only in terms of acknowledging that parents’ readiness to change parenting behaviours comprises multiple factors, but also in acknowledging that it likely occurs in a manner consistent with well-established stages of change. However, further research demonstrating that parents progress through stages will need to be conducted to establish whether parents’ readiness to change parenting behaviours is truly stage-based in nature.

**Implications for Theory**

My research expands understanding of the applicability and generalizability of the SOC construct and the URICA to parenting. The Precontemplation-Contemplation-Action-
Maintenance structure – a structure that has been shown to apply to a wide-range of health-related behaviours – also applies to parents’ readiness to change parenting behaviours.

As noted above, the element of my findings that is particularly novel is the support found for the Maintenance factor as it relates to parents’ readiness to change parenting behaviours. It is noteworthy that I found support for the Maintenance factor in each of my first, second, and combined samples. Support for the Maintenance factor was also replicated in analyses across parent gender and child age categories. This lends further support to the notion that the Maintenance factor taps a unique element of parents’ readiness to change parenting behaviours.

The Maintenance factor is important because parenting is an iterative and evolving process in which parents may continuously learn and implement new parenting behaviours. They may also be flexible in adapting parenting behaviours and strategies that are effective during certain situations or timepoints, but that are less effective at others. There are some similarities between maintaining new, effective parenting practices and the concept of relapse prevention that the Maintenance factor tapped in early TTM research. The PARC Maintenance factor may tap parents’ ability to maintain the use of effective parenting behaviours that they have learned in the past or refrain from using behaviours they have learned are ineffective.

Implications for Practice

The area of practice in which the PARC may most readily intersect with evidence-based parenting support is in the evaluation of universal media campaigns. A range of media (such as brochures, newspaper articles, billboards, or television content) are used to communicate positive parenting information and messages and normalize help-seeking with regards to parenting (Sanders et al., 2014). Measuring changes in parents’ readiness to change parenting behaviours
(e.g., with the PARC) may prove to be a target variable particularly germane to the evaluation of these campaigns.

Another area of practice to which the PARC may be relevant is assessing – in the context of a parenting intervention – the extent to which parents integrate newly-learned parenting behaviours into their lives. My identification of a Maintenance component to parents’ readiness to change parenting behaviours could serve useful in understanding long-term outcomes associated with parenting interventions.

To date, the vast majority of research into the development and assessment of parenting programs has focused on parents who have a perceived (or mandated) immediate need for support. Less research has examined how parents maintain changes and generalize knowledge and skills to new areas within their parenting. The Maintenance factor may be useful in evaluating the longitudinal impacts of parenting interventions and helping understand how best to instill long-term sustainable change in parents accessing parenting supports.

**Future Research**

Future research extending the line of research that I have pursued in this dissertation falls into two categories: a) studies that could be conducted in the short- and immediate-term aimed at further assessing the PARC’s psychometric properties and b) studies that could be conducted in the long-term aimed at the more aspirational applications of the PARC alluded to in the section above on implications for practice. These two categories are not necessarily mutually exclusive.

There are a number of other issues that should be addressed as part of continued assessment of the PARC’s psychometric properties. For example, although the majority of PARC subscale scores exhibited good or excellent internal consistency for both mothers and fathers, internal consistency for Precontemplation scores was marginally inadequate in the
second sample for both mothers and fathers. This could be associated with the relatively low factor loading of the PC6 item in both the first and second samples. This item (“I would rather accept that my child is not perfect than change the way I parent”) is positively worded in contrast to all the other Precontemplation items, which are worded in a negative or hostile manner (e.g., PC7: “It would be a waste of time to try to learn about better ways to parent”).

Given that internal consistency for the Precontemplation scale scores generally meets the criterion for adequacy and that keeping the item ensures that each subscale has five items, future research may explore alternative wordings for this item (for example, “My child will never be perfect so there’s no point changing my parenting”) that better represent the negative wording of the other Precontemplation items. Overall, the PARC may benefit from research that explores whether wording for any other items could be improved. This is particularly true given that across each of the models tested, adequate goodness-of-fit statistics were obtained after making modifications to the model by correlating certain error terms. It is reasonable to expect some shared variance between similarly worded items and there is overlap between the error terms correlated in analyses on the first sample and those on the second sample. However, the amount of shared variance between certain items suggests that the items and the model can be refined and enhanced.

In addition, future research should explore optimal wording for PARC Maintenance items. Because children are consistently growing and changing, even the most competent parents must change parenting practices over time to meet the context-specific needs of the child. Although parenting is iterative, evolving, and context-dependent, parents do not necessarily need to be working to prevent “slipping” (as items M5 and M6 refer to) or “relapsing” (as the original URICA Maintenance items target) in order to endorse PARC Maintenance items. Refinements to
the wording of Maintenance items that better-capture the spirit of the construct – which, in the context of the PARC, refers to maintaining gains over time and consistently applying skills that have been found effective – may prove to enhance model fit and/or internal consistency.

Further assessment of the PARC’s convergent validity may entail observational studies. For example, an observational measure of parenting behaviours such as the Dyadic Parent-Child Interaction Scale (DPICS-II; Eyberg, Bessmer, Newcomb, Edwards, & Robinson, 1994) could be compared to PARC scores as well as self-report parenting measures, such as those used in my studies.

Part of continued evaluation of the PARC should also include investigation of a number of important criteria relevant to evidence-based assessments that have not yet been explored. Next steps in the evaluation of the PARC’s psychometric properties may include study of its scores’ test-rest reliability (e.g., by administering the PARC to the same participants on more than one occasion), predictive validity (e.g., by examining a parent’s likelihood of accessing parenting supports based on their PARC score), and clinical utility (e.g., by studying administration of the PARC by clinicians before or during a parenting intervention).

The PARC scores’ reliability and validity in diverse cultural and social groups should also be further examined. Family income and parent ethnicity has been found to moderate the relationship between parenting and important child outcomes (Hill, 2001). In my studies I did not collect data on participant ethnicity, therefore no clear understanding exists of how participant ethnicity relates to PARC responses. In terms of income, my samples over-represent families with above-median incomes. Therefore, it will be important to determine the applicability of the PARC to families with below-median incomes.
As alluded to in the section describing links between my research and other research in the area of parents’ readiness to change parenting behaviours, it will also be useful for future research to examine the PARC in clinical samples. This may include parents whose children have diagnosed behaviour disorders or parents who have been identified as requiring intervention for problematic parenting behaviours, such as abuse. No data on the PARC exist specific to parents with these characteristics. Examining PARC responses for parents in these group will be important in understanding the generalizability of the PARC. Related, it would be informative to examine how the data I have collected thus far compare to those for parents who have enrolled in parenting supports voluntarily. In addition to having implications for understanding the PARC’s generalizability, these data would be relevant to the PARC’s convergent validity.

Additional short- and intermediate-term research that supports and provides enhanced evidence of the PARC’s psychometric properties could pave the way for innovative research that utilizes the PARC as an outcome measure. Such studies could possibly use the PARC as an evaluation tool to assess the impact of universal media campaigns for parents. For example, parents’ PARC scores could be assessed before and after being exposed to public education campaigns related to parenting. Positive changes in PARC subscale scores could be taken as evidence that the campaign is effective in enhancing parents’ readiness to address their parenting behaviours. A more complex study design would include tracking which, if any, parenting resources or interventions are accessed by those exposed to the media campaign. These data could then be analyzed in relation to PARC scores at multiple time points. Ideally, such a study would also include a longitudinal examination of the likelihood that parents seek additional parenting support and how, if at all, they apply newly-learned parenting strategies in their lives.
Despite the potential for the PARC to be used in evaluations of the impact of broad, public parenting interventions such as media campaigns, there is much immediate practical work to be done to better-understand the nature of parents’ readiness to change and, more specifically, the PARC’s psychometric properties. Future efforts to understand the nature of parents’ readiness to change parenting behaviours will be necessary to consolidate my findings and to determine whether the Precontemplation-Contemplation-Action-Maintenance structure I have identified and replicated is the optimal conceptualization or whether a more optimal model exists.

It would be useful to conduct research in which responses to multiple measures of parents’ readiness to change – namely the PARC, the Parent Readiness for Change Scale (Brestan et al., 1999b), and the Readiness, Efficacy, Attributions, Defensiveness, and Importance Scale – Short Form (Proctor et al., 2018) – are assessed in one or more large samples that include both community parents as well as parents of children with clinical-level child behavioural and emotional difficulties. This would allow for the factor structures of each respective measure to be re-assessed for both clinical and community parents. In addition to attempting to replicate the factor structures identified to date for each respective measure, it would be useful to understand how scores on each measure and their component subscales converge.

**Conclusion**

Best practice guidelines were followed in the development of the PARC. Psychometric testing produced evidence in support of key components of the PARC scores’ reliability, content and construct validity, as well as preliminary Canadian norms.

My research adds to the body of research concerning the applicability and
generalizability of the SOC construct. Findings from my first large community sample of Canadian parents represented the first replication of the URICA’s Precontemplation-Contemplation-Action-Maintenance structure in the context of a measure of readiness to change parenting behaviours. Subsequently, I replicated this finding with data from a second large community sample of Canadian parents. In addition to extending a staged-based conceptualization of readiness to change to community parents, my research was the first to assess the Maintenance factor as it relates to parents’ readiness to change.

This dissertation ultimately provides support for a multi-stage conceptualization of parents’ readiness to change which includes a Maintenance stage. By adhering to established guidelines for the development of evidence-based assessments, this dissertation has resulted in the development of a measure with relatively sound psychometric properties. In the absence of well-validated means of measuring parents’ readiness to change parenting behaviours, the PARC merits further study of its psychometric properties and its utility in clinical and research settings.
References


Psychology, 68, 810-827.


and annotated example. *Communications of the Association for Information Systems, 16*, 91-109.


Improving mental health through parenting programmes: block randomised controlled trial. *Archives of Disease in Childhood, 87*, 472-477.


Appendix A

Recruitment Email Used in Manuscript One Study One

Dear (Expert),

We are writing to invite you to participate in an expert consultation on the content validation stage for a new measure, adapted from the 32-item University of Rhode Island Change Assessment Scale (URICA; McConnaughy, DiClemente, Prochaska, & Velicer, 1989).

As an expert in (to be modified to read either Stages of Change, Parenting Interventions, Change Readiness, or Psychological Measurement, depending on the expert) research, we are seeking, and highly value, your feedback on this new measure.

Our measure – the Assessment of Readiness to Change Parenting Behaviours (ARC-PB)* – is informed by Stages of Change research. It is designed to assess a parent’s readiness to make changes in her or his parenting.

Despite what is known about the importance of matching behaviour change interventions to participants’ readiness to change, we are not aware of any measure of parents’ readiness to change parenting behaviours. Our goal is to provide researchers and clinicians with a tool that will allow them to assess readiness to change among individual parents. We hope this measure would also be sensitive to changes after different types of interventions.

Given your knowledge in this area, we welcome your expert feedback on whether the items of the ARC-PB capture the respective constructs of the Stages of Change model that the URICA is designed to capture.

The link below will take you to a survey with questions about the content validity of the ARC-PB that will take no more than 20 minutes of your time. If you are willing and able to participate in this survey, please click the link below.

Please note that by completing the survey you are giving consent and that your responses will be entirely anonymous.

http://fluidsurveys.com/s/ARC-PB_EXPERTCONSULTATION/

In addition to having the ARC-PB items for you to read in the online survey, we have attached a sample to provide you with an idea of how the ARC-PB would be presented to parents.
We have worked to ensure that ARC-PB items capture the constructs they are designed to capture in the URICA while making adaptations that reflect the fact that parenting behaviours are not inherently problematic. To this end, you will likely note that of all items, those related to the Maintenance stage are the least like their URICA cousins. This reflects a de-emphasis on relapse prevention.

Please do not hesitate to contact either of us with any questions regarding this survey or ethical concerns. Please note that this project has been approved by the University of Ottawa Research Ethics Board.

We thank you very much for taking the time to share your expert feedback with us and will work diligently to incorporate it with the ultimate goal of enhancing the content and spread of parent training interventions.

Sincerely,
Jeffrey Perron, MBA
Doctoral Student in Clinical Psychology

Catherine M. Lee, PhD., C.Psych
Professor

*Note: The PARC was originally entitled the Assessment of Readiness to Change Parenting Behaviours (ARC-PB).
Appendix B

List of Experts Contacted in Manuscript One Study One

<table>
<thead>
<tr>
<th>Readiness to Change</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>John Norcross, PhD, Distinguished Professor of Psychology, University of Scranton</td>
<td></td>
</tr>
<tr>
<td>James Prochaska, PhD, Professor of Clinical and Health Psychology, University of Rhode Island</td>
<td></td>
</tr>
<tr>
<td>Carlo DiClemente, PhD, Professor, Department of Psychology, University of Maryland</td>
<td></td>
</tr>
<tr>
<td>Sharon Kennedy, PhD, Part Time Professor, Department of Psychology, University of Ottawa</td>
<td></td>
</tr>
<tr>
<td>Henny Westra, PhD, Associate Professor, Department of Psychology, York University</td>
<td></td>
</tr>
<tr>
<td>Josie Geller, PhD, Associate Professor, Department of Psychiatry, University of British Columbia</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parenting Interventions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nina Heinrichs, PhD, Professor, Clinical Child and Adolescent Psychology and Psychotherapy, Department of Psychology, University of Bielefeld</td>
<td></td>
</tr>
<tr>
<td>Divna Haslam, PhD, Senior Research Fellow, School of Psychology, University of Queensland</td>
<td></td>
</tr>
<tr>
<td>Graham Reid, PhD, Associate Professor, Clinical Science and Psychopathology, Western University</td>
<td></td>
</tr>
<tr>
<td>Patrick McGrath, PhD, Canada Research Chair and Professor of Psychology, Pediatrics, and Psychiatry, Dalhousie University</td>
<td></td>
</tr>
<tr>
<td>Ron Prinz, PhD, Professor, School of Psychology, University of South Carolina</td>
<td></td>
</tr>
<tr>
<td>Charlotte Johnston, PhD, Professor, Department of Psychology, University of British Columbia</td>
<td></td>
</tr>
<tr>
<td>Greg Fabiano, PhD, Associate Dean, Interdisciplinary Research, University at Buffalo</td>
<td></td>
</tr>
<tr>
<td>Matthew Sanders, PhD, Director, Parenting and Family Support Centre, University of Queensland</td>
<td></td>
</tr>
<tr>
<td>Susan Stern, PhD, Associate Professor, Faculty of Nursing, University of Toronto</td>
<td></td>
</tr>
<tr>
<td>Rachel Calam, PhD, Emeritus Professor, Child and Family Psychology, The University of Manchester</td>
<td></td>
</tr>
<tr>
<td>Louise Keown, PhD, Senior Lecturer, Faculty of Education and Social Work, University of Auckland</td>
<td></td>
</tr>
<tr>
<td>Karen Blasé, PhD, Senior Scientist Emerita, Child Development Institute, University of North Carolina at Chapel Hill</td>
<td></td>
</tr>
<tr>
<td>Steven Feldgaier, PhD, Director, Parenting Initiatives at Healthy Child Manitoba</td>
<td></td>
</tr>
<tr>
<td>Sylvie Normandeau, PhD, Professor, School of Psycho-Education, Université de Montréal</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Psychological Assessment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>John Hunsley, PhD, Professor, School of Psychology, University of Ottawa</td>
<td></td>
</tr>
<tr>
<td>Eric Mash, PhD, Professor Emeritus, School of Psychology, University of Calgary</td>
<td></td>
</tr>
<tr>
<td>David Dozois, PhD, Professor, Department of Psychology, Western University</td>
<td></td>
</tr>
<tr>
<td>Dennis Embry, PhD, Senior Scientist, PAXIS Institute</td>
<td></td>
</tr>
</tbody>
</table>
Appendix C

Consent Form and Questions from the PARC Expert Consultation

Consent Information

Principal Investigator: Jeffrey Perron, MBA, University of Ottawa, School of Psychology

Supervisor: Dr. Catherine Lee, C.Psych., University of Ottawa, School of Psychology

Study Overview: You are invited to participate in an expert consultation on the content validation stage for an adapted version of the University of Rhode Island Change Assessment Scale, entitled the Assessment of Readiness to Change Parenting Behaviours (ARC-PB).

Through this consultation we are seeking answers to the following research questions:

• To what extent do the ARC-PB’s items capture the constructs (i.e. pre-Contemplation, Contemplation, Action, or Maintenance) that they are intended to capture?

• Are there additional items that need to be created, or items that need to be modified?

Participation: If you agree to participate in this study, please complete the survey below. The survey should take you approximately 15-20 minutes.

Risks: There are no risks associated with your participation (or decision to not participate).

Confidentiality and anonymity: The information you share will remain strictly confidential and anonymous. Anonymity will be protected by virtue of the fact that when responses are downloaded from this website, no identifying information will be downloaded with the responses.

Conservation of Data: The data collected (i.e. responses submitted electronically via the online survey) will be stored on a secure server at the University of Ottawa. Only Jeffrey Perron and Dr. Catherine Lee will have access to the data. Data will be conserved on the secure server at the University of Ottawa for 5 years following the publication of the study, at which time all data will be destroyed.

Voluntary Participation: You are under no obligation to participate and if you choose to participate, you may refuse to answer questions that you do not want to answer. Completion and return of this survey by you implies consent. Should you choose to withdraw from the study (which you may do at any point), your response data may still be used given the anonymous nature of the study and the impossibility of retracing individual datasets.

This project has been approved by the University of Ottawa Research Ethics Board.
Intro Question: Do you feel that any additional modifications should be made to the instructions (below) for the ARC-PB?

Instructions (note that these appear at the start of the ARC-PB):

Each statement below describes how a parent might feel when thinking about parenting. Please indicate the extent to which you agree or disagree with each statement. In each case, make your choice in terms of how you feel right now, not what you have felt in the past or would like to feel. For all statements that refer to challenges in parenting, answer in terms of any changes you might want to make in the way you parent.

General instructions for this survey:

The remainder of this survey allows you to provide a rating of how well each adapted ARC-PB item captures the Stage of Change it is intended to capture. For each item-related question you will see the following:

- Column 1: The original University of Rhode Island Change Assessment Scale (URICA; McConnaughy, DiClemente, Prochaska, & Velicer, 1989) item, if applicable.

- Column 2: The adapted item of the Assessment of Readiness to Change Parenting Behaviours Scale (ARC-PB).

- Column 3: The Stages of Change (Norcross, Krebs, & Prochaska, 2011) construct that the ARC-PB item is intended to measure.

-A Drop-Down Menu: This is a Likert scale where you indicate how well you feel the ARC-PB item captures the item it is intended to measure. Note: 1=does not capture and 7=completely captures.

On the last page of this survey you will have the opportunity to provide any general comments regarding the items or the survey itself.

You will also note that items are organized by stage: Precontemplation, Contemplation, Action, and Maintenance. Prior to questions from each stage, a definition of that stage from
Norcross et. al, 2011 is provided.

Precontemplation is the stage in which there is no intention to change behaviour in the foreseeable future. Most people in this stage are unaware or underaware of their problems. Families, friends, neighbours or employees, however, are often well aware that the precontemplators suffer from the problems.

<table>
<thead>
<tr>
<th>1. As far as I’m concerned, I don’t have any problems that need changing.</th>
<th>As far as I’m concerned, I don’t need to change the way I parent.</th>
<th>Precontemplation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change. Note: 1 = does not capture and 7 = completely captures.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1a. NEW ITEM</th>
<th>As far as I’m concerned, my child is doing fine.</th>
<th>Precontemplation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change. Note: 1 = does not capture and 7 = completely captures.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>11. Trying to change is pretty much a waste of time for me because the problem doesn’t have to do with me.</th>
<th>Trying to change the way I parent is pretty much a waste of time for me because my child’s problems don’t have to do with me.</th>
<th>Precontemplation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change. Note: 1 = does not capture and 7 = completely captures.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>13. I guess I have faults, but there’s nothing that I really need to change.</td>
<td>I guess I have faults as a parent, but there’s nothing that I really need to change.</td>
<td>Precontemplation</td>
</tr>
<tr>
<td>23. I may be part of the problem, but I don’t really think I am.</td>
<td>I may be part of the problem my child is having but I don’t really think I am.</td>
<td>Precontemplation</td>
</tr>
<tr>
<td>26. All this talk about psychology is boring. Why can’t people just forget about their problems?</td>
<td>All this talk about parenting is boring. Why can’t people just forget about their problems?</td>
<td>Precontemplation</td>
</tr>
<tr>
<td>29. I have worries but so does the next person. Why spend time thinking about them?</td>
<td>I have worries about my child but so does the next person. Why spend time thinking about them?</td>
<td>Precontemplation</td>
</tr>
<tr>
<td></td>
<td>Precontemplation</td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.</td>
</tr>
<tr>
<td>---</td>
<td>------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>31. I would rather cope with my faults than try to change them.</td>
<td>I would rather accept I am not a perfect parent than try to change the way I parent my child.</td>
<td>Note: 1 = does not capture and 7 = completely captures.</td>
</tr>
<tr>
<td>31a. NEW ITEM</td>
<td>I would rather accept that my child is not perfect than try to change the way I parent.</td>
<td>Note: 1 = does not capture and 7 = completely captures.</td>
</tr>
<tr>
<td>NEW ITEM</td>
<td>It would be a waste of time to spend time learning about how to be a better parent.</td>
<td>Note: 1 = does not capture and 7 = completely captures.</td>
</tr>
</tbody>
</table>
NEW ITEM

Things like parenting classes are only useful for people who are having major problems with parenting, not me.

Precontemplation

Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.

Note: 1 = does not capture and 7 = completely captures.

NEW ITEM

I don’t need some expert telling me how to parent my children.

Precontemplation

Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.

Note: 1 = does not capture and 7 = completely captures.

Contemplation is the stage in which people are aware that a problem exists and are seriously thinking about overcoming it but have not yet made a commitment to take Action.

Contemplators struggle with their positive evaluations of their dysfunctional behaviour and the amount of effort, energy, and loss it will cost to overcome it.

<table>
<thead>
<tr>
<th>2. I think I might be ready for some self-improvement.</th>
<th>I think I might be ready to look at ways to improve my parenting.</th>
<th>Contemplation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Note: 1 = does not capture and 7 = completely captures.</td>
</tr>
<tr>
<td>2a. NEW ITEM</td>
<td>Contemplation</td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change. Note: 1 = does not capture and 7 = completely captures.</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>I think my child needs me to look at ways to improve my parenting.</td>
<td>Contemplation</td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change. Note: 1 = does not capture and 7 = completely captures.</td>
</tr>
<tr>
<td>4. It might be worthwhile to work on my problem.</td>
<td>Contemplation</td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change. Note: 1 = does not capture and 7 = completely captures.</td>
</tr>
<tr>
<td>It might be worthwhile to work on my parenting to help my child.</td>
<td>Contemplation</td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change. Note: 1 = does not capture and 7 = completely captures.</td>
</tr>
<tr>
<td>8. I’ve been thinking that I might want to change something about myself.</td>
<td>Contemplation</td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change. Note: 1 = does not capture and 7 = completely captures.</td>
</tr>
<tr>
<td>I’ve been thinking that I might want to change something about the way I parent my child.</td>
<td>Contemplation</td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change. Note: 1 = does not capture and 7 = completely captures.</td>
</tr>
<tr>
<td>12. I’m hoping this place will help me to better understand myself.</td>
<td>Contemplation</td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change. Note: 1 = does not capture and 7 = completely captures.</td>
</tr>
<tr>
<td>I’m hoping I can get help to better understand how to help my child.</td>
<td>Contemplation</td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change. Note: 1 = does not capture and 7 = completely captures.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Contemplation</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>19. I wish I had more ideas on how to solve my problem.</td>
<td>I wish I had more ideas on how to be a better parent.</td>
<td>Contemplation</td>
</tr>
<tr>
<td>21. Maybe this place will be able to help me.</td>
<td>Maybe I can learn to be a better parent.</td>
<td>Contemplation</td>
</tr>
<tr>
<td>24. I hope that someone here will have some good advice for me.</td>
<td>I hope that I can get help to be a better parent.</td>
<td>Contemplation</td>
</tr>
<tr>
<td>I have parenting challenges and I</td>
<td></td>
<td>Contemplation</td>
</tr>
<tr>
<td>15. I have a problem and I really think I should work on it.</td>
<td>really think I should work on them.</td>
<td>to which the adapted ARC-PB item above captures its associated Stage of Change.</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>-----------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>NEW ITEM</strong></td>
<td>I think I need to look at ways to learn about how to be a better parent.</td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.</td>
</tr>
<tr>
<td><strong>NEW ITEM</strong></td>
<td>I think that advice on certain aspects of parenting would be helpful.</td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.</td>
</tr>
<tr>
<td><strong>NEW ITEM</strong></td>
<td>There are certain things about the way I parent my child that I’d like to improve.</td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.</td>
</tr>
</tbody>
</table>

Note: 1 = does not capture and 7 = completely captures.
Action is the stage in which individuals modify their behaviour, experiences, and/or environment to overcome their problems. Action involves the most overt behavioural changes and requires considerable commitment of time and energy. Individuals are classified in the Action stage if they have successfully altered the dysfunctional behaviour for a period from 1 day to 6 months.

<table>
<thead>
<tr>
<th>14. I am really working hard to change.</th>
<th>I am really working hard to change the way I parent.</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. I am doing something about the problems that had been bothering me.</td>
<td>I am concerned about my child’s problems and am doing something to make things better.</td>
<td>Action</td>
</tr>
<tr>
<td>3a. NEW ITEM</td>
<td>I am concerned about the way I</td>
<td>Action</td>
</tr>
</tbody>
</table>

Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.

Note: 1 = does not capture and 7 = completely captures.
<p>| 7. I am finally doing some work on my problems. | I am finally working on my parenting in order to help my child. | Action | Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change. Note: 1 = does not capture and 7 = completely captures. |
| 10. At times my problem is difficult, but I’m working on it. | At times it is difficult to be a good parent, but I’m working on it. | Action | Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change. Note: 1 = does not capture and 7 = completely captures. |</p>
<table>
<thead>
<tr>
<th></th>
<th>Even though I’m not always successful in changing, I am at least working on my problem.</th>
<th>Even though I’m not always successful in changing the way I parent, I am at least working on being a better parent.</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.</td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.</td>
<td>Note: 1 = does not capture and 7 = completely captures.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20. I have started working on my problems but I would like help.</td>
<td>I have started working on improving my parenting but I would like help.</td>
<td>Action</td>
</tr>
<tr>
<td></td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.</td>
<td>Note: 1 = does not capture and 7 = completely captures.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>25. Anyone can talk about changing; I’m actually doing something about it.</td>
<td>Anyone can talk about changing the way they parent; I’m actually doing something about it.</td>
<td>Action</td>
</tr>
<tr>
<td></td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.</td>
<td>Note: 1 = does not capture and 7 = completely captures.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td><strong>30. I am actively working on my problem.</strong></td>
<td><strong>I am actively working to become a better parent.</strong></td>
<td><strong>Action</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Note: 1 = does not capture and 7 = completely captures.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NEW ITEM</strong></td>
<td><strong>I am trying out new ways to parent.</strong></td>
<td><strong>Action</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Note: 1 = does not capture and 7 = completely captures.</td>
<td></td>
</tr>
<tr>
<td><strong>NEW ITEM</strong></td>
<td><strong>I’ve been making an effort to learn things that will help me be the best parent I can be.</strong></td>
<td><strong>Action</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.</td>
<td></td>
</tr>
</tbody>
</table>
**NEW ITEM**

<table>
<thead>
<tr>
<th>Action</th>
<th>Note: 1 = does not capture and 7 = completely captures.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th></th>
<th>After I try something that is ineffective, I look into more effective ways of addressing my child’s behaviour.</th>
<th></th>
</tr>
</thead>
</table>

**Maintenance** is the stage in which people work to prevent relapse and consolidate the gains attained during Action. This stage extends from 6 months to an indeterminate period past the initial Action. Remaining free of the problem and/or consistently engaging in a new incompatible behaviour for more than 6 months are the criteria for the Maintenance stage.

<table>
<thead>
<tr>
<th>Maintenance</th>
<th>Note: 1 = does not capture and 7 = completely captures.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th></th>
<th>32. After all I had done to try and change my problem, every now and then it comes back to haunt me.</th>
<th>Maintenance</th>
<th>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I worked hard to be a better parent to help my child, but every now and then, I slip into old habits so I need help to stay on track</td>
<td></td>
<td>Note: 1 = does not capture and 7 = completely captures.</td>
</tr>
</tbody>
</table>

| 6. It worries me that I might slip back on a problem I have already changed, so I am here to seek help. | I worry that I might slip back into old parenting habits, so I am looking for help. | Maintenance |
| Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change. |
| Note: 1 = does not capture and 7 = completely captures. |

| 9. I have been successful in working on my problem but I’m not sure I can keep up the effort on my own. | I have been successful in improving my parenting but I’m not sure I can keep up the effort on my own. | Maintenance |
| Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change. |
| Note: 1 = does not capture and 7 = completely captures. |

<p>| 16. I’m not following though with what I had already changed as well as I had hoped, and I’m here to prevent a relapse of the problem. | I’m not following through with positive parenting as well as I had hoped, and I want to make sure I don’t slip back into old habits. | Maintenance |
| Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change. |
| Note: 1 = does not capture and 7 = |</p>
<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
<th>Stage</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.</td>
<td>I thought once I had resolved the problem I would be free of it, but sometimes I still find myself struggling with it.</td>
<td>Maintenance</td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change. Note: 1 = does not capture and 7 = completely captures.</td>
</tr>
<tr>
<td>22.</td>
<td>I may need a boost right now to help me maintain the changes I’ve already made.</td>
<td>Maintenance</td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change. Note: 1 = does not capture and 7 = completely captures.</td>
</tr>
<tr>
<td>27.</td>
<td>I’m here to prevent myself from having a relapse of my problem.</td>
<td>Maintenance</td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.</td>
</tr>
<tr>
<td>NEW ITEM</td>
<td>NEW ITEM</td>
<td>Note: 1 = does not capture and 7 = completely captures.</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>---------</td>
<td>------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>28. It is frustrating, but I feel I might be having a recurrence of a problem I thought I had resolved.</td>
<td>It is frustrating, but I feel I might be slipping back into old parenting habits I thought I had changed.</td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.</td>
<td></td>
</tr>
<tr>
<td>NEW ITEM</td>
<td>NEW ITEM</td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.</td>
<td></td>
</tr>
<tr>
<td>NEW ITEM</td>
<td>I try to find ways to use the parenting tips I’ve learned in new situations with my children.</td>
<td>Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.</td>
<td></td>
</tr>
</tbody>
</table>
| NEW ITEM | I’ve learned a lot about becoming a better parent and I want to keep learning more. | Maintenance | associated Stage of Change.  
Note: 1 = does not capture and 7 = completely captures. |
|----------|-----------------------------------------------------------------|-------------|-------------------------------------------------------------------|
| NEW ITEM | Sometimes I have the urge to do things that I know are ineffective, but I use more effective techniques instead. | Maintenance | Please use the drop-down 1-7 Likert scale below to rate the extent to which the adapted ARC-PB item above captures its associated Stage of Change.  
Note: 1 = does not capture and 7 = completely captures. |
Do you feel that any additional modifications should be made to the instructions for the ARC-PB?

Are there additional items that need to be created, or items that need to be modified?

If you are aware of any parental change readiness scales, that we have overlooked, we would be grateful for the reference.
Appendix D

PARC Expert Consultation Results

Precontemplation

<table>
<thead>
<tr>
<th>Original item</th>
<th>ARC-PB</th>
<th>Status</th>
<th>Qualitative Feedback</th>
<th>Changes Made in Response to Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. As far as I’m concerned, I don’t have any problems that need changing.</td>
<td>As far as I’m concerned, I don’t need to change the way I parent.</td>
<td>Adequate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Trying to change is pretty much a waste of time for me because the problem doesn’t have to do with me.</td>
<td>Trying to change the way I parent is pretty much a waste of time for me because my child’s problems don’t have to do with me.</td>
<td>Moderate</td>
<td>The item parallels the original item, but I think that the word &quot;anything&quot; should be inserted so that it reads &quot;don’t have anything to do with me.&quot;</td>
<td>Changed to: Trying to change the way I parent is pretty much a waste of time for me because it won’t change my child’s problems. Because the changes took emphasis away from the problematic “to do with me” component of the original item, it was felt that it was not necessary to add the word “anything.”</td>
</tr>
<tr>
<td>1a. NEW ITEM</td>
<td>As far as I’m concerned, my child is doing fine.</td>
<td>Moderate</td>
<td></td>
<td>Item deleted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td></td>
</tr>
<tr>
<td>13. I guess I have faults, but there’s nothing that I really need to change.</td>
<td>I guess I have faults as a parent, but there’s nothing that I really need to change.</td>
<td>Moderate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. I may be part of the problem, but I don’t really think I am.</td>
<td>I may be part of the problem my child is having but I don’t really think I am.</td>
<td>Adequate</td>
<td>Although item includes parental ownership for child behaviour issues I think this could be sampled a little more in the pre-Contemplation phase and perhaps even in the Contemplation phase. Changed to: The way I parent may be part of the problem my child is having but I don’t really think it is.</td>
<td></td>
</tr>
<tr>
<td>26. All this talk about psychology is boring. Why can’t people just forget about their problems?</td>
<td>All this talk about parenting is boring. Why can’t people just forget about their problems?</td>
<td>Moderate</td>
<td>Item deleted.</td>
<td></td>
</tr>
<tr>
<td>29. I have worries but so does the next person. Why spend time thinking about them?</td>
<td>I have worries about my child but so does the next person. Why spend time thinking about them?</td>
<td>Moderate</td>
<td>Changed to: I have worries about my parenting but so does every parent. Why spend time thinking about them?</td>
<td></td>
</tr>
<tr>
<td>31. I would rather cope with my faults than</td>
<td>I would rather accept I am not a perfect parent than try to change the way I parent my child.</td>
<td>Moderate</td>
<td>The items about &quot;rather accepting I’m not a perfect parent&quot; and the similar child one may</td>
<td></td>
</tr>
<tr>
<td>31a. NEW ITEM</td>
<td>I would rather accept that my child is not perfect than try to change the way I parent.</td>
<td>Moderate</td>
<td>The items about &quot;rather accepting I'm not a perfect parent&quot; and the similar child one may require slight modification. In an Action phase many interventions would encourage parents to accept that they are not perfect but they can try so this two part premise might not factor that well. For example a parent may want to accept that they are not the perfect parent but still aim to improve.</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>NEW ITEM</td>
<td>It would be a waste of time to spend time learning about how to be a better parent.</td>
<td>Adequate</td>
<td>Changed to: It would be a waste of time to try to learn about how to be a better parent.</td>
<td></td>
</tr>
<tr>
<td>NEW ITEM</td>
<td>Things like parenting classes are only useful for people who are having major problems with parenting, not me.</td>
<td>Adequate</td>
<td>Changed to: Parenting programs are only useful for people who are having major problems with parenting, not me.</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>NEW ITEM</td>
<td>I don’t need some expert telling me how to parent my children.</td>
<td>Moderate</td>
<td>The item &quot;I don't need some expert...&quot; sounds rather confrontational. I suggestion changing &quot;some&quot; to &quot;an.&quot; Changed to: I don’t need an expert telling me how to parent my children.</td>
<td></td>
</tr>
</tbody>
</table>

**Contemplation**

<table>
<thead>
<tr>
<th>2. I think I might be ready for some self-improvement.</th>
<th>I think I might be ready to look at ways to improve my parenting.</th>
<th>Adequate</th>
<th>Changed to: I think I might be ready to find ways to improve my parenting.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2a. NEW ITEM</td>
<td>I think my child needs me to look at ways to improve my parenting.</td>
<td>Adequate</td>
<td>The item may have a low base rate too. Softening it like &quot;My child would benefit from me looking at ways&quot; might increase the variation on the scale although I'm sure you will be looking at item spread etc when validating. Item deleted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>4. It might be worthwhile to work on my problem.</td>
<td>It might be worthwhile to work on my parenting to help my child.</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>But one major concern: All of the items (or phrases) that stipulate &quot;to help my child&quot; should be eliminated. Such items potentially conflate what the parent thinks he/she should do about parenting with what a parent might do for a troubled child</td>
<td>Item deleted.</td>
<td></td>
</tr>
<tr>
<td>8. I’ve been thinking that I might want to change something about myself.</td>
<td>I’ve been thinking that I might want to change something about the way I parent my child.</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td>12. I’m hoping this place will help me to better understand myself.</td>
<td>I’m hoping I can get help to better understand how to help my child.</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A few items capture the stage well but are not parallel items though may not matter- e.g., I’m hoping this place will help me better understand myself.</td>
<td>Changed to: I’m hoping I can get help to be a better parent.</td>
<td></td>
</tr>
<tr>
<td>19. I wish I had more ideas on how to be a better parent.</td>
<td>I wish I had more ideas on how to be a better parent.</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td>to solve my problem.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------</td>
<td>------------------</td>
<td>----------------------</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>21. Maybe this place will be able to help me.</th>
<th>Maybe I can learn to be a better parent.</th>
<th>Adequate</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>24. I hope that someone here will have some good advice for me.</th>
<th>I hope that I can get help to be a better parent.</th>
<th>Moderate</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>15. I have a problem and I really think I should work on it.</th>
<th>I have parenting challenges and I really think I should work on them.</th>
<th>Adequate</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>NEW ITEM</th>
<th>I think I need to look at ways to learn about how to be a better parent.</th>
<th>Adequate</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>NEW ITEM</th>
<th>I think that advice on certain aspects of parenting would be helpful.</th>
<th>Adequate</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>NEW ITEM</th>
<th>There are certain things about the way I parent my child that I’d like to improve.</th>
<th>Adequate</th>
</tr>
</thead>
</table>

Changed to: I think I need to find out how to be a better parent.

Changed to: I think that some advice on parenting would be helpful.

Changed to: I’d like to change some things about the way I parent.
### Action

<table>
<thead>
<tr>
<th>Item</th>
<th>Original Statement</th>
<th>Revised Statement</th>
<th>Adequacy</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.</td>
<td>I am really working hard to change.</td>
<td>I am really working hard to change the way I parent.</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>I am doing something about the problems that had been bothering me.</td>
<td>I am concerned about my child’s problems and am doing something to make things better.</td>
<td>Moderate</td>
<td>Item deleted.</td>
</tr>
<tr>
<td>3a.</td>
<td>NEW ITEM</td>
<td>I am concerned about the way I parent and am doing something to be a better parent.</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>I am finally doing some work on my problems.</td>
<td>I am finally working on my parenting in order to help my child.</td>
<td>Adequate</td>
<td>Changed to: I am finally working on my parenting.</td>
</tr>
<tr>
<td>10.</td>
<td>At times my problem is difficult, but I’m working on it.</td>
<td>At times it is difficult to be a good parent, but I’m working on it.</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Even though I’m not always successful in changing the way I parent, I am at least</td>
<td>Even though I’m not always successful in changing the way I parent, I am at least</td>
<td>Adequate</td>
<td></td>
</tr>
</tbody>
</table>

The question "I am concerned about my child's problems and am doing something to make things better" could be changed to "am changing my parenting to make things better"
<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>successful in changing, I am at least working on my problem.</td>
<td>working on being a better parent.</td>
<td></td>
<td>Changed to: Even though I’m not always successful in changing the way I parent, I am at least working on it.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. I have started working on my problems but I would like help.</td>
<td>I have started working on improving my parenting but I would like help.</td>
<td>Adequate</td>
<td>Changed to: I have started working on my parenting but I would like help.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. Anyone can talk about changing; I’m actually doing something about it.</td>
<td>Anyone can talk about changing the way they parent; I’m actually doing something about it.</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. I am actively working on my problem.</td>
<td>I am actively working to become a better parent.</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEW ITEM</td>
<td>I am trying out new ways to parent.</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEW ITEM</td>
<td>I’ve been making an effort to learn things that will help me be the best parent I can be.</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEW ITEM</td>
<td>After I try something that is ineffective, I look into more effective ways of addressing my child’s behaviour.</td>
<td>Moderate</td>
<td>Item deleted.</td>
</tr>
</tbody>
</table>
## Maintenance

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>32. After all I had done to try and change my problem, every now and then it comes back to haunt me.</td>
<td>I worked hard to be a better parent to help my child, but every now and then, I slip into old habits so I need help to stay on track</td>
<td>Moderate</td>
<td>A few items capture the stage well but are not parallel items though may not matter- e.g., Item 32 not parallel.</td>
</tr>
<tr>
<td>6. It worries me that I might slip back on a problem I have already changed, so I am here to seek help.</td>
<td>I worry that I might slip back into old parenting habits, so I am looking for help.</td>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td>9. I have been successful in working on my problem but I’m not sure I can keep up the effort on my own.</td>
<td>I have been successful in improving my parenting but I’m not sure I can keep up the effort on my own.</td>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td>16. I’m not following through with what I had already changed as well as I had hoped, and I’m here to</td>
<td>I’m not following through with positive parenting as well as I had hoped, and I want to make sure I don’t slip back into old habits.</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td><strong>prevent a relapse of the problem.</strong></td>
<td>18. I thought once I had resolved the problem I would be free of it, but sometimes I still find myself struggling with it.</td>
<td>I thought once I had learned to parent in a positive way, the problems would be solved, but sometimes I still find myself slipping back into old habits</td>
<td>Adequate</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>22. I may need a boost right now to help me maintain the changes I’ve already made.</td>
<td>I may need a boost right now to help me maintain the changes I’ve already made in the way I parent my child.</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td>27. I’m here to prevent myself from having a relapse of my problem.</td>
<td>I need to prevent myself from going back to ineffective parenting methods I have used in the past.</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td>28. It is frustrating, but I feel I might be having a recurrence of a problem I thought I had resolved.</td>
<td>It is frustrating, but I feel I might be slipping back into old parenting habits I thought I had changed.</td>
<td>Adequate</td>
<td>Changed to: I need to prevent myself from slipping back into ineffective parenting habits.</td>
</tr>
</tbody>
</table>
NEW ITEM

When I feel stuck I go back to what I have learned about parenting
Moderate
When I feel stuck with a parenting problem I go back to what I have learned about parenting.
Changed to: When I feel stuck in parenting I try to remember the new things I have learned about parenting.

NEW ITEM
I try to find ways to use the parenting tips I've learned in new situations with my children.
Adequate

NEW ITEM
I’ve learned a lot about becoming a better parent and I want to keep learning more.
Adequate

NEW ITEM
Sometimes I have the urge to do things that I know are ineffective, but I use more effective techniques instead.
Moderate
Item deleted.

<table>
<thead>
<tr>
<th>Qualitative Question</th>
<th>Responses</th>
<th>Response to Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you feel that any additional modifications should be made to the instructions (below) for the ARC-PB?</td>
<td>The instructions are fine, but I suggest that you put the adjectives at the top of each column, on each page. This way the participant does not need to remember what each number means. Yes: I do not understand the last sentence. Please rewrite the sentence (1) to clarify its meaning and (2) to make it less leading (&quot;any changes you might want to make&quot; may subtly suggest that Precontemplation is not acceptable. I don't think that the last sentence is very clear at all. Maybe it needs an example? Is it helpful to state that there are no correct answers, it is just your opinion right now. I don't know if this would make it more or less likely for people to stay in the 'right now' moment and not respond as they think they should. The focus on the current feeling is very good especially given we would hope it is change sensitive during the course of any All subsequent versions of the PARC – both online and on paper – have listed adjectives at the top of each page. The sentence in question (the last sentence in the original ARC-PB used in Study 1) has been removed. It is not stated that there are “no correct answers” as it was felt that asking parents to indicate “the extent to which they agree or disagree” effectively conveys that there are no correct answers. “Answer based on how you feel right now” has been added to the instructions.</td>
<td></td>
</tr>
</tbody>
</table>
interventions. "In each case" sounds a little formal I wonder whether it would be useful to simplify this to "Answer based on how you feel right now". Also in the paper version it is worth stating parents should circle the number that corresponds and have it would also be useful disagree/agree on top of the scale (directly above the numbers) so ppl don't have to constantly refer up to the key at the top.

"... how a parent might feel when thinking about parenting." Are these items supposed to be thoughts or feelings [emotions]. Suggest "Each statement below describes how a parent might think about parenting to reduce the confound. I don't understand what the last sentence in the instructions is requesting.

This looks fine to me.

The choice of "right now" or "would like to feel" strikes me a potentially problematic. Maybe it will be clearer when I see the items. I would go with 1 or the other but not both.

Looks good.

The last sentence is not clear - perhaps parents need to see these "challenges" items before they would understand.

OK.

The instructions are fine, but I suggest that you put the adjectives at the top of each column, on each page. This way the participant does not need to remember what each number means.

<table>
<thead>
<tr>
<th>Are there additional items that need to be created, or items that need to be modified?</th>
<th>The original Maintenance items appear to only tap the relapse/relapse prevention aspect of the construct. Your adapted items parallel the original items, but your added items are essential to ensuring that the scale maps on to the entire construct. Overall, looks great - I felt like a couple of the Maintenance items were really &quot;relapse&quot; items but I get how they fit in Maintenance stage. I am excited about the possibilities of the assessment and how training and coaching for practitioners can align with the stage of the parent NOT with the curriculum they are supposed to be following and/or how parenting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>“Each statement below describes how a parent might think about parenting” has been added to the instructions.</td>
</tr>
</tbody>
</table>
curricula can be modified to be stage based - keep me posted.  

The pre-Contemplation and Maintenance phases seem the most difficult to sample in a parenting context. In particular because unlike substance issues parenting skills once acquired can be easier to maintain and parents may not need as much ongoing support. …In an Action phase many interventions would encourage parents to accept that they are not perfect but they can try so this two part premise might not factor that well. For example a parent may want to accept that they are not the perfect parent but still aim to improve.  

I would suggest checking the readability of some of these items. Some of them might be worded in a more straightforward or plain language way.  

Maintenance items most problematic.  

what about barriers to initiating parent training? (e.g., spousal support or lack thereof)  

not that I can think of  

Readability was assessed in Study 2 and was found to be adequate.  

| If you are aware of any parental change readiness scales, that we have overlooked, we would be grateful for the reference. | I am not aware of any but I think it will be a really useful measure if it is brief enough to implement. In particular if the measure is validated it would be useful to see if readiness for change moderates treatment outcome.  

Chuck Cunningham at McMaster University at one point had a readiness to change scale for parents. |

| Do you have any additional comments regarding how you feel that the ARC-PB could be improved? | Interesting idea and nice effort, overall. But one major concern: All of the items (or phrases) that stipulate "to help my child" should be eliminated. Such items potentially conflate what the parent thinks he/she should do about parenting with what a parent might do for a troubled child. Unnecessarily adds ambiguity, potentially confuses two stages of change (parenting stage, parenting stage for troubled child), and contributes error variance.  

Currently it is still rather long. I assume you will be looking at cutting down some of the items based on factor analysis etc. You have modelled it well on the existing scale and the newly added items are good additions to make it more parenting specific. | All items that reference “to help my child” were modified or eliminated. |
Seems like a good idea for a measure.

Overall I thought it was an excellent scale. I assume you will be looking at cutting down some of the items based on factor analysis. You have modelled it well on the existing scale and the newly added items are good additions to make it more parenting specific.

It would have been helpful to have had an option to comment on specific items as I read them. Can't recall specific items & concerns now that I am at the end of the survey.

Some items that talk about the child's problems need words added to make the connection to parenting clearer e.g. The last part of the question “I'm hoping I can get help to better understand how to help my child” could be changed to “parent my child.” The question “I am concerned about my child's problems and am doing something to make things better” could be changed to “am changing my parenting to make things better.”

Overall, I think that you have done a fine job in creating new items as well as adapting the others. I look forward to hearing more about this in the future as it is an important area of study.

Well done.

The items switch between focusing on the child's behaviour as the problem vs. the parenting as the problem. It might be better to keep the focus on parenting.

Some of the sentences are a bit long - but I can see that you are taking them from the original items. Often the new items are more readable.

pilot test with parents. Check for language. Think about cultural appropriateness of language and concepts.

All such items were modified to focus on parenting.
Appendix E

Consent Form and Questions Used in Manuscript One Study Two

Assessment of Readiness to Change Parenting Behaviours Study

CONSENT FORM

Who is conducting this study?

Jeffrey Perron, MBA, School of Psychology University of Ottawa, 136 Jean-Jacques Lussier, Ottawa, ON K1N 6N5613-562-5800 x7140.

Catherine M. Lee, PhD, C. Psych, School of Psychology, University of Ottawa, 136 Jean-Jacques Lussier, Ottawa, ON K1N 6N5613-562-5800 x4525.

Introduction

Thank you for considering taking part. This is an independent study conducted by Jeffrey Perron, a Doctoral student at the University of Ottawa, under the supervision of Dr. Catherine Lee. Before you agree to participate in this study, we would like to explain, why we are doing the study, what it will involve, and the benefits associated with the study.

Why are we doing this study?

We have made a new questionnaire to help us understanding thoughts about changing parenting. We are asking for your feedback on the questionnaire. It will take you about 20 minutes to complete the study. If you agree to participate, you will be asked to provide feedback on whether the questions in the questionnaire are clear.

First Come, First Served

Please note that we are seeking a limited number of participants. Once we have the required number of participants we will close the survey.

Risks and Benefits

Participation in this study involves no physical or mental discomfort, and no risks beyond those of everyday living. If, however, you find any question distressing or invasive, you are free to not answer it. There is no direct benefit to you of participating in this survey. A potential indirect benefit, however, is that you may experience a sense of satisfaction by helping us create a questionnaire that will help parents who use parenting services. It is also possible that completing the survey will help you better understand your own thoughts and feelings about parenting.
Your Rights

Participation in this study is completely voluntary and you can withdraw at any time without any effect on the care or services you or your family receive. Also note that no staff from the organization where you first learned about this survey will have access to any information you give through this survey. This study is being conducted independently from the organization where you learned about this study. In fact, staff at the organization will have no way of knowing whether or not you even completed the survey. If you decide to withdraw from the study, all of your responses will be anonymous. We will not know your name or any of your identifying information. You may withdraw from the study at any time.

Publication of Findings

When we present the results of this study are published or presented at conferences, seminars, in a Doctoral thesis, or other public forms, no individual information or information that could identify you will be released. Following completion of the study (after publication) all data will be stored on the secure University of Ottawa server for a period of 5 years. After this five year period, the data will be destroyed.

Questions

If at any point you have any questions about the survey you may contact Jeffrey Perron or Dr. Catherine Lee, whose contact information is listed above. Ethics If you have any questions, you may contact one of the researchers listed above. If you have any questions regarding the ethical conduct of this study, you may contact the Office of Research Ethics and Integrity, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 154, Ottawa, Ontario, K1N 6N5, ethics@uottawa.ca.

Consent to Participate in this Study

I acknowledge that the research study described above has been explained to me through this information form. I have been informed of my right to choose not to participate in the study. I also understand the indirect benefits of participating in the research study. I know that I may ask now or in the future any questions I have about the study or research procedures. I have been assured that my responses will remain anonymous. By clicking next, I agree to participate in this study and acknowledge that I can print a copy of this page for my own records.
Assessment of Readiness to Change Parenting Behaviours

Study Instructions

Thank you for agreeing to give feedback on this new questionnaire. What you will see on the following pages is the Assessment of Readiness to Change Parenting Behaviours (ARC-PB). It is a new questionnaire that asks questions about parenting behaviour. We are asking parents like you to comment on whether the questions of the ARC-PB make sense to parents. You will have the chance to comment on each question of the ARC-PB. Please click next.

Your gender:
- Male
- Female

Number of Children:
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- More than 8

Age of Youngest Child:
- 0-12 months
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
Your Age:
- 14
- 14-18
- Over 18

Your family’s annual income (select one):
- 0-10,000
- 10,001-30,000
- 30,001-50,000
- 50,001-70,000
- 70,001-90,000
- 90,001-150,000
- Over 150,000

Below you will see the instructions that appear in the ARC-PB (these aren't the instruction for this survey, but they are what you would see if you were filling out the ARC-PB itself).

Please read them carefully: The instructions are: "Each statement below describes how a parent might think about parenting. Please indicate the extent to which you agree or disagree with each statement. Answer based on how you feel right now."

Note, the actual ARC-PB will have five options: 1=Strongly Disagree 2=Disagree 3=Undecided 4=Agree 5=Strongly Agree

Do the instructions make sense to you?
- Yes
- No
- Not Sure
Is there anything you would change about the instructions? If yes, please describe what you would change.
- No
- Yes ______________________

You will now see each of the questions from the actual ARC-PB. For each question, you will be asked if it makes sense to you and whether you would change anything about the question.

Remember that in the actual ARC-PB, there will be five options for each question, from Strongly Disagree to Strongly Agree. You will not see these options in this survey. Also remember that we are not asking whether the question applies to you, but whether it is clear to you. For example, for the statement, "I am hoping that I can get help to become a better parent," we are not wondering whether you are actually hoping to get help with parenting, we are just wondering whether you think the statement is clear.

**Question 1**
As far as I’m concerned, I don’t need to change the way I parent.

**Does Question 1 make sense to you?**
- Yes
- No

**Is there anything you would change about Question 1? If yes, please describe below.**
- No
- Yes ______________________

**Question 2**
I think I might be ready to find ways to improve my parenting.

**Does Question 2 make sense to you?**
- Yes
- No

**Is there anything you would change about Question 2? If yes, please describe below.**
- No
- Yes ______________________

**Question 3**
I am really working hard to change the way I parent.
Does Question 3 make sense to you?
- Yes
- No

Is there anything you would change about Question 3? If yes, please describe below.
- No
- Yes ______________________

**Question 4**
I have worked hard to be a better parent to help my child, but every now and then, I slip into old habits so I need help to stay on track.

Does Question 4 make sense to you?
- Yes
- No

Is there anything you would change about Question 4? If yes, please describe below.
- No
- Yes ______________________

**Question 5**
I don’t need an expert telling me how to parent my children.

Does Question 5 make sense to you?
- Yes
- No

Is there anything you would change about Question 5? If yes, please describe below.
- No
- Yes ______________________

**Question 6**
I’m hoping I can get help to be a better parent.

Does Question 6 make sense to you?
- Yes
- No
Is there anything you would change about Question 6? If yes, please describe below.
  o  No
  o  Yes _________________

**Question 7**
I am concerned about the way I parent and am doing something to be a better parent.

**Does Question 7 make sense to you?**
  o  Yes
  o  No

Is there anything you would change about Question 7? If yes, please describe below.
  o  No
  o  Yes _________________

**Question 8**
I have been successful in improving my parenting but I’m not sure I can keep up the effort on my own.

**Does Question 8 make sense to you?**
  o  Yes
  o  No

Is there anything you would change about Question 8? If yes, please describe below.
  o  No
  o  Yes _________________

**Question 9**
Trying to change the way I parent is pretty much a waste of time for me because it won’t change my child’s problems.

**Does Question 9 make sense to you?**
  o  Yes
  o  No

Is there anything you would change about Question 9? If yes, please describe below.
  o  No
  o  Yes _________________
Question 10
I’ve been thinking about changing the way I parent my child.

Does Question 10 make sense to you?
○ Yes
○ No

Is there anything you would change about Question 10? If yes, please describe below.
○ No
○ Yes ______________________

Question 11
I am finally working on my parenting.

Does Question 11 make sense to you?
○ Yes
○ No

Is there anything you would change about Question 11? If yes, please describe below.
○ No
○ Yes ______________________

Question 12
I’m not following through with positive parenting as well as I had hoped, and I want to make sure I don’t slip back into old habits.

Does Question 12 make sense to you?
○ Yes
○ No

Is there anything you would change about Question 12? If yes, please describe below.
○ No
○ Yes ______________________

Question 13
I guess I have faults as a parent, but there’s nothing that I really need to change.

Does Question 13 make sense to you?
○ Yes
Is there anything you would change about Question 13? If yes, please describe below.

- No
- Yes ______________________

**Question 14**
I wish I had more ideas on how to be a better parent.

**Does Question 14 make sense to you?**
- Yes
- No

Is there anything you would change about Question 14? If yes, please describe below.

- No
- Yes ______________________

**Question 15**
At times it is difficult to be a good parent, but I’m working on it.

**Does Question 15 make sense to you?**
- Yes
- No

Is there anything you would change about Question 15? If yes, please describe below.

- No
- Yes ______________________

**Question 16**
I thought once I had learned to parent in a positive way, the problems would be solved, but sometimes I still find myself slipping back into old habits.

**Does Question 16 make sense to you?**
- Yes
- No

Is there anything you would change about Question 16? If yes, please describe below.

- No
- Yes ______________________
Question 17
The way I parent may be part of the problem my child is having but I don’t really think it is.

Does Question 17 make sense to you?
- Yes
- No

Is there anything you would change about Question 17? If yes, please describe below.
- No
- Yes ______________________

Question 18
Maybe I can learn to be a better parent.

Does Question 18 make sense to you?
- Yes
- No

Is there anything you would change about Question 18? If yes, please describe below.
- No
- Yes ______________________

Thank you for your input so far - it is very important and appreciated. You are now more than half-way done!

Question 19
Even though I’m not always successful in changing the way I parent, I am at least working on it.

Does Question 19 make sense to you?
- Yes
- No

Is there anything you would change about Question 19? If yes, please describe below.
- No
- Yes ______________________

Question 20
I may need a boost right now to help me maintain the changes I’ve already made in the way I parent my child.
Does Question 20 make sense to you?
- Yes
- No

Is there anything you would change about Question 20? If yes, please describe below.
- No
- Yes ______________________

Question 21
I have worries about my parenting but so does every parent. Why spend time thinking about them?

Does Question 21 make sense to you?
- Yes
- No

Is there anything you would change about Question 21? If yes, please describe below.
- No
- Yes ______________________

Question 22
I hope that I can get help to be a better parent.

Does Question 22 make sense to you?
- Yes
- No

Is there anything you would change about Question 22? If yes, please describe below.
- No
- Yes ______________________

Question 23
I have started working my parenting but I would like help.

Does Question 23 make sense to you?
- Yes
- No

Is there anything you would change about Question 23? If yes, please describe below.
- No
Question 24
I need to prevent myself from slipping back into ineffective parenting habits.

Does Question 24 make sense to you?
- Yes
- No

Is there anything you would change about Question 24? If yes, please describe below.
- No
- Yes ______________________

Question 25
I need to prevent myself from slipping back into ineffective parenting habits.

Does Question 25 make sense to you?
- Yes
- No

Is there anything you would change about Question 25? If yes, please describe below.
- No
- Yes ______________________

Question 26
I have parenting challenges and I really think I should work on them.

Does Question 26 make sense to you?
- Yes
- No

Is there anything you would change about Question 26? If yes, please describe below.
- No
- Yes ______________________

Question 27
Anyone can talk about changing the way they parent; I’m actually doing something about it.

Does Question 27 make sense to you?
- Yes
Is there anything you would change about Question 27? If yes, please describe below.
- No
- Yes ______________________

Question 28
I feel frustrated that I might be slipping back into ineffective parenting habits.

Does Question 28 make sense to you?
- Yes
- No

Is there anything you would change about Question 28? If yes, please describe below.
- No
- Yes ______________________

Question 29
It would be a waste of time to try to learn about how to be a better parent.

Does Question 29 make sense to you?
- Yes
- No

Is there anything you would change about Question 29? If yes, please describe below.
- No
- Yes ______________________

Question 30
I think I need to find out how to be a better parent.

Does Question 30 make sense to you?
- Yes
- No

Is there anything you would change about Question 30? If yes, please describe below.
- No
- Yes ______________________
Question 31
I am actively working to become a better parent.

Does Question 31 make sense to you?
- Yes
- No

Is there anything you would change about Question 31? If yes, please describe below.
- No
- Yes ______________________

Question 32
When I feel stuck in parenting I try to remember the new things I have learned about parenting.

Does Question 32 make sense to you?
- Yes
- No

Is there anything you would change about Question 32? If yes, please describe below.
- No
- Yes ______________________

Question 33
Parenting programs are only useful for people who are having major problems with parenting, not me.

Does Question 33 make sense to you?
- Yes
- No

Is there anything you would change about Question 33? If yes, please describe below.
- No
- Yes ______________________

Question 34
I think that some advice on parenting would be helpful.

Does Question 34 make sense to you?
- Yes
Is there anything you would change about Question 34? If yes, please describe below.
   o No
   o Yes ______________________

**Question 35**
I am trying out new ways to parent.

Does Question 35 make sense to you?
   o Yes
   o No

Is there anything you would change about Question 35? If yes, please describe below.
   o No
   o Yes ______________________

**Question 36**
I try to find ways to use the parenting tips I’ve learned in new situations with my children.

Is there anything you would change about Question 36? If yes, please describe below.
   o Yes
   o No

Is there anything you would change about Question 36? If yes, please describe below.
   o No
   o Yes ______________________

**Question 37**
I would rather accept I am not a perfect parent than try to change the way I parent my child.

Does Question 37 make sense to you?
   o Yes
   o No

Is there anything you would change about Question 37? If yes, please describe below.
   o No
   o Yes ______________________
Question 38
I’d like to change some things about the way I parent.

Does Question 38 make sense to you?
- Yes
- No

Is there anything you would change about Question 38? If yes, please describe below.
- No
- Yes ______________________

Question 39
I’ve been making an effort to learn things that will help me be the best parent I can be.

Does Question 39 make sense to you?
- Yes
- No

Is there anything you would change about Question 39? If yes, please describe below.
- No
- Yes ______________________

Question 40
I’ve learned a lot about becoming a better parent and I want to keep learning more.

Does Question 40 make sense to you?
- Yes
- No

Is there anything you would change about Question 40? If yes, please describe below.
- No
- Yes ______________________

Do you have any general comments about the survey?

Overall what was your reaction to the survey? (Check any that apply)
- Confused, I did not understand the questions
- Interested, as they made me think about the way I parent
- Upset, it seemed to suggest I need to change
○ Bored, it seemed really long
○ Other (please specify) ______________________

Thank you very kindly for taking your time to provide feedback on the ARC-PB, we appreciate it very much. You have contributed to a new measure that will help parents get the right parenting supports.
### Manuiscript One Study Two Results in Annotated Table

<table>
<thead>
<tr>
<th>Item</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>As far as I’m concerned, I don’t need to change the way I parent.</td>
<td></td>
</tr>
<tr>
<td>I think I might be ready to find ways to improve my parenting.</td>
<td>I think I might be ready to find ways to improve my parenting skills.</td>
</tr>
<tr>
<td>I think I might be ready to find some new parenting tips or strategies.</td>
<td>I think I might be ready to find some new parenting tips or strategies.</td>
</tr>
<tr>
<td>I am really working hard to change the way I parent.</td>
<td>I am working hard to change the way I parent. I am really working hard to find new parenting strategies and tips.</td>
</tr>
<tr>
<td>I have worked hard to be a better parent to help my child but every now and then, I slip into old habits so I need help to stay on track.</td>
<td></td>
</tr>
<tr>
<td>I don’t need an expert telling me how to parent my children</td>
<td>I am not looking for any help with parenting.</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>I’m hoping I can get help to be a better parent.</td>
<td></td>
</tr>
<tr>
<td>I am concerned about the way I parent and am doing something to be a better parent.</td>
<td>2 parts that could be answered separately. Will there be room to describe what “doing something” looks like?</td>
</tr>
<tr>
<td>I have been successful in improving my parenting but I’m not sure I can keep up the effort on my own.</td>
<td>2 parts that could be answered separately</td>
</tr>
<tr>
<td>Trying to change the way I parent is pretty much a waste of time for me because it won’t change my child’s problems.</td>
<td></td>
</tr>
<tr>
<td>I’ve been thinking about changing the way I parent my child.</td>
<td></td>
</tr>
<tr>
<td>I am finally working on my parenting.</td>
<td>I am finally working on improving my parenting skills.</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>I’m not following through with positive parenting as well as I had hoped, and I want to make sure I don’t slip back into old habits.</td>
<td></td>
</tr>
<tr>
<td>I guess I have faults as a parent, but there’s nothing that I really need to change.</td>
<td>I guess I have challenges as a parent, but there's nothing that I really need to change.</td>
</tr>
<tr>
<td>I wish I had more ideas on how to be a better parent.</td>
<td></td>
</tr>
<tr>
<td>At times it is difficult to be a good parent, but I’m working on it.</td>
<td></td>
</tr>
<tr>
<td>I thought once I had learned to parent in a positive way, the problems would be solved, but sometimes I still find myself slipping back into old habits.</td>
<td></td>
</tr>
<tr>
<td>The way I parent may be part of the problem my child is having but I don’t really think it is.</td>
<td>My Parenting skills may be part of the problem my child....</td>
</tr>
</tbody>
</table>
Maybe I can learn to be a better parent.

Even though I’m not always successful in changing the way I parent, I am at least working on it.

I may need a boost right now to help me maintain the changes I’ve already made in the way I parent my child.

I have worries about my parenting but so does every parent. Why spend time thinking about them?

I hope that I can get help to be a better parent.

I have started working my parenting but I would like help.
<table>
<thead>
<tr>
<th>I need to prevent myself from slipping back into ineffective parenting habits.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would rather accept that my child is not perfect than try to change the way I parent.</td>
</tr>
<tr>
<td>I have parenting challenges and I really think I should work on them.</td>
</tr>
<tr>
<td>Anyone can talk about changing the way they parent; I’m actually doing something about it.</td>
</tr>
<tr>
<td>I feel frustrated that I might be slipping back into ineffective parenting habits.</td>
</tr>
<tr>
<td>It would be a waste of time to try to learn about how to be a better parent.</td>
</tr>
<tr>
<td>I think I need to find out how to be a better parent.</td>
</tr>
<tr>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>I am actively working to become a better parent.</td>
</tr>
<tr>
<td>When I feel stuck in parenting I try to remember the new things I have learned about parenting.</td>
</tr>
<tr>
<td>Parenting programs are only useful for people who are having major problems with parenting, not me.</td>
</tr>
<tr>
<td>I think that some advice on parenting would be helpful.</td>
</tr>
<tr>
<td>I am trying out new ways to parent.</td>
</tr>
<tr>
<td>I try to find ways to use the parenting tips I’ve learned in new situations with my children.</td>
</tr>
<tr>
<td>I would rather accept I am not a perfect parent than try to change the way I parent my child.</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>I’d like to change some things about the way I parent</td>
</tr>
<tr>
<td>I’ve been making an effort to learn things that will help me be the best parent I can be.</td>
</tr>
<tr>
<td>I’ve learned a lot about becoming a better parent and I want to keep learning more.</td>
</tr>
</tbody>
</table>
Appendix G

*Consent Form and Questions Used in Manuscript One Study Three*

---

**CONSENT FORM**

**Who is conducting this study?**

Jeffrey Perron, MBA, School of Psychology University of Ottawa, 136 Jean-Jacques Lussier, Ottawa, ON K1N 6N5 562-5800 x7140.

Catherine M Lee, PhD, C. Psych, School of Psychology University of Ottawa, 136 Jean-Jacques Lussier, Ottawa, ON K1N 6N5 562-5800 x4525.

**Introduction**

Thank you for considering taking part. This is an independent study conducted by Jeffrey Perron, a Doctoral student at the University of Ottawa, under the supervision of Dr. Catherine Lee. Before you agree to participate in this study, we would like to explain, why we are doing the study, what it will involve, and the benefits associated with the study.

**Why are we doing this study?**

We have made a new questionnaire to help us understand thoughts about changing parenting behaviours. We are seeing how answers to the questionnaire compare to answers on other questionnaires. It will take you about 20 minutes to complete the study. If you agree to participate, you will be asked to complete the questionnaire along with some other questions related to parenting. First Come, First Served Please note that we are seeking a limited number of participants. Once we have the required number of participants we will close the survey.

**Risks and benefits**

Participation in this study involves no physical or mental discomfort, and no risks beyond those of everyday living. If, however, you find any question distressing or invasive, you are free to not answer it. There is no direct benefit to you of participating in this survey. A potential indirect benefit, however, is that you may experience a sense of satisfaction by helping us create a questionnaire that will help parents who use parenting services. It is also possible that completing the survey will help you better understand your own thoughts and feelings about parenting.
Your rights

Participation in this study is completely voluntary and you can withdraw at any time without any effect on the care or services you or your family receive. Also note that no staff from the organization where you first learned about this survey will have access to any information you give through this survey. This study is being conducted independently from the organization where you learned about this study. In fact, staff at the organization will have no way of knowing whether or not you even completed the survey. If you decide to withdraw from the study, all of your responses will be anonymous. We will not know your name or any of your identifying information. You may withdraw from the study at any time.

Publication of findings

When the results of this study are published or presented at conferences, seminars, in a Doctoral thesis, or other public forms, no individual information or information that could identify you will be released. Following completion of the study (after publication) all data will be stored on the secure University of Ottawa server for a period of 5 years. After this five year period, the data will be destroyed.

Questions

If at any point you have any questions about the survey you may contact Jeffrey Perron or Dr. Catherine Lee, whose contact information is listed above.

Ethics

If you have any questions, you may contact one of the researchers listed above. If you have any questions regarding the ethical conduct of this study, you may contact the Office of Research Ethics and Integrity, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 154, Ottawa, Ontario, K1N 6N5, ethics@uottawa.ca.
Consent to participate in this study

I acknowledge that the research study described above has been explained to me through this information form. I have been informed of my right to choose not to participate in the study. I also understand the indirect benefits of participating in the research study. I know that I may ask now or in the future any questions I have about the study or research procedures. I have been assured that my responses will remain anonymous. By clicking next, I agree to participate in this study and acknowledge that I can print a copy of this page for my own records.

Tell us a bit about yourself...

What is your gender?
○ Male
○ Female

How many children do you have?
○ 1
○ 2
○ 3
○ 4
○ 5
○ 6
○ 7
○ 8
○ More than 8

What is the age of your youngest child?
○ 0-12 months
○ 1
○ 2
○ 3
○ 4
○ 5
○ 6
○ 7
○ 8
○ 9
○ 10
○ 11
○ 12
How old are you?
- 19-24
- 25-29
- 30-34
- 35-39
- 40-44
- 45-49
- 50-54
- 55 or above

What is your family’s annual income (select one)?
- 0-10,000
- 10,001-30,000
- 30,001-50,000
- 50,001-70,000
- 70,001-90,000
- 90,001-150,000
- Over 150,000

Which province do you call home?
- Alberta
- Ontario
- Saskatchewan

Are you involved with parenting programs?
- I’m not currently looking to do any kind of parenting program
- I am on a wait list for a parenting program
- I am currently taking part in a parenting program
- I have already completed a parenting program in the past

Which services for your child have you used in the past year (select all that apply)?
- Vaccination clinics for your child
- Regular doctor check-ups for your child
- Parenting classes or programs
Each statement on the following pages describes how a parent might think about parenting. Please indicate the extent to which you agree or disagree with each statement. Answer based on how you feel right now.

There are five possible responses to each of the items in the questionnaire: 1 = Strongly Disagree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = Strongly Agree.

Please click next.

As far as I’m concerned, I don’t need to change the way I parent.
- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

I think I might be ready to find ways to improve my parenting.
- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

I am working hard to learn new ways to parent.
- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

I have worked hard to be a better parent, but every now and then, I slip into old habits so I need help to stay on track.
- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree
I don’t need an expert telling me how to parent my children.
  o  Strongly Disagree
  o  Disagree
  o  Undecided
  o  Agree
  o  Strongly Agree

I’m hoping I can get help to be a better parent.
  o  Strongly Disagree
  o  Disagree
  o  Undecided
  o  Agree
  o  Strongly Agree

Trying to change the way I parent is pretty much a waste of time for me because it won’t change my child’s behaviour.
  o  Strongly Disagree
  o  Disagree
  o  Undecided
  o  Agree
  o  Strongly Agree

I’ve been thinking about changing the way I parent.
  o  Strongly Disagree
  o  Disagree
  o  Undecided
  o  Agree
  o  Strongly Agree

I am finally working on the way I parent.
  o  Strongly Disagree
  o  Disagree
  o  Undecided
  o  Agree
  o  Strongly Agree

I’m not following through with the way I parent as well as I had hoped, and I want to make sure I don’t slip back into old habits.
  o  Strongly Disagree
I guess I have challenges as a parent, but there’s nothing that I really need to change.

I wish I had more ideas on how to be a better parent.

At times it is difficult to be a good parent, but I’m working on it.

I thought once I had learned to parent in a positive way, the problems would be solved, but sometimes I still find myself slipping back into old habits.

Maybe I can learn to be a better parent.
Even though I’m not always successful in changing the way I parent, I am at least working on it.

- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

I may need a boost right now to help me maintain the changes I’ve already made in the way I parent my child.

- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

I have worries about the way I parent but so does every parent. Why spend time thinking about it?

- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

I have started working on the way I parent but I could use some help.

- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

I need to prevent myself from slipping back into my old ways of parenting.

- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree
I would rather accept that my child is not perfect than change the way I parent.
- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

I have parenting challenges and I really think I should work on them.
- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

Sometimes I feel like I might be slipping back into my old ways of parenting.
- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

It would be a waste of time to try to learn about better ways to parent.
- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

I am actively working to become a better parent.
- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

Parenting programs are only useful for people who are having major problems with parenting, not me.
- Strongly Disagree
- Disagree
I think some advice on parenting would be helpful.
- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

I am trying out new ways to parent.
- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

I try to find ways to use the parenting tips I’ve learned in new situations with my children.
- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

I'd like to change some things about the way I parent.
- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

I’ve been making an effort to learn things that will help me be the best parent I can be.
- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree
I’ve learned a lot about becoming a better parent and I want to keep learning more.
- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

The next 4 questions are "yes or no" questions about new ways of parenting.

I don’t think that I will try to improve my parenting in the next 6 months.

Yes ☐ No ☐

I want to learn new ways of parenting in the next 6 months.

Yes ☐ No ☐

I am learning new ways of parenting and want to keep learning about parenting.

Yes ☐ No ☐

In the past 6 months I have started to use new ways of parenting.

Yes ☐ No ☐

You’re almost done! Thank you for your input so far. In this next section, please read each statement and select a statement that indicates how true the behaviour was of your child over the past four (4) weeks. There are no right or wrong answers. Do not spend too much time on any statement.

My child:

Gets upset or angry when they don’t get their own way.
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

Refuses to do jobs around the house when asked.
- Not true of my child at all
- True of my child a little, or some of the time
True of my child quite a lot, or a good part of the time
True of my child very much, or most of the time

Worries.
Not true of my child at all
True of my child a little, or some of the time
True of my child quite a lot, or a good part of the time
True of my child very much, or most of the time

Loses their temper.
Not true of my child at all
True of my child a little, or some of the time
True of my child quite a lot, or a good part of the time
True of my child very much, or most of the time

Misbehaves at mealtime.
Not true of my child at all
True of my child a little, or some of the time
True of my child quite a lot, or a good part of the time
True of my child very much, or most of the time

Argues or fights with other children, brothers or sisters.
Not true of my child at all
True of my child a little, or some of the time
True of my child quite a lot, or a good part of the time
True of my child very much, or most of the time

Refuses to eat food made for them.
Not true of my child at all
True of my child a little, or some of the time
True of my child quite a lot, or a good part of the time
True of my child very much, or most of the time

Takes too long getting dressed.
Not true of my child at all
True of my child a little, or some of the time
True of my child quite a lot, or a good part of the time
True of my child very much, or most of the time
Hurts me or others (e.g., hits, pushes, scratches, bites).
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

Interrupts when I am speaking to others.
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

Seems fearful or scared.
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

Misbehaves at school or daycare.
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

Has trouble keeping busy without adult attention.
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

Yells, shouts, or screams.
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

Whines or complains (whinges).
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
True of my child very much, or most of the time

Acts defiant when asked to do something.
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

Cries more than other children their age.
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

Rudely answers back to me.
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

Seems unhappy or scared.
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

Has trouble organizing tasks or activities.
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

Follows rules and limits.
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

Gets on well with family members.
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

**Is kind and helpful to others.**
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

**Can keep busy without constant adult attention.**
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

**Cooperates at bedtimes.**
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

**Seems to feel good about themselves.**
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

**Gets on well with other children.**
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

**Talks about their views, ideas and needs appropriately.**
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time
Can do age appropriate tasks by themselves.
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

Does what they are told to do my adults.
- Not true of my child at all
- True of my child a little, or some of the time
- True of my child quite a lot, or a good part of the time
- True of my child very much, or most of the time

On a scale from 1-10 (where 1 = certain I can’t do it; 10 = certain I can do it), what is your overall level of confidence to deal with your child’s behavioural or emotional problems (even if they don’t have these problems very often)?
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
At one time or another, all children misbehave or do things that could be harmful, are "wrong," or that parents don't like. Examples include: hitting someone, forgetting homework, having a tantrum, whining, throwing food, lying, arguing back, not picking up things, refusing to go to bed, coming home late. Parents have many different ways or styles of dealing with these types of problems. Below are items that describe some styles of parenting.

For each item, fill in the bubble that best describes your style of parenting during the **PAST TWO MONTHS**

*Example:*

At meal time...

\[
\begin{array}{l}
I \text{ let my child decide how much to eat} \\
\text{I decide how much my child eats}
\end{array}
\]

**IN THE PAST TWO MONTHS**

<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When my child misbehaves...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
|   | *I do something right away* |   |   |   |   |   |   | *I do something later*
| 2. Before I do something about a problem... |   |   |   |   |   |   |   |
|   | *I give my child several reminders and warnings* |   |   |   |   |   |   | *I use only one reminder or warning*
| 3. When I'm upset or under stress... |   |   |   |   |   |   |   |
|   | *I am picky and on my child's back* |   |   |   |   |   |   | *I am not more picky than usual*
| 4. When I tell my child NOT to do something... |   |   |   |   |   |   |   |
|   | *I say very little* |   |   |   |   |   |   | *I say a lot*
| 5. When my child pesters me... |   |   |   |   |   |   |   |
|   | *I can ignore the pestering* |   |   |   |   |   |   | *I can't ignore the pestering*
<table>
<thead>
<tr>
<th></th>
<th>Question</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>When my child misbehaves...</td>
<td>I usually get into a long argument with my child I don’t get into an argument</td>
</tr>
<tr>
<td>7.</td>
<td>I threaten to do things that...</td>
<td>I’m sure I can carry out I know I won't actually do</td>
</tr>
<tr>
<td>8.</td>
<td>I am the kind of parent that...</td>
<td>Sets limits on what my child is allowed to do Lets my child do whatever he/she wants</td>
</tr>
<tr>
<td>9.</td>
<td>When my child misbehaves...</td>
<td>I give my child a long lecture I keep my talks short and to the point</td>
</tr>
<tr>
<td>10.</td>
<td>When my child misbehaves...</td>
<td>I raise my voice or yell I speak to my child calmly</td>
</tr>
<tr>
<td>11.</td>
<td>If saying no doesn’t work right away...</td>
<td>I take some other kind of Action I keep talking and try to get through to my child</td>
</tr>
<tr>
<td>12.</td>
<td>When I want my child to stop doing something...</td>
<td>I firmly tell my child to stop I coax or beg my child to stop</td>
</tr>
<tr>
<td>13.</td>
<td>When my child is out of sight...</td>
<td>I often don’t know what my child is doing I always have a good idea of what my child is doing</td>
</tr>
<tr>
<td>14.</td>
<td>After there’s been a problem with my child...</td>
<td>I often hold a grudge Things get back to normal quickly</td>
</tr>
<tr>
<td>15.</td>
<td>When we’re not at home...</td>
<td>I handle my child the way I do at home I let my child get away with a lot more</td>
</tr>
<tr>
<td>Question</td>
<td>Option 1</td>
<td>Option 2</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>16. When my child does something I don't like...</td>
<td><em>I do something about it every time</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. When there is a problem with my child...</td>
<td><em>Things build up and I do things</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>I don't mean to do</em></td>
<td></td>
</tr>
<tr>
<td>18. When my child misbehaves I spank, slap, grab, or hit my child...</td>
<td><em>Never or rarely</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. When my child doesn't do what I ask...</td>
<td><em>I often let it go or end up doing it myself</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. When I give a fair threat or warning...</td>
<td><em>I often don't carry it out</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. If saying &quot;no&quot; doesn't work...</td>
<td><em>I take some other kind of action</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. When my child misbehaves...</td>
<td><em>I handle it without getting upset</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. When my child misbehaves...</td>
<td><em>I make my child tell me why</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
24. If my child misbehaves and then acts sorry...

- *I handle the problem like I usually would*  
  - ○ ○ ○ ○ ○ ○ ○  
  - *I let it go that time*

25. When my child misbehaves...

- *I rarely use bad language or curse*  
  - ○ ○ ○ ○ ○ ○ ○  
  - *I almost always use bad language*

26. When I say my child can't do something...

- *I let my child do it anyway*  
  - ○ ○ ○ ○ ○ ○ ○  
  - *I stick to what I said*

27. When I have to handle a problem...

- *I tell my child I'm sorry*  
  - ○ ○ ○ ○ ○ ○ ○  
  - *I don't say I'm sorry*

28. When my child does something I don't like, I insult my child, say mean things, or call my child names...

- *Never or rarely*  
  - ○ ○ ○ ○ ○ ○ ○  
  - *Most of the time*

29. If my child talks back or complains when I handle a problem...

- *I ignore the complaining and stick to what I said*  
  - ○ ○ ○ ○ ○ ○ ○  
  - *I give my child a talk about not complaining*

30. If my child gets upset when I say "no"

- *I back down and give in to my child*  
  - ○ ○ ○ ○ ○ ○ ○  
  - *I stick to what I said*
For the following questions, read each item and decide whether it is true (T) or false (F) for you. Try to work rapidly and answer each question by on the T or the F.

1. Before voting I thoroughly investigate the qualifications of all the candidates.
   - True
   - False

2. I never hesitate to go out of my way to help someone in trouble.
   - True
   - False

3. It is sometimes hard for me to go on with my work if I am not encouraged.
   - True
   - False

4. I have never intensely disliked anyone.
   - True
   - False

5. On occasions I have had doubts about my ability to succeed in life.
   - True
   - False

6. T F I sometimes feel resentful when I don’t get my way.
   - True
   - False

7. I am always careful about my manner of dress.
   - True
   - False

8. My table manners at home are as good as when I eat out in a restaurant.
   - True
   - False

9. If I could get into a movie without paying and be sure I was not seen, I would probably do it.
   - True
   - False

10. On a few occasions, I have given up something because I thought too little of my ability.
    - True
    - False

11. I like to gossip at times.
    - True
• False

12. There have been times when I felt like rebelling against people in authority even though I knew they were right.
  • True
  • False

13. No matter who I’m talking to, I’m always a good listener.
  • True
  • False

14. I can remember “playing sick” to get out of something
  • True
  • False

15. There have been occasions when I have taken advantage of someone.
  • True
  • False

16. I’m always willing to admit it when I make a mistake.
  • True
  • False

17. I always try to practice what I preach.
  • True
  • False

18. I don’t find it particularly difficult to get along with loudmouthed, obnoxious people.
  • True
  • False

19. I sometimes try to get even rather than forgive and forget.
  • True
  • False

20. When I don’t know something I don’t mind at all admitting it.
  • True
  • False

21. I am always courteous, even to people who are disagreeable.
  • True
  • False
22. At times I have really insisted on having things my own way.
   • True
   • False

23. There have been occasions when I felt like smashing things.
   • True
   • False

24. I would never think of letting someone else be punished for my wrong-doings.
   • True
   • False

25. I never resent being asked to return a favor.
   • True
   • False

26. I have never been irked when people expressed ideas very different from my own.
   • True
   • False

27. I never make a long trip without checking the safety of my car.
   • True
   • False

28. There have been times when I was quite jealous of the good fortune of others.
   • True
   • False

29. I have almost never felt the urge to tell someone off.
   • True
   • False

30. I am sometimes irritated by people who ask favors of me.
   • True
   • False

31. I have never felt that I was punished without cause.
   • True
   • False

32. I sometimes think when people have a misfortune they only got what they deserved.
   • True
   • False

33. I have never deliberately said something that hurt someone’s feelings.
- True
- False
Appendix H

Consent Form and Questions Used in Manuscript Two Study One

Who is conducting this study?
Jeffrey Perron, MBA, School of Psychology University of Ottawa, 136 Jean-Jacques Lussier, Ottawa, ON K1N 6N13-562-5800 x7140.

Catherine M. Lee, PhD, C. Psych, School of Psychology University of Ottawa, 136 Jean-Jacques Lussier, Ottawa, ON K1N 6N13-562-5800 x4525.

Introduction
Thank you for considering taking part in this study being conducted by Jeffrey Perron, as part of his doctoral dissertation at the University of Ottawa, under the supervision of Dr. Catherine M. Lee. Before you agree to participate in this study, we would like to explain why we are doing the study, what it will involve, and the benefits associated with the study.

Why are we doing this study?
We have made a new questionnaire to help us understand thoughts about changing parenting behaviours. We are interested in learning about how readiness to change parenting is associated with child behavioural and emotional problems, parenting behaviours themselves, involvement in parenting-related programs and services, and plans to learn new parenting behaviours. To do this we will compare answers to various questions asked in this study. If you agree to take part, we estimate it will take you about 5 minutes to complete the questionnaires.

First Come, First Served
Please note that we are seeking a limited number of participants. Once we have the required number of participants we will close the survey.

Confidentiality and Anonymity
Participation in this study is completely confidential. No identifying data will be collected. Also note that no staff from the organization where you learned about the survey will have access to any information you give through this survey.

All online survey data will be stored on the secure Qualtrics (the organization who maintains the website this survey is hosted on) servers until such time as they can be transferred to a secure computer sever at the University of Ottawa. After responses are transferred to a secure computer, all data stored on Qualtrics servers will be destroyed.
Risks and benefits

Participation in this study involves no physical or mental discomfort, and no risks beyond those of everyday living. If, however, you find any question distressing or invasive, you are free to not answer it.

There are no direct benefits to participation in this study. A potential indirect benefit, however, is that you may experience a sense of satisfaction by helping us create a questionnaire that will help parents who use parenting services. The questionnaire may also be useful in helping us understand whether parenting services are actually helping parents. It is also possible that completing the survey will help you better understand your own thoughts and feelings about parenting.

Voluntary participation

Participation in this study is completely voluntary and you can withdraw at any time without any effect on the care or services you or your family receive at the organization where you learned about the survey. If you decide to withdraw from the study, no one will know because all of your responses will be anonymous. We will not know your name or any of your identifying information. You may withdraw from the study at any time by choosing to stop answering questions. Note that because your information is anonymous, we can’t retrieve any answers you submit prior to withdrawing.

Publication of findings

When the results of this study are published or presented at conferences, seminars, in a doctoral thesis, or other public forms, no individual information or information that could identify you will be released given that we are not collecting any identifying information. All data will be stored in a secure manner on University of Ottawa server until 5 years after the publication of findings. After this five-year period, the data will be destroyed.

Questions

If at any point you have any questions about the survey you may contact Jeffrey Perron or Dr. Catherine M. Lee, whose contact information is listed above.

Ethics

If you have any questions, you may contact one of the researchers listed above. If you have any questions regarding the ethical conduct of this study, you may contact the Office of Research Ethics and Integrity, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 154, Ottawa, Ontario, K1N 6N5, ethics@uottawa.ca.
Consent to participate in this study

I acknowledge that the research study described above has been explained to me through this information form. I have been informed of my right to choose not to participate in the study. I also understand the indirect benefits of participating in the research study. I know that I may ask now or in the future any questions I have about the study or research procedures. I have been assured that my responses will remain anonymous. By proceeding, I agree to participate in this study and acknowledge that I can print a copy of this page for my own records.

Tell us a bit about yourself...

What is your gender?
- Male
- Female
- You don’t have an option that applies to me. I identify as (please specify) ____.

How many children do you have?
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- More than 8

Do you have a child aged 2-12?
- Yes
- No

For this survey, please select one of your children aged 2-12. What is the age of that child?
- 2
- 3
- 4
- 5
- 6
- 7
- 8
For the child you have in mind, please indicate the child’s gender:
- Male
- Female
- Other

How would you describe your marital status?
- Married
- Single
- Divorced
- Separated
- Widowed

What is the highest level of education you have graduated from?
- Elementary/middle school
- High school
- College or trade school
- University (undergraduate degree)
- University (graduate degree)

Where were you born?
- In Canada
- Outside of Canada

Do you have children older than 12?
- Yes
- No

How old are you?
- 19-24
- 25-29
- 30-34
- 35-39
- 40-44
- 45-49
- 50-54
- 55 or above
What is your family’s annual income (select one)?
- 0-10,000
- 10,001-30,000
- 30,001-50,000
- 50,001-70,000
- 70,001-90,000
- 90,001-150,000
- Over 150,000

Are you involved with parenting programs?
- I’m not currently looking to do any kind of parenting program
- I am on a wait list for a parenting program
- I am currently taking part in a parenting program
- I have already completed a parenting program in the past

Parent Assessment of Readiness to Change (PARC)

Each statement on the following pages describes how a parent might think about parenting. Please indicate the extent to which you agree or disagree with each statement. Answer based on how you feel right now.

There are five possible responses to each of the items in the questionnaire:
1 = Strongly Disagree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = Strongly Agree.

As far as I’m concerned, I don’t need to change the way I parent.
- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

I am working hard to learn new ways to parent.
- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree
I don’t need an expert telling me how to parent my children.
  o Strongly Disagree
  o Disagree
  o Undecided
  o Agree
  o Strongly Agree

I'm hoping I can get help to be a better parent.
  o Strongly Disagree
  o Disagree
  o Undecided
  o Agree
  o Strongly Agree

Trying to change the way I parent is pretty much a waste of time for me because it won’t change my child’s behaviour.
  o Strongly Disagree
  o Disagree
  o Undecided
  o Agree
  o Strongly Agree

I’ve been thinking about changing the way I parent.
  o Strongly Disagree
  o Disagree
  o Undecided
  o Agree
  o Strongly Agree

I am finally working on the way I parent.
  o Strongly Disagree
  o Disagree
  o Undecided
  o Agree
  o Strongly Agree

I’m not following through with the way I parent as well as I had hoped, and I want to make sure I don’t slip back into old habits.
  o Strongly Disagree
  o Disagree
I thought once I had learned to parent in a positive way, the problems would be solved, but sometimes I still find myself slipping back into old habits.

Maybe I can learn to be a better parent.

Even though I’m not always successful in changing the way I parent, I am at least working on it.

I may need a boost right now to help me maintain the changes I’ve already made in the way I parent my child.

I have started working on the way I parent but I could use some help.
Strongly Agree

I need to prevent myself from slipping back into my old ways of parenting.
• Strongly Disagree
• Disagree
• Undecided
• Agree
• Strongly Agree

I would rather accept that my child is not perfect than change the way I parent.
• Strongly Disagree
• Disagree
• Undecided
• Agree
• Strongly Agree

I have parenting challenges and I really think I should work on them.
• Strongly Disagree
• Disagree
• Undecided
• Agree
• Strongly Agree

Sometimes I feel like I might be slipping back into my old ways of parenting.
• Strongly Disagree
• Disagree
• Undecided
• Agree
• Strongly Agree

It would be a waste of time to try to learn about better ways to parent.
• Strongly Disagree
• Disagree
• Undecided
• Agree
• Strongly Agree

I am trying out new ways to parent.
• Strongly Disagree
• Disagree
I’d like to change some things about the way I parent.
- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

Readiness to change parenting behaviours staging algorithm

The next 4 questions are "yes or no" questions about new ways of parenting.

I don’t think that I will try to improve my parenting in the next 6 months.
Yes ☐ No ☐

I want to learn new ways of parenting in the next 6 months.
Yes ☐ No ☐

I am learning new ways of parenting and want to keep learning about parenting.
Yes ☐ No ☐

In the past 6 months I have started to use new ways of parenting.
Yes ☐ No ☐