Psychopathology of Youth in Custody and Detention: The Impact of Socialization of Emotion

by

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This study profiled the mental health needs of youth incarcerated in southern Ontario. The objectives were three-fold. 1) To demonstrate that incarcerated youth endorsed more externalizing than internalizing difficulties on a self-report measure of psychopathology. 2) To demonstrate that incarcerated youth had cognitive vulnerabilities consistent with anxiety and depression, despite their general lack of overt endorsement of internalizing symptoms. 3) To demonstrate that socialization practices in the home and community predicted the endorsement of psychopathology, and to provide a possible explanation for this relationship by considering alexithymia as a mediating variable.

The Adolescent Psychopathology Scale – Short Form, Mill Hill Vocabulary Scale, Toronto Alexithymia Scale, Family Expressiveness Questionnaire, Street Codes Questionnaire, Cultural Mistrust Inventory, and a Dot Probe task were administered to 91 adolescents incarcerated in Southern Ontario. Results indicated that incarcerated youth endorsed significantly greater externalizing than internalizing symptoms. Youth demonstrated significant attentional biases toward threatening, but not depressive faces. Negative dominant socialization practices in the home predicted the endorsement of both externalizing and internalizing symptoms, and there was partial support for alexithymia.
mediating these relationships. Youth who embraced community practices that socialized violence endorsed externalizing but not internalizing difficulties. These results challenge clinicians to consider the internalizing difficulties of incarcerated youth more carefully during assessment.
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This research emerged from my role as a psychology student in a youth justice facility located in southern Ontario, where the majority of clients were referred to psychology because of concerns with externalizing behavior. During the intake interviews, youth described aggressive exploits and charges. The schools spoke of truancy, provided lists of the times suspended, and described the various behavioral classroom appointments. The parents noted that the child had always been “a good boy,” who got involved with a delinquent peer group. The obvious diagnostic conclusions were drawn: Conduct Disorder, Oppositional Defiant Disorder, and Attention Deficit Hyperactivity Disorder. Sometimes there was cursory mention of contextual factors included in the “relevant background” section of clinical reports. However, this information was rarely incorporated in diagnostic conclusions. A child psychiatrist in one of the institutions that I worked once explained to me that “etiology does not matter when diagnosing disruptive disorders.”

However, perhaps etiology and context do matter. A closer look at contextual factors might yield valuable clinical information, which can enhance case conceptualization, lead to different diagnostic conclusions, and change the course of treatment for youth in the justice system. For example, these youths’ histories suggest that they should have difficulty with mood and anxiety. Many live in abject poverty, “daddy” and “baby daddy” issues abound, parental monitoring is poor, discipline tends to be harsh and punitive, physical and sexual abuse is not uncommon, and many youth experienced extended periods of separation from caregivers at early ages. Themes of rejection and abandonment are pervasive. I was often amazed that despite these themes, only aggressive behavior tended to be endorsed. Not that aggressive behavior is
insignificant, but the experiences that many incarcerated youth have encountered would make most people depressed and anxious. However, these latter issues were summarily dismissed by both the clients and clinicians. A simple “no” response to oral and/or written statements like: “Sometimes I feel like crying,” quickly shuts off that area of exploration in assessment and treatment. But, what if these youth have internalizing problems, which are just expressed differently, or not at all, because of socialization practices? Perhaps aggression is the most culturally acceptable means of expressing distress, and these youth are rarely given the opportunity to express sadness, shame, guilt, and embarrassment in their homes and communities. A case study drawn from my clinical work will illustrate that internalizing difficulties are more readily observable when consideration is given to cultural experiences.

Marcus is a 17 year old, Afro-Caribbean male, who was incarcerated in a youth justice facility in Southern Ontario for attempted murder. He was referred for therapy because of concerns with violence, aggression, delinquency, and substance use. He was previously diagnosed with Attention Deficit Hyperactivity Disorder, Conduct Disorder, and a Mild Intellectual Disability.

I worked with Marcus over a 12-month period. In our initial meetings he was distant, aloof, guarded, and occasionally attended sessions under the influence of drugs, despite living in a secure facility. He used vague language and often disregarded invitations to participate during sessions. Rather than conceptualize his early, non-communicative presentation as resistance, we discussed his culture’s discourse around expression of emotion, norms regarding communication with males, and his staunch distrust of others. Moreover, we debunked his notions that I would automatically understand his needs because we were both Afro-Caribbean males. We developed sub-culturally relevant and creative ways for him to express himself. For example, clinical sessions were held while ‘shooting hoops’.

The focus on trust and safety in the relationship illuminated painful experiences with loss, rejection, and abandonment, and elucidated Marcus’ position that the world was a dangerous and unpredictable place. He described being associated with gangs and carrying guns for his personal protection and provision, while he lived in a chronically violent neighborhood in Eastern Toronto. As our relationship grew, we had frequent discussions about his worries and repetitive
nightmares. Moreover, he often discussed being “shook” when he was allowed into the community on escorted passes or when he had court appearances. He connected this hypervigilance, which he later identified as anxiety, to the rash, violent choices that resulted in his imprisonment. In addition, Marcus noted that his drug urges tended to occur when he returned from his time spent escorted in the community, following court proceedings, or after extended periods without seeing his family members. He indicated that each of these situations engendered immense hopelessness.

Despite noting considerable experience with loss and expressing a strong sense of hopelessness, sadness was rarely communicated. That is, overt sadness was rarely expressed, and Marcus initially had no language for engaging in discussions about depressed mood. For example when discussing loss he tended to use expletives and express anger, or deny that the losses had any emotional impact at all. He acted as if he was frozen in early stages of grieving, marked by denial and anger. His only means of coping were smoking marijuana and acting aggressively.

Although Marcus’ behavior was consistent with the externalizing disorders with which he was diagnosed, seen through a cultural lens, a dramatically different formulation emerged. His externalizing symptomatology was a culturally and sub-culturally relevant means of expressing his mood and anxiety. Consequently, his anger management program was terminated, and we engaged in interpersonal therapy, aimed at demonstrating to Marcus that not every relationship was unsafe and unpredictable. Moreover, we incorporated anxiety-based CBT to address some of his fears and general worries. The program material was modified to be linguistically and culturally relevant. He also engaged in behavior activation/pleasurable activities to help reduce the depressed mood, and the use of drugs as a self-soothing strategy. Regarding the behavior activation, Marcus was the only youth in a secure facility who attended school half day in the community. He spent the other half of the day at co-op. Moreover, he fed the homeless once a week and played in a basketball league in the community.

At termination, Marcus had applied for early release and was making plans to live semi-independently, far from his old neighborhood because he did not “want to go back to the same old bullshit.”

It is against the backdrop of Marcus’ story, and several others that this research was developed. This work aims to demonstrate that incarcerated youth exclusively express externalizing symptomatology, despite having internalizing difficulties, which they do not endorse overtly. In their homes and communities, it is culturally acceptable to express externalizing, but not internalizing difficulties. That is, parents who express anger
frequently compromise their children’s ability to understand and express emotions because youth are too fearful or overwhelmed to learn from the displays of emotion. Furthermore, youth who live in violent communities view talking about emotions as weakness, and thus, they do not express how they feel, even if they have the requisite abilities. Consequently, the combined influence of socializing aggressive behaviour in the home and community contributes to incarcerated youth expressing externalizing difficulties. In contrast, those parents who model emotions like sadness and guilt allow for introspection and improve youths’ ability to decode and express such emotions. Moreover, communities that do not socialize violence allow for greater exploration and sharing of emotions with peers. Consequently, these youth are better able to express internalizing distress.

The literature review that follows is divided into three broad sections. First, the problem under investigation is identified in greater detail by exploring epidemiological data that describe the discrepancy between rates of externalizing and internalizing disorders of incarcerated youth. Second, the detection of unreported internalizing problems among youth is explored by examining attentional biases toward threatening and depressive stimuli. Since a major theme of this dissertation is that incarcerated youth have depression and anxiety but do not express these difficulties, it was prudent to address the most obvious counterargument: that incarcerated youth simply do not experience anxiety and depression. Third, the reasons why incarcerated youth do not express anxiety and depression are explored with focus given to emotion socialization practices, their impact on understanding and expression of emotion, as well as their subsequent influence on mental health.
Mental Health among Incarcerated Youth

Several epidemiological studies have provided data regarding the prevalence of mental health difficulties in youth justice facilities (Teplin, Abram, McClelland, Dulcan, Mericle, 2002; Ulzen & Hamilton, 1998). Prevalence rates suggest that externalizing disorders are common among incarcerated youth, while rates for internalizing disorders are considerably lower. A recent review suggested that prevalence rates of diagnosable psychopathology among youth in custody and detention ranged from 39% to 100% (Veysey, 2008). The most commonly diagnosed disorders in the youth justice population were externalizing disorders and substance abuse, with internalizing disorders having much lower prevalence rates.

Externalizing Disorders

With respect to externalizing disorders, Teplin et al. (2002) gave 1829 incarcerated youth in the Chicago area the Diagnostic Interview Schedule for Children (DISC), version 2.3. Results indicated that 41% of males and 45% of females met criteria for an externalizing disorder. Moreover, 51% of males and 47% of females met criteria for a substance use disorder. It is also noteworthy that Black youth consistently had lower rates of externalizing psychopathology than non-Hispanic Whites. Wasserman, McReynolds, Ko, Katz, et al. (2005) similarly gave the DISC (voice version) to 998 Texan youth at intake to probation. Results indicated that 20% of males and females met criteria for an externalizing disorder. In addition, 26% of males and 22% of females met criteria for a substance use disorder. Blacks in this study had significantly lower rates of disruptive and substance abuse disorders than non-Hispanic Whites. In one of the few Canadian studies published to date, Ulzen & Hamilton (1998) gave 49 youth,
incarcerated in the Toronto area, the Diagnostic Interview for Children and Adolescents – Revised (DICA-R). Forty percent of males and 64% of females met criteria for Oppositional Defiant Disorder, while 32% of males and 18% of females met criteria for Conduct Disorder. Moreover, 32% of males and 64% of females met criteria for substance dependence.

**Internalizing Disorders**

In the 1970s, Lewis, Shanok, Pincus, and Glaser (1979), astutely noted concerns with the validity of diagnosing externalizing disorders among incarcerated youth without due consideration for comorbid psychiatric conditions. Since that time, more effort has gone toward identifying internalizing disorders among youth in custody and detention. As a result, burgeoning evidence suggests that incarcerated youth, especially females, have difficulties with internalizing problems (Sevecke, Lehmkuhl, & Krischer, 2009; Wasserman et al., 2005).

Teplin et al. (2002) indicated that 19% of males and 28% of females met criteria for a mood disorder. Moreover, 21% of males and 31% of females met criteria for an anxiety disorder. Teplin et al. further noted that, with the exception of Separation Anxiety disorder, Black youth had lower rates of mood and anxiety than non-White Hispanics. In addition, Abram, Teplin, McCelland, and Dulcan (2003) reported that Black youth had lower rates of comorbid internalizing disorders than non-White Hispanics. Wasserman et al. (2005) indicated that 6% of males and 13% of females met criteria for a mood disorder. Seventeen percent of males and 29% of females met criteria for an anxiety disorder. Ulzen & Hamilton (1998) indicated that 8% of males, and 36% of females met criteria for depression. Moreover, 18% of males, and 55% of females met criteria for an
overanxious disorder. Bickel and Campbell (2002) used the Adolescent Psychopathology Scale to assess internalizing disorders among incarcerated youth in Tasmania, Australia. Results indicated that 26% of males and 57% of females met criteria for a major depressive disorder. In addition, 26% of males and 71% of females in the sample met criteria for an anxiety disorder, not including PTSD.

Several additional studies have examined internalizing problems among incarcerated youth without also exploring externalizing disorders. For example, Chiles, Miller, and Cox (1980) used clinical interviews and the Beck Depression Inventory to indicate that 23% of young adolescents met criteria for a major affective disorder on admission. Similarly, in a study of 100 detainees, Richards (1996) indicated that 25% of youth met criteria for a mood disorder, and 4% PTSD using a semi-structured interview. Kosky, Sawyer, and Gowland (1990) interviewed 78 youth in custody and detention, and reported that 35% of youth met criteria for depression on admission. In addition, 17% reported being anxious and 22% noted suicidal ideation. They noted that these rates were similar to youth referred to mental health clinics. Several additional studies have suggested that prevalence rates of psychopathology among incarcerated youth are consistent with rates reported among outpatient and inpatient psychiatric settings (Bickel and Campbell, 2002; Cohen, Parmelee, Irwin, Weisz, & Howard, 1990; Curry, Pelissier, Woodford, & Lochaman, 1988).

**Prevalence Rates in Community**

Although the prevalence rates for mental health disorders among incarcerated youth appear alarming in isolation, when compared to rates in the general population, they are even more dramatic. A review of 52 epidemiological studies between 1950 and
1998 indicated that median prevalence rates for psychopathology were 8% for preschoolers, 12% for school aged youth, and 15% for adolescents (Roberts, Attkinsson, & Rosenblatt, 1998). Moreover, in one of the largest epidemiological studies of mental health, Shaffer et al. (1996) assessed 13,500 youth in the community using the CBCL and the Diagnostic Interview Schedule for Children. Results indicated that 3% of the sample met criteria for conduct disorder, 6% ADHD, 4% a mood disorder, and 3% an anxiety disorder (excluding PTSD).

In the few studies that explored psychopathology among incarcerated youth that had a community comparison group, similar results were found. For example, Ulzen and Hamilton (1998) reported that in a sample of community youth living in the Toronto area, 8% met criteria for ODD, 4% Conduct Disorder, 14% Separation Anxiety, and 2% Overanxious Disorder of Childhood. None met criteria for either PTSD or alcohol dependency. Prevalence rates among incarcerated youth in this study were significantly higher for both internalizing and externalizing disorders. Similarly, Kosky, Sawyer, and Gowland (1990) indicated that prevalence rates of psychopathology for incarcerated youth were double the rates seen in community samples.

In summary, the epidemiological rates for externalizing disorders range from 20% to 41% for males, and 18% to 64% for females. Moreover, rates for mood disorders ranged from 6% to 26% for males, and between 13% and 57% for females. Rates for anxiety disorders ranged from 17% to 26% for males, and from 29% to 71% for females. Note the wide discrepancy in prevalence rates. Likely accounting for the disparity are differences in sample demographics (e.g., sex, ethnicity), geographical location, severity of offences, criminogenic of the institution (e.g., prison culture), rater (e.g., self-report,
observation, file review, parent/teacher report), measurement (e.g., questionnaire vs. interview, CBCL/APS vs. DISC-IV), and recruitment (e.g., taking every youth at intake vs. convenience sample). In addition, although Kenny and Grant (2007) demonstrated that incarcerated youth’s self-report was just as accurate as adolescents in clinical and community samples, the possibility of social desirability bias compromising accurate reporting of psychopathology also requires consideration.

Despite the limitations to generalization and the possibility that youth underreport symptomatology, overall the results from epidemiological studies suggest that youth in the justice system have high rates of conduct disorder, oppositional defiant disorder, and substance abuse, with much lower rates of depression and anxiety, particularly for males. However, both internalizing and externalizing disorders are more prevalent among incarcerated youth than community youth, and prevalence rates are more similar to youth referred for mental health treatment.

**Attentional Biases**

Since the assertion of this study is that incarcerated youth primarily express anger and aggression, while silently having feelings of sadness and worry, an obvious counter argument is that these youth do not experience these latter emotions. Certainly the epidemiological data suggests that this is not entirely the case, as there has been some variance in expression of internalizing problems in these studies. However, prevalence rates of internalizing problems continue to be much lower than externalizing disorders, and have been reported as low as 8% among incarcerated males (Ulzen & Hamilton, 1998). Consequently, to preempt the conclusion that incarcerated youth are not depressed
or anxious, further exploration of means of detecting less easily observable internalizing difficulties is necessary.

If incarcerated youth suffer from anxiety and depression, then they should also have processing biases toward stimuli that trigger these emotions. By identifying processing biases, some indication of youths’ internal experience is gained, while circumventing the barriers that a lack of emotional expressiveness places on accessing submissive emotions. Tasks that explore attentional biases among anxious and depressed individuals can largely be divided into three categories (Wells & Matthews, 1994):

1. **Encoding tasks**, which measure the participants’ ability to recognize or make a decision regarding a single stimulus;
2. **Filtering tasks**, which measure the participants’ ability to attend to information from one channel, while ignoring information presented in another channel (e.g., dichotic listening tasks, visual probe tasks); and
3. **Emotional Stroop paradigms**, which assess the participants ability to attend to the target (i.e., name the colors that words are printed on), while inhibiting response to interference (i.e., emotional words like WORTHLESS). Processing biases specific to anxious and depressed individuals have been identified in the literature, and are detailed below.

**Anxiety.** The function of fear is to promote and organize a response to avoid or eliminate threats in the environment. This is a natural, adaptive response to threat. However, excessive attention to threatening stimuli is an essential component of anxiety disorders, and is a phenomenon not observed in non-anxious populations. People who are anxious tend to direct attention toward threatening stimuli before these stimuli are even in conscious awareness. However, with prolonged exposure to threat, anxious individuals direct their attention away from such stimuli. The former, automatic stage of processing,
helps engender or exacerbate the anxious state and prepares the body for action, while the latter, more deliberate stage of processing is self-protective (i.e., avoiding the stimuli will reduce anxiety). It also compromises detailed evaluation of the stimuli, which could provide information that would reduce the threatening value of the stimulus, and subsequently reduce anxiety (Bradley, Mogg, Millar, et al., 1997).

Although there is some debate regarding the cognitive mechanisms that underpin these findings (c.f., Bar-Haim, Lamy, Pergamin, Bakermans-Kranenburg, & van Ijzendoorn, 2007; Cooper & Langton, 2006; Frewen, Dozois, Joanisse, & Neufeld, 2007; Koster, Crombez, Verschuere, & de Houwer, 2004; Mogg & Bradley, 1998: Valence Evaluation System; Williams, Watts, MacLeod, & Matthews, 1997: Resource Allocation Mechanism & Affective Decision Mechanism), it is clear that biases in identifying and processing threatening information are robust among individuals with anxiety disorders (Mathews & MacLeod, 2002; Mogg & Bradley, 1998, 2005; Wells & Matthews, 1994; Williams, Watts, MacLeod, & Mathews, 1997). That is, there is wide support for the notion that anxious individuals have processing biases in favor of threat-related stimuli. Non-anxious individuals do not demonstrate such biases. For example, in a recent meta-analytic review of 172 studies, Bar-Haim et al. (2007) concluded that a significant threat bias existed among anxious populations, but not among non-anxious populations. These results were stable regardless of the paradigm used (i.e., emotional Stroop, dot probe tasks, or emotional-spatial cuing), the length of time the participants were exposed to threatening stimuli (subliminal vs. supraliminal), and the type of stimuli used (i.e., words or pictures). Similarly, biases toward threatening stimuli were present across all types of anxiety disorders, with no significant differences in bias between types of disorders (i.e.,
Generalized Anxiety Disorder, Obsessive Compulsive Disorder, Panic Disorder, Post-Traumatic Stress Disorder, Social Anxiety Disorder, and Simple Phobias). In addition, threat bias was found among anxious adults and anxious children.

Overall, the literature indicates that anxious populations have significant biases toward threat-related information (Mogg & Bradley, 2005), whereas, non-anxious populations do not (Schmukle, 2005). Moreover, this finding is so ubiquitous that Williams, Mathews, & MacLeod (1996) indicated that “no researchers testing patients who were clinically diagnosed as anxious have found null results” (p. 19). Moreover, in Mogg and Bradley’s (2005) review of the literature, 20 out of the 22 studies that explored attentional biases toward threat in anxious individuals demonstrated significant findings using either visual probe or Stroop tasks, and the 2 studies with non-significant findings pointed to methodological errors to explain the results.

**Depression.** Given their high comorbidity, it would follow that similar processing biases should be found between anxiety and depression (Mogg & Bradley, 2005). However, the results with respect to depression are mixed and largely suggest that the same attentional biases are not observed in depression. Results from each of the attentional biases paradigms are cited below, followed by explanations for the mixed results.

Encoding tasks have provided little information to suggest that depressed participants have biases in recognizing and retrieving affective information (Wells and Matthews, 1994), with the exception of a few studies that have observed significant results when an emotional priming paradigm is used (c.f., Power, Cameron, & Dalgleish, 1996). Filtering tasks have also failed at providing evidence to suggest an attentional bias
toward negative material among depressed individuals (Gotlib, McLachlan, & Katz, 1988; Hill & Dutton, 1989). Similarly, dot probe tasks have been used with depressive participants, with little evidence suggesting an attentional bias exists toward negative stimuli. For example, MacLeod et al. (1986) reported that depressed adult participants did not demonstrate attentional biases toward threatening stimuli. Neshat-Doost, Moradi, Taghavi, Yule, et al. (2000) considered that the non-significant findings from previous studies using dot probe tasks might be related to the use of generally threatening stimuli, rather than materials that might specifically capture the attention of people with depression. However, they found no support for an attentional bias among 19 depressed youth when using depressive and threat related words. Moreover, Mogg and Bradley’s (2005) review of the literature, found that dot probe tasks did not yield significant results, despite the association between anxiety and depression, and the robust literature suggesting attentional biases among anxious populations. However, it is noteworthy that Joormann, Talbot, & Gotlib (2007) used the dot probe task and found attentional biases toward sad faces among young people predisposed to depression, who had depressed mood induced. These results can largely be attributed to the extended stimulus presentation time (1500ms), which allowed for more elaborate processing of information, as well as the use of depressive specific stimuli.

Stroop tasks have shown more success in demonstrating that attentional biases toward negative stimuli exist in depression. Participants who were rated to be high in trait depression had slower times on emotional Stroop tasks than non-depressed controls (Gotlib & Cane, 1987; Gotlib & McCann, 1984; Klieger & Cordner, 1990). Moreover, there were no significant differences in emotional Stroop times between non-depressed
controls and non-depressed participants who had mood states induced (Gotlib & McCann, 1984). Note that effects found in these studies appear to be facilitated when the stimuli selected are self-relevant. That is, more interference is observed when the stimuli selected are based on participants’ ratings of relevance (Segal, Truchon, Gemar, Guirguis, & Horowitz, 1995), are sufficiently negative (Williams et al. 1996), and are presented for long durations (Mogg & Bradley, 2005). Although there is some uncertainty regarding the cognitive mechanisms that explain why biases are observed on the Stroop, but not the aforementioned attentional tasks, Williams et al. suggested that the emotional Stroop demonstrates interference among depressives because it triggers negative thoughts, which compete for attentional resources. Similarly, Mogg and Bradley (2005) suggested that the Stroop tasks that demonstrated attentional biases allowed sufficient exposure to the stimuli for activation of negative self-schemata. Moreover, de Ruiter and Brosschot (1994) noted that slow times on the Stroop were related to the cognitive effort that is needed to inhibit a response to the emotionally laden stimuli.

Researchers have explained the mixed results among depressed participants by suggesting that depression and anxiety have different patterns of biased information processing (Mogg & Bradley, 2005; Neshat-Doost, et al., 2000). Anxiety helps prepare the body to eliminate threats, and thus, biases toward threatening stimuli help to quickly identify danger and expedite this process. Williams et al. (1997) noted that this process is automatic, unconscious, and contributes to vulnerability for anxiety, but not depression. In contrast, sadness is associated with loss and failure, and depressed mood is a signal to others that comfort is needed (Beck, Rush, Shaw, & Emery, 1979). Hence, the cognitive process is different, and does not require a speedy allocation of resources for self-
preservation. Rather, depression is associated with cognitive biases at later and more elaborative stages of information processing, such as memory and judgment (Forgas, 1989; Neshat-Doost, Taghavi, Moradi, Yule, & Dalgleish, 1998). Depressives tend to be self-critical (Beck, 1976), judge themselves negatively (Roth & Rehm, 1980), and recall/perseverate on negative stimuli (Forgas, 1989; Williams, et al., 1997). Mogg and Bradley (2005) used their cognitive-motivational model of anxiety, to explain that depressed and anxious individuals both overestimate the aversiveness of negative stimuli, but the stimuli only motivate depressives for action if they are evaluated, and determined to be salient for the individual. Hence, they do not show automatic attentional biases toward threat, but rather, the process is slower and requires more elaborate processing of the negative stimuli.

In summary, there are epidemiological data to suggest that internalizing difficulties exist among incarcerated youth, but at a far lower rate than what is seen for externalizing disorders. Moreover, clinical practice suggests that these issues exist among incarcerated youth, and are often missed because of the focus on the externalizing behavior. Lastly, although there are no studies to suggest that incarcerated youth have attentional biases toward threat, if they truly are anxious and depressed, implicit data should corroborate the assertion that youth in custody and detention have cognitive biases consistent with anxiety and depression.

**Socialization of Emotion**

Prior to engaging in a discussion about emotion socialization practices, and their contribution to the ubiquitous endorsement of externalizing difficulties among incarcerated youth, some background information relevant to the emotion socialization
literature is necessary. More specifically, a definition of emotions is provided, followed by a discussion about emotion understanding and expression. This section closes with more pointed discussion about how emotions are socialized.

**Emotion**

Providing a simple definition of emotions is challenging because of the longstanding lack of consensus in the literature regarding a definition (Rapaport, 1942). Moreover, the term “emotions” has often been confabulated with terms like “affect” and “feelings” (Frank, 1954). An attempt to define emotions by building on these latter concepts is made. In accordance with Greenberg and Pavio’s (1997) delineation of the terms, affect is an unconscious biological response to stimulation, and feelings involve the conscious awareness of these affective states. Consistent with earlier researchers’ suggestion that emotions have physiological, cognitive, and behavioural components (Harlow and Stagner, 1933; Lund, 1939; Rapaport, 1942), Greenberg and Pavio (1997) indicated that “emotions are experiences that arise when action tendencies and feeling states are joined with evoking situations and self” (pp. 7-8). Similarly, Izard (2009) indicated that emotions are “a phase of neurobiological activity that is experienced as motivational and informational and that influences thought and action, a felt cognition, or action tendency” (p. 3).

Regarding the function of emotions, Darwin (1872) indicated that emotions serve to organize the body’s response to challenges in the environment. Moreover, Leeper (1948) indicated that emotions “arouse, sustain, and direct activity” (p. 17). Emotions invariably lead to actions or action tendencies that are aimed at changing the self, others, or the environment (Greenberg & Paivio, 1997). Garside and Klimes-Dougan (2002)
similarly noted that each discrete emotion has a unique intrapersonal and interpersonal function. That is, emotions provide us with considerable information about ourselves and the environment (Gohm & Clore, 2002), which subsequently informs action tendencies (Savage, 2002). For example, recall that sadness indicates loss, slows cognitive processing, and gives the individual time to reflect on events and space for grieving to occur. The expression of sadness additionally elicits comfort and empathy from others. Anger indicates a perceived injustice or violation has occurred, and its expression (e.g., aggression) pushes the antagonist away, subsequently preserving personal integrity or safety. Fear is a signal of impending danger, and engenders the action tendency to escape or avoid. Moreover, its expression elicits protection and/or reassurance from others.

Greenberg and Paivio (1997) explain that emotions will persist until the actions or action tendencies have achieved the desired goal. For example, sadness will be experienced until sufficient comfort is achieved. When youth experience emotions, but do not understand them, it compromises effective expression, and subsequently hampers their ability to have their needs met in an efficient and timely manner. Overall, emotions are an integral part of human survival (physically, emotionally, cognitively, and socially), and understanding emotional experiences is critical to effective communication with others.

**Emotion Understanding and Expression**

Facility in understanding and expressing emotions is critical to prosocial development. Pause is taken to further elaborate on these constructs before discussing how they are socialized.
Emotion understanding has been referred to as receiving or decoding emotions. Some understanding of emotion is said to emerge in normal developing children as early as 12 months of age. For example, infants are said to examine parental emotion expression, and use this as a guide to determining their own behavioural and emotional responses (Mumme, Fernald, & Herrera, 1996). At 24 months, most children have developed some awareness of what emotions are expected in different situations, and no longer need their parents as a guide (Walden, 1991). By 48 months, well-adjusted children are able to determine the antecedents and consequences of emotions. That is, they are able to determine the causes of emotions, and identify situations that will engender discrete emotions (Barden, Zelko, Duncan, & Masters, 1980). Moreover, accuracy in decoding facial expressions has generally developed by the age of 6 among healthy, well-adjusted youth (Gross & Bailif, 1991).

Emotion expression is the ability to encode, send, or communicate emotions to others. Children without mental health difficulties develop skills in this regard between the ages of two and four (Denham & Couchoud, 1990), with the ability to express more complex emotions generally increasing with age and the broadening of social experiences (Gross & Bailif, 1991; Pons, Harris, & deRosnay, 2004). Halberstadt (1983, 1986, 1991) identified 4 categories of emotion expression, based on valence (i.e., negative to positive) and power (i.e., submissive to dominant). More specifically, she indicated that expression of emotions like sadness, embarrassment, guilt, and shame, had a negative emotional valence for others, and also lacked the functional ability to exact control and authority over others. Consequently, such expression of emotion was deemed “negative submissive.” Although expression of sympathy, empathy, appreciation/thankfulness, and
awe/reverence were similarly perceived as submissive by others, they had a positive emotional valence, and thus, were labeled “positive submissive.” Expression of happiness, pride, love, and admiration were “positive dominant” because they had both positive valence and were capable of reinforcing and changing the behavior of others. Lastly, although expression of anger and contempt were similarly perceived as controlling, they have a negative emotional valence. Consequently, these exchanges were labeled “negative dominant.”

Several researchers have noted the importance of gaining facility with decoding and expressing emotions. For example, Saarni (1990, 1999) coined the term emotional competence, Halberstadt, Denham, and Dunsmore (2001) developed a theory of affective social competence, and Mayer and Salovey (1997) were the first to investigate emotional intelligence. Researchers highlight the early development of the ability to understand and express emotions as being critical to subsequent social, emotional, and behavioural development. For example, youth who understand emotions are able to respond in more pro-social ways to the displays of emotions from others, exhibit greater social competence, and develop positive peer relations (Denham, et al., 2003; Denham, McKinley, Couchoud, & Holt, 1990; Eisenberg, Fabes, & Murphy, 1996; McElwain, Halberstadt, & Volling, 2007; Saarni, 1990). Moreover, youth who are skilled at expressing emotions in appropriate ways are able to garner support from others (Barrett & Salovey, 2002). Thus, expression of sadness elicits comfort, while anxiety calls for support and reassurance. In addition, youth who learn to modulate their emotion expression to match situations tend to be more pro-social and have greater interpersonal
success (Denham et al., 2003; Denham et al., 1990). The process by which such facility with emotions, and subsequent social favor, are gained is called socialization of emotion.

**Socialization.** The process by which youth learn to label, identify, and differentiate between emotions (i.e., understand emotions) is known as socialization of emotion understanding (Denham & Kochanoff, 2002; Denham, Zoller, & Couchoud, 1994). Similarly, the socialization of emotion expression is the process by which youth learn to describe and communicate emotions (Halberstadt et al., 1995; Halberstadt & Eaton, 2002; Zuckerman, Hall, DeFrank, & Rosenthal, 1976; Zuckerman, Lipets, Koivumaki, & Rosenthal, 1975).

Consistent with ecological systems theory, socialization of emotion expression is dependent on interactions with family, peers/neighborhood, and culture/society, with the most proximal factor, family, being of greatest importance at early ages and community factors gaining influence with age (Halberstadt, 1986; Klimes-Dougan et al., 2007; Saarni & Buckley, 2002). The importance of each of these factors in the socialization of emotion is noted below.

**Family factors.** Halberstadt (1986) indicated that “the family should be the primary agent for socializing emotional expression because it is in family situations that an individual must first attempt to communicate needs and desires” (p. 827). Denham and Kochanoff (2002) similarly pointed to the great importance of parents in the early socialization of understanding of emotions. The way in which youth learn to understand and subsequently express or inhibit their emotions largely depends on how parents respond to emotion expression of their children, the way in which parents express their own emotions in the home, and the values they share with their children about emotion
expression (Denham & Kochanoff, 2002; Denham, Zoller, & Couchoud, 1994; Denham, McKinley, Couchoud, & Holt, 1990; Halberstadt, 1991; Halberstadt et al., 1995). These practices have been labeled contingent responses, modeling, and coaching (Denham et al., 1990, 1994). Although all three practices influence socialization of emotion in the home, modeling of emotions receives particular attention below.

Children learn the attitudes, the values, and the intentions being communicated, by observing expression of emotion in the home (Dunn & Brown, 1994; Saarni & Buckley, 2002). Denham et al. (1994) indicated that maternal modelling of emotional language was associated with high levels of emotion understanding in children. Similarly, Denham and Kochanoff (2002) found that positive parental expressed emotion in the home contributed significant variance in children’s understanding of emotion. In dramatic contrast, high levels of parental negative dominant emotions compromised emotion understanding in children (Denham et al., 1994; Garner, Jones, & Miner, 1994). Similarly, Halberstadt (1983, 1986) found that high levels of family expressed emotion were correlated with young adults demonstrating poorer ability to decode emotion, than young adults from families that were low in expressed emotion. These results were replicated by Halberstadt, Dennis, and Hess (2011) in a more recent study. They found a negative correlation between family expressiveness and decoding accuracy.

These seemingly contrasting results might suggest that moderate levels of expressed emotion in the home are correlated with the development of children’s understanding of emotion (Denham, Mitchell-Copeland, Strandberg, Auerbach, Blair, 1997). However, the expression of higher levels of emotion in the home is associated with poorer emotion understanding (Halberstadt, 1983, 1986). That is, parents who freely
expressed moderate levels of emotion granted youth the permission to safely process, decode, and learn from emotion expression in the home (Denham & Kochanoff, 2002; Denham, Zoller, and Couchoud, 1994). However, high levels of emotion expression compromised emotion understanding (Halbserstadt, 1983, 1986; Halberstadt & Eaton, 2002). That is, in families where there is high emotional expressiveness, children do not have to put forth substantive effort to understand the emotional states of their family members. Consequently, they do not become skilled at decoding subtle emotional states.

In addition, frequent, intense expression of negative emotions from parents, likely destabilizes youths’ sense of safety and security in the home, and engenders anxiety. Consequently, youth direct their efforts toward self-preservation, and the self-reflection required to learn from emotional experiences is unavailable. In contrast, children from families that were low in emotional expressiveness have better decoding skills because they had to be more sensitive to subtle non-verbal displays of emotion. Moreover, their parents’ more balanced emotion expression communicates a sense of stability and permission that is necessary for youth to be able to effectively process emotion.

Several factors contribute to the emotion socialization practices adopted by parents. For example, Eisenberg, Cumberland, and Spinrad (1998) noted the bidirectional influence of socialization practices on children’s mental health. Several additional researchers have noted that the temperament and psychopathology of youth can compromise the use of adaptive parenting strategies (Kuczynski & Parkin, 2007; Wong, McElwain, & Halberstadt, 2009). Similarly, Gottman, Katz, and Hooven (1996) indicated that parents’ emotions about their children’s emotions (i.e., meta-emotion) can affect

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1 It is noteworthy that intensity of emotion is an important aspect of socialization. However, Halberstadt’s (1983, 1986) measure of family expressed emotion, which is used in this study, reflects the type but not the intensity of emotion expression in the home.
their approaches to parenting. Also contributing to families’ emotion socialization practices are their cultural values and/or the discourse that develops in homes regarding the emotions that are safe and appropriate to express and those which are perceived as more dangerous (Dunsmore & Halberstadt, 1997). Matsumoto, Takeuchi, Andayani, Kouznetsova, & Krupp (1998) argued that display rules are “learned rules that dictate the management of emotional expressions based on social circumstances” (p. 148). Display rules are associated with parental emotional expressiveness in the home (Jones, Bowling, & Cumberland, 1998; Malatesta & Haviland, 1982).

Community factors. Most of the literature on the socialization of emotion has focused on the family, and for very good reason. However, this has left gaps regarding the influence of additional socializing agents “such as peers, teachers, religious leaders, or media figures” (Klimes-Dougan, & Zeman, 2007, p. 206). Although both Denham et al. (2002) and Halberstadt (1986) discuss the importance of socialization of emotion in the community, only brief mention is directed to these factors in their programs of research. However, seminal research on cultural display rules has pointed to the importance of local values and norms in determining when, where, and how emotion is expressed (Ekman, 1972). These early studies demonstrated that no cross cultural differences in expression of disgust, anger, fear, or sadness existed when participants were alone, and no display rules were activated. However, in the presence of the examiner, Japanese participants masked negative emotions, while American participants continued to display negative emotions. As bonds to peer groups develop in adolescence, display rules within local and wider communities have an impact on the socialization of emotion.
There is a specific set of display rules associated with youth in the justice system. Anderson (1999) coined the term “code of the street” to describe the vigilance with which the most severely marginalized youth protect themselves from the threat of harm within their communities. Youth learn that their communities are dangerous and unpredictable places, where they must maintain the respect of others through violence and bravado. Negative-submissive expressions of emotion are viewed as signs of weakness, and the inkling of disrespectful/dominant acts are punished with violence or death. Regarding the latter, since aggressors are simultaneously rewarded, albeit temporarily, their behaviors are maintained, despite the potentially morbid long-term consequences (Stewart, Schreck, & Brunson, 2008; Stewart, Schreck, Simons, 2006).

With respect to socialization of emotion within the context of the broader culture, research has demonstrated that individualism and collectivism were correlated with cultural display rules (Matsumoto et al., 1998). For example, participants from collectivist cultures exerted greater control over their expression of negative emotions among their family members and colleagues, than did individuals from individualistic cultures. Matsumoto et al. concluded that it was more important to members of collectivist cultures to keep the peace within their in-groups (e.g., family, peers) than members from individualistic cultures, who tend to express more negative emotions within their in-groups. Most relevant to the current study is the broader suggestion that culture has an impact on socialization of emotion. Incarcerated youth are largely marginalized (Craig, Viaro, Gagnon, & Tremblay, 2002; Dishion, Nelson, & Yasui, 2005), and thus, are disconnected from mainstream culture, along with its norms and values. Consequently, they may not abide by the culturally acceptable display rules for
emotion expression. That is, youths’ lack of trust in mainstream culture likely contributes to a general lack of disclosure and restricted range of expression of emotion within the broader social context.

Cultural mistrust refers to apprehensive attitudes and beliefs about European Americans (Terrell & Terrell, 1984; Terrell, Terrell, & Taylor, 1981; Whaley, 1997, 2001a, 2001b, 2002). The apprehension is said to be a protective strategy, which emerged because of experiences with oppressive and discriminatory practices directed at ethnic minority groups (Ahluwalia, 1991; Grier & Cobb, 1968; Maultsby, 1982; Ridley, 1984; Whaley, 1998; Whaley, 2001a). These experiences have led to the healthy, adaptive, “paranoia” described by Grier and Cobbs (1968) in their classic book, Black Rage. Given the preponderance of incarcerated ethnic minorities, who are marginalized and devalued in Canada (Berry & Katlin, 1995; Montreuil & Bourhis, 2001), cultural mistrust is a relevant construct among these youth. Widespread mistrust has considerable consequences for communication with people from mainstream culture. That is, incarcerated youth have been socialized to be wary of the intentions of members from mainstream culture, and thus, emotion communication is largely superficial.

**Intrapersonal factors.** Although there are many intrapersonal factors that contribute to the way in which emotion is socialized, youths’ age, sex, and cognitive capacity/verbal ability are widely considered to be contributing factors.

It is commonly held that youths’ ability to process and express emotion increases with age. This fits with many other processes that are dependent on development. However, the way in which the socialization process changes throughout development is less intuitive. More specifically, the primary agent of socialization of emotions is the
parents prior to youth entering high school, but parental influence wanes thereafter (Zahn-Waxler, Klimes-Dougan, & Kendziora, 1998), because of the greater influence from peers. However, Klimes-Dougan and Zeman (2007) suggested that parental influence might not be less prevalent in adolescence, rather it might be more covert because youth have internalized the expectations regarding emotion expression, and thus, parents provide more subtle forms of socialization to youth (e.g., non-verbal behaviour).

Despite the expected increased influence from peers, parents remain essential socializing agents (Klimes-Dougan, & Zeman, 2007). However, their socialization strategies change in adolescence. More specifically, parents expect facility and mastery over emotions as youth age (Cassano, Zeman, & Perry-Parrish, 2007), and thus, have less tolerance and utilize more punitive socialization strategies with older children (O’Neal & Magai, 2005). More specifically, youths’ age was negatively correlated with parental use of reward strategies for negative emotions (e.g., sadness, anger, fear), but positively correlated with parental use of neglect and magnify strategies (Klimes-Dougan, Brand, & Zahn-Waxler, et al., 2007). That is, parents tended to use socialization strategies that were aimed at inhibiting (e.g., punishing, matching, or neglecting) the expression of negative emotions with older adolescents, and fewer of such strategies with younger adolescents.

The sex of both the parents and the children can impact the way in which emotions are socialized (Beal, 1994). With respect to parental expressiveness, mothers are generally more active in socializing negative emotions than fathers (Garside & Klimes-Dougan, 2002; Klimes-Dougan, Brand, & Zahn-Waxler, et al., 2007). Hooven, Gottman, & Katz (1995) similarly found that mothers showed more interest in their
children’s negative submissive emotions, and fathers showed more interest in their
children’s negative dominant emotions. Moreover, Cassano, Perry-Parrish, and Zeman
(2007) indicated that fathers generally tended to minimize children’s displays of sadness,
while mothers tended to facilitate the expression of sadness.

Regarding parents’ differential socialization of their boys and girls, parents tend
to talk more about emotions with their daughters than their sons, particularly negative
emotions (Garner, Robertson, & Smith, 1997; Eisenberg, Cumberland, & Spinrad, 1998).
Moreover, negative dominant emotions are reinforced in males by parental display of
concern, whereas displays of anger amongst females is largely ignored, and thus,
inhibited (Birnbaum & Croll, 1984). In contrast, fathers tend to encourage their
daughters’ expression of sadness and fear, but punish their son’s expression of these same
emotions (Garside & Klimes-Dougan, 2002; Klimes-Dougan, Brand, & Zahn-Waxler,
2007). Similarly, parents engage in more frequent and elaborate discussion about
negative submissive emotions with their daughters than their sons (Fivush, 1989).

The impact of differential socialization of emotion on males and females is
mixed. That is, it has been well documented that males and females express emotions
differentially, with females tending to express more negative submissive (e.g., sadness,
fear) and positive dominant emotions (e.g., happiness) than males (Brody & Hall, 1993;
Wong, McElwain, Halberstadt, 2009). However, the results regarding sex differences in
emotion understanding are more inconclusive (Eisenberg, et al., 1996). For example,
Brody’s (1985) review suggested no differences in sex regarding ability to decode
emotions. In contrast, Hall (1978) indicated that females were more accurate at decoding
emotions than males. Several studies since then have similarly articulated this point (e.g.,

Emotion expression is largely dependent upon the cognitive capacity and verbal ability of youth. Given that this is fairly intuitive, few contemporary researchers have endeavored in the direction. The extant literature largely speaks to development (see above), rather than specifically examining cognitive capacity and general language abilities. However, Harrigan (1984) argued that youth demonstrated higher emotion understanding scores when verbal expression and elaboration was minimized. That is, youth had better scores on tasks that required comprehension of emotion words (e.g., forced choice) when compared to tasks that required them to generate emotion words or describe emotions (Harrigan, 1984).

**Alexithymia.** While socialization of emotion refers to the process by which skills for understanding and expressing emotions are acquired, alexithymia refers to deficiencies in these abilities. In addition to the focus on poor emotion expression and understanding, alexithymics are also said to be biased toward externally oriented thinking, and have limited capacity for introspection and imagination (Sifneos, 1996; Taylor & Bagby, 2004). The construct emerged out of the mental health literature on psychosomatic disorders (Sifneos, 1973), and its seminal researchers suggested a biological basis (Heiberg & Heiberg, 1977; Sifneos, 1996; 2000; Taylor & Bagby, 2004).

Deficiencies in identification and expression of emotions are a robust predictor of mental health difficulties (Klimes-Dougan, Brand, Zan-Waxler, Usher, et. al., 2007). Youth who have poor emotion understanding and expression tend to have high levels of both internalizing and externalizing problems (Garside & Klimes-Dougan, 2002; Klimes-
Dougan, et al., 2007; O’Neal & Magai, 2005; Sifneos, 1996, 2000). The reasons for the association between alexithymia and mental health are less well known. However, several studies have pointed to the association between restricted understanding and expression of emotion and poor emotion regulation as contributing factors to compromised mental health (Garside & Klimes-Dougan, 2002; Gottman, Katz, & Hooven, 1996; Malatesta-Magai, 1991; Malatesta & Wilson, 1988; O’Neal & Magai, 2005; Zahn-Waxler, Klimes-Dougan, & Slattery, 2000).

With respect to internalizing difficulties, Honkalampi, Hintikka, Laukkanen, Lehtonen et al. (2001) conducted a longitudinal study in Finland, which explored the relationship between alexithymia and depression. Results indicated that 45% of patients with Major Depression were in the clinical range for alexithymia at baseline, and just 9% of non-depressed controls. Moreover, severity of depression increased risk of being alexithymic at 1-year follow up. That is, alexithymia scores decreased with corresponding self-reported depression scores at follow up, and almost all of the patients who recovered from depression also saw an abatement of alexithymic symptoms. These findings lend support to the notion that alexithymia might be state or mood dependent, which contrasts the more popularly held view that it is a personality trait and very resistant to treatment (Parker & Taylor, 1997).

Hendryx, Haviland, and Shaw (1991) indicated that difficulty with self reported identification and expression of emotions was positively correlated with anxiety and depression. However, deficiencies in introspection and tendencies toward externally oriented thinking were not correlated with anxiety and depression. Similarly, Marchesi, Brusamonti, and Maggini (2000) indicated that self reported alexithymia was higher in
patients with depression and anxiety than controls. Of note, similar to Hendryx et al. (1991), this finding was specific to the subscales of identification and communication of feelings on the Toronto Alexithymia scale. Karukivi, et al. (2010) also indicated that high scores of self-reported alexithymia were associated with anxiety, substance use, and depression. Alexithymia continued to be associated with anxiety after controlling for depression and alcohol consumption. Of note, also similar to Hendryx et al., the externally oriented thinking subscale of the TAS-20 was not related to anxiety.

Regarding alexithymia and externalizing disorders, Sifneos (2000) used excerpts from speeches by Hoess, Eichmann and Hitler to suggest a relationship between alexithymia and psychopathy. Since then, empirical attempts have been made at studying the two constructs. Haviland, Sonne, and Kowert (2004) demonstrated that inherent to both alexithymia and psychopathy is a lack of empathy and insight. However, they reported that individuals with alexithymia rated themselves higher on anxiety and submissiveness, and were more apt to abide by social norms, than individuals who rated themselves high on psychopathy. More deliberate attempts at tying alexithymia to delinquent behavior contradict the latter suggestion that alexithymics are anxious and submissive. For example, Nemiah, Freyberger, & Sifneos (1976) noted that alexithymics occasionally displayed bursts of violent behaviors, but could not describe the underlying feelings associated with their behavior. Following these assertions, researchers demonstrated that young offenders have more difficulty accurately decoding affect in faces than non-offenders (McCown, Johnson, & Austin, 1986, 1988). Moreover, in a study of emotional intelligence, Moriarty, Stough, Tidmarsh, Eger, & Dennison (2001) demonstrated that adolescent sex offenders had poorer ability identifying feelings and
were more aggressive than non-offenders. Similarly, Manninen et al. (2011) explored alexithymia within a reform school for delinquent adolescents in Finland. Results indicated that that alexithymia was significantly correlated with both internalizing and externalizing problems on the Youth Self Report. Similarly, Zimmermann (2006) used logistic regression to demonstrate that alexithymia and family structure were the two strongest factors in predicting juvenile delinquency.

With respect to rates of alexithymia among delinquent youth, Manninen et al. (2011) indicated that 21% of reform school youth were in the clinically significant range for alexithymia, in comparison to just 8% of controls. Moreover, 60% of reform school youth were either in the clinical range or had features of alexithymia in comparison to just 35% of controls. Similar results were found in a study with young offenders living in specialized residential facilities in Switzerland. That is, Zimmermann (2006) indicated that 47% of their young offenders sampled were in the clinically significant range for alexithymia, whereas only 22% of the non-delinquent controls met criteria for alexithymia. Note that the rates for alexithymia in these studies were comparable to rates in psychiatric samples (Taylor, 2000; Taylor et al., 1997). Moreover, the rates cited among the non-delinquents were similar to prevalence rates of alexithymia in the general population (Honkalampi, Tolmunen, Hintikka, & Rissanen, et al., 2009; Horton, Gewirtz, & Kreutter, 1992).

**Aims of the Current Study**

Youth in the justice system are largely seen as disruptive, despite some suggestion from clinical practice and the literature that they experience much more. The general purpose of this study was to explore the self-reported mental health profiles of
incarcerated youth, and explain how socialization factors contributed to the disparity in endorsement of externalizing disorders relative to internalizing disorders. To accomplish this task, this study was divided into three broad sections.

**Mental Health among Incarcerated Youth**

The first aim was to profile the mental health of youth in custody and detention using a standardized measure of psychopathology. Profile analysis (i.e., repeated measures extension of MANOVA) was used to explore the way in which youth’s mental health profiles differed based on sex and ethnicity. Consistent with previous research, it was expected that incarcerated youth would endorse more externalizing than internalizing symptoms (Teplin et al., 2002). It was posited that incarcerated males would endorse significantly more externalizing symptoms than incarcerated females. Similarly, it was expected that incarcerated males would endorse fewer internalizing symptoms than incarcerated females (Sevecke, Lehmkuhl, & Krischer, 2009; Teplin et al., 2002; Wasserman et al., 2005). Finally, it was expected that incarcerated Black males would endorse fewer externalizing and internalizing symptoms than non-Blacks (Abram et al., 2003; Teplin et al., 2002; Wasserman, et al., 2005).

**Attentional Biases**

The second aim, using a visual probe task, was to challenge the notion that incarcerated youth simply do not suffer from anxiety and depression. It was expected that incarcerated youth would have attentional biases toward both angry and sad faces. Although these data will not confirm that incarcerated youth have anxiety and depression, it is expected that they will demonstrate that youth in the justice system have cognitive biases that have been demonstrated in youth with internalizing disorders. Moreover,
these data will suggest that these youth have these cognitive biases, despite their lack of endorsement of internalizing problems on self-report measures.

**Socialization of Emotion**

The third aim of this study was to determine the socialization practices that contribute to the disparity in endorsement of externalizing and internalizing disorders among incarcerated youth. Two hypotheses were offered. First, after controlling for intrapersonal characteristics (i.e., sex, ethnicity, and verbal language abilities), it was expected that negative dominant family-expressed emotion, abiding by sub-cultural “street codes”, and a pervasive sense of distrust in the wider community, would contribute to higher levels of endorsement of externalizing symptoms. The assumption here is that youth learn to be tough and aggressive at each ecological level, which contributes to their delinquent behavior. Second, after controlling for intrapersonal characteristics, it was expected that high levels of negative submissive expression of emotion in the home, failing to adopt street codes, and trusting in people within mainstream culture, would contribute to higher levels of endorsement of internalizing symptoms. That is, those youth who have been given permission to explore submissive emotions in their homes and communities will be more adept at expressing these emotions (Denham & Kochanoff, 2002).

Consistent with the efforts to demonstrate that socialization practices predict mental health outcomes, this study similarly endeavored to demonstrate that alexithymia mediated the relationship between emotion socialization practices in the home and psychopathology (Figure 1). It was expected that alexithymia would mediate the relationship between negative dominant family expressed emotion and externalizing...
symptoms. This was based on the understanding that negative dominant socialization practices within homes predict a reduction in youths’ ability to understand and express submissive emotions (Halberstadt, 1986; Halberstadt et al., 2011). Since these abilities have been compromised, youth resort to aggressive and felonious behavior (Manninen et al., 2011; Zimmermann, 2006). In addition, it was expected that alexithymia would mediate the relationship between negative submissive emotion expression and internalizing disorders. It was posited that family socialization practices that promote expression of negative submissive emotions lead to youth having better facility with understanding and expressing sadness and anxiety. That is, these youth are more attuned to the subtleties of expression of emotion, and will have developed a wider range of emotion expression (Denham & Kochanoff, 2002; Halberstadt, 1986; Halberstadt et al., 2011). Consequently, they will be more adept at expressing internal distress, and will readily endorse internalizing symptoms on self-report measures.
Methods

Participants

The sample included 91 youth (78 male, 13 female). Participants ages ranged from 14 to 19 years, $M = 17$ years, $SD = 1.1$ years. The length of time incarcerated ranged from less than 1 month to 72 months, $M = 15.6$ months, $SD = 15.4$ months. Additional characteristics of the sample are included in Table 1.

Data were collected from six youth justice facilities in southern Ontario. The facilities included secure custody and detention (Roy McMurtry, Brookside, Syl Apps Youth Centre, and Kennedy House), as well as open custody and detention facilities (Fernie House and Cedarbrook). Thirty-five percent of the participants were incarcerated at Roy McMurtry, 24% at Syl Apps, 19% at Fernie House, 12% at Brookside, 7% at Kennedy House, and 3% at Cedarbrook. Of the 22 youth interviewed at Syl Apps, 32% were interviewed after Syl Apps introduced a mandate within the justice system for serving youth who have mental health needs. This equates to almost 8% of the overall sample.

General Procedure

This study was approved by the institutional ethics boards for the University of Guelph, Ministry of Child and Youth Services, and Kinark Child and Family Services. Youth were recruited for the study by resident social workers and child and youth workers. Recruitment was facilitated by a letter explaining the research. The only exclusionary criteria for the study were lucidity, and no acts of aggression immediately preceding the interview.
On arrival, participants provided written informed consent. Parents provided written consent for the 3 participants who were under the age of 16. Participants were asked to complete the dot probe task, followed by a series of self-report questionnaires, which took between 30 and 60 minutes to complete. Questions and instructions were read aloud to participants, who were provided with copies of materials to read along. The lead investigator recorded the responses. All tasks, questionnaires, and consent forms were completed individually, in a private room. Youth received a $5 credit to their canteens for participation.

**Measures**

**Demographics.** Participants’ sex, age, grade, parents’ education, living arrangements (i.e., who they live with, what intersection they live closest to, and whether or not they live in government subsidized housing), country of birth, parents country of birth, ethnic origin, parents employment, and years of incarceration were recorded.

**Expressive language abilities.** The Mill Hill Vocabulary Scale (Raven, Raven, & Court, 1998; MHV) was used to control for general expressive language abilities. It measures the recall and expression of acquired verbal information. Given the assertion that socialization practices contribute to difficulty with expression and understanding of emotion, it was prudent to control for the possibility that weak ability to express emotions is related to delays in expressive language development. Although the MHV is specifically referred to here as a measure of expressive language, it is also noteworthy that it was originally devised as a measure of crystallized intelligence, and expressive vocabulary tests continue to be used in this regard today.
Youth were asked to provide oral definitions for 33 words taken from Form 1 Set A in the senior version of the test. The words were presented orally and responses were recorded by the investigator. Expected scores for Set B (multiple-choice) were derived from the standardization tables in the manual.

The initial standardization sample indicated that correlation between the open ended and multiple choice formats was .87 for Form 1 of the test, which was the form used. Test-retest reliability was between .87 and .98 after 1 month. Raven et al. (1998) also cite adequate criterion and construct validity.

**Adolescent mental health.** The Adolescent Psychopathology Scale – Short Form (APS-SF; Reynolds, 2000) was used to assess the mental health profiles of incarcerated youth. The APS-SF is a widely used norm-referenced measure of psychopathology and social-emotional problems. The APS-SF is a 115 item self-report measure for adolescents aged 12-19. It contains six psychopathology scales based on DSM-IV criteria, six scales based on psychosocial problems and competencies, as well as 2 response style indicator scales. Both *true/false*, and frequency formats (e.g., *never or almost never, sometimes,* and *nearly all the time*) are used. For example, “I broke into a house, car, or building,” “I have hurt myself on purpose.” Moreover, symptoms are rated across different time periods that are largely consistent with DSM-IV criteria. Scores < 60T are in the non-clinical range, 60T – 64T are in the subclinical range, 65T – 69T are in the moderate clinical range, and >70T are in the severe clinical range.

Reynolds (2000) reported satisfactory reliability (alpha coefficient ranging from .80 to .91, with a median \( r_a = .84 \); test-retest reliability ranged from .76 to .91, with a median \( r_{tt} = .84 \)) in the standardization sample. Moreover, adequate criterion validity was
noted by Reynolds (2000), who compared the APS-SF with the Minnesota Multiphasic Personality Inventory, The Reynolds Adolescent Depression Scale, The Beck Depression Inventory, The Suicidal Ideation Questionnaire, the Hamilton Depression Rating Scale, the Revised Children’s Manifest Anxiety Scale, the Suicidal Behaviours Interview, and the Rosenberg Self-Esteem Scale.

Only scales that had DSM-IV relevance were included in the analyses (i.e., Conduct Disorder, Oppositional Defiant Disorder, Substance Abuse Disorder, Generalized Anxiety Disorder, Post-Traumatic Stress Disorder, and Major Depression). Consistent with the approach taken by Bickel and Campbell (2002), and the guidelines set out in the DSM-IV (APA, 1994), ODD was dropped from further analyses in the study because a diagnosis of CD precludes a diagnosis of ODD, and there was only a single case in which the participant met criteria for ODD and not CD.

The validity scales on the APS indicated that one participant scored above 65T on the inconsistency scale, suggesting some concern with random responding or inattention. Consequently, the participant’s data were removed from further analyses. Seven participants scored above 65T on the defensiveness scale of the APS. That is, 7.8% of the sample scored in the mild to moderate clinical range, suggesting concern with respondents’ openness and willingness to give honest answers (e.g., minimizing impairment). These participants were not excluded because part of the premise of the study is that incarcerated youth have biases in reporting of symptoms.

**Attentional Biases.** A dot probe task was used to determine attentional biases toward threatening stimuli (MacLeod, Mathews, & Tata, 1986). Similar to the materials used in Mogg and Bradley (1998; 2003), the experimental stimuli used were 80 pairs of
human faces, which were obtained from the NimStim Face Stimulus Set (Tottenham, et al., in press)\(^2\). The NimStim is a validated set of 646 facial expression stimuli, produced for use in studies of facial and emotional recognition. The 80 pairs of faces chosen can be grouped into 3 sets: 32 angry faces paired with neutral faces; 32 sad faces paired with neutral faces; and 16 neutral faces paired with neutral faces – for baseline purposes. The emotional faces (i.e., angry and sad) were the target stimuli, and the neutral faces were controls.

Regarding the physical characteristics of the images, they included the actors’ faces alone. No additional external features were included in the pictures, with the exception of their necks, each of which was concealed with a grey covering. Each pair included 2 pictures from the same actor. However, the same actor’s face was not used twice in a set. For example, there were different actors for each of the 32 angry pairs shown. Equal numbers of males and females were used. The sample was similarly balanced for ethnicity (i.e., European American, African American, and Asian backgrounds). The images were 12cm x 15cm, and the centres of the pairs were 18cm apart. The images were presented side by side (i.e., left and right side of the screen), on a white background (see Figure 2).

The images were presented on the screen of a Hewlett-Packard G50 Notebook PC, dedicated toward this program\(^3\). There were 90 total trials (10 practice trials obtained from a single actor whose facial expressions included happy, disgusted, calm, and

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\(^2\) Development of the MacBrain Face Stimulus Set was overseen by Nim Tottenham and supported by the John D. and Catherine T. MacArthur Foundation Research Network on Early Experience and Brain Development. Please contact Nim Tottenham at tott0006@tc.umn.edu for more information concerning the stimulus set.

\(^3\) The Dot Probe software was developed specifically for the purposes of this study by Jobe Microsystems. Please contact Christian Battista at battista.christian@gmail.com for more information concerning the software.
surprised, followed by 80 target trials). For each of the 90 trials, youth were presented with a central fixation cross for 500ms, followed by the stimulus pair for 500ms. Regarding the stimulus presentation time, consistent with Bar Haim et al. (2007) review of the dot probe literature, the 500ms presentation of stimuli is largely considered a supraliminal exposure (i.e., just long enough to be consciously perceived), which has consistently demonstrated attentional biases toward threat in anxious but not in non-anxious participants.

Following the stimuli, the probe (i.e., a dot) was presented for 1100ms. For each trial, the probe emerged at either the location of the target stimulus (i.e., congruent presentation) or at the location of the neutral stimulus (incongruent presentation). The position of the probe was balanced for congruence, emotion (i.e., sad, angry), and sex (i.e., male/female). For example, among the 64 trials that included a target stimulus: 8 trials included male/angry/congruent; 8 male/angry/incongruent; 8 male/sad/congruent; 8 male/sad/incongruent; 8 female/angry/congruent; 8 female/angry/incongruent; 8 female/sad/congruent; 8 female/sad/incongruent. The position of the probe as well as the order of the pictures was randomized for each participant, within the constraints listed above. Participants were instructed to press the left “alt” key if the probe appeared on the left of the screen, and the right “alt” key if the probe appeared on the right of the screen. A button press on the keyboard was required to advance trials.

Attentional biases toward stimuli were measured by the time taken to respond to the probe. That is, manual response times to the visual probe were measured (Posner, Snyder, & Davidson, 1980). Individuals were expected to respond faster to the probe when it was presented in an attended (i.e., congruent) rather than an unattended (i.e.,
incongruent) region of the display. For example, if the target stimulus (i.e. emotional face) was presented on the left, and the probe appeared on the right, a slower response time is expected because anxious individuals will be attending to the threatening face on the left, and it will take time to avert their gaze to the right side of the screen where the probe was presented. In contrast, if the target is presented on the left, followed by the probe on the left, a faster response time is expected because no change in attention is required.

A bias was indicated when participants responded more slowly to incongruent trials in comparison to congruent trials (MacLeod & Mathews, 1988). This was an indication that the participant was spending more time attending to the targets than the controls. Consistent with MacLeod and Mathews (1988), the following threat bias formula was used: 
\[
\frac{1}{2} \left( (TlP - TrPl) + (TrPr - TlPr) \right),
\]
where \( T \) = target, \( P \) = probe, \( l \) = left position, and \( r \) = right position. That is, threat bias scores reflect the difference between the average response times to the incongruent presentation of the probe and the congruent presentation of the probe. Positive scores indicate biases toward the emotionally laden face.

**Family socialization practices.** The Family Expressiveness Questionnaire (Halberstadt, 1986; FEQ) was used as a measure of emotion socialization practices within the home. The FEQ is a retrospective measure of the overall expressiveness of emotion within the home, and can be likened to modelling of both nonverbal and verbal expression of emotion in the home. Adolescent to adult-aged children rate the frequency of overall expressiveness in their families while growing up. The questionnaire consists of 40 scenarios involving emotion expression (e.g., “How often did members of your
family cry after an argument?”), which are rated using a 9 point frequency scale: 1 (not at all frequent in my family) to 9 (very frequently in my family). The FEQ has 4 subscales, developed along affective (negative to positive) and power (submissive to dominant) dimensions. The subscales include: Positive Dominant (PD), Positive-submissive (PS), Negative-Dominant (ND), and Negative-Submissive (NS) expression of emotion (see Table B1).

Halberstadt (1986) reported adequate reliability. In the test construction sample, \( r_\alpha = .88 \) for PS, \( r_\alpha = .87 \) for PD, \( r_\alpha = .75 \) for NS, and \( r_\alpha = .88 \) for ND. Consistent with these results, in the current study, \( r_\alpha = .88 \) for PS, \( r_\alpha = .85 \) for PD, \( r_\alpha = .74 \) for NS, and \( r_\alpha = .87 \) for ND. Halberstadt (1986) indicated that test-retest reliability ranged from .89 to .91, when the FEQ was administered 10 days apart. Moreover, adequate criterion validity was also noted (see Halberstadt, 1986).

Community/subcultural socialization practices. The Code of the Street Questionnaire (Stewart, Schreck, & Simons, 2006; CSQ) was used as a measure of emotion socialization, and more specifically, display rules within the local community. The CSQ was initially developed to quantify Anderson’s (1999) ideas about street codes that youth abide by in an effort to maintain the respect of others. These codes regulate the use of violence within local communities. Moreover, they regulate the use of aggression, and encourage violent retaliation in response to perceived disrespect. Consequently, endorsement of these codes may reflect acceptance of “display rules” within the local community, and thus, a measure of emotion socialization practices. The CSQ was developed with adolescents within violent neighborhoods, and thus, deemed particularly relevant to the current sample of participants.
The CSQ is a 7-item self-report questionnaire (see Table B2). In Stewart et al. (2006) instructions, adolescents were asked to indicate the extent to which it is acceptable to express aggression (e.g., “it is important to show others that you cannot be intimidated”) on a 4 point Likert scale (1 = strongly disagree to 4 = strongly agree). The \( r_\alpha \) reported by Stewart et al. ranged from .78 to .80. In the current study the value was .85.

**Cultural mistrust.** The Cultural Mistrust Inventory (Terell & Terell, 1981; CMI) was initially developed to measure African Americans’ level of mistrust of Caucasian American society in the domains of education, work, relationships, politics, and law. It is a measure of the degree to which Blacks trust Whites. This is not a measure of emotion socialization. However, it is relevant because it evaluates cultural mistrust (Whaley, 2001).

The original measure asked African Americans to rate 48 items (e.g., “white people usually keep their word”) on a 10 point Likert scale (0 = not in the least agree to 9 = entirely agree). The measure has 4 subscales (i.e., Business and Work, Education and Training, Interpersonal Relations, Politics and Law). In Whaley’s (2002) psychometric analysis of the CMI, he indicated that \( r_\alpha = .85 \) for the total CMI, \( r_\alpha = .71 \) for business and work, \( r_\alpha = .63 \) for education and training, \( r_\alpha = .43 \) for interpersonal relations, and \( r_\alpha = .63 \) for politics and law. Whaley (2000, 2001a, 2002) also established adequate validity for the CMI. In the current study, particular interest was paid to the subscale for interpersonal relations, \( r_\alpha = .85 \).

The wording was adapted for this study so that the measure would be inclusive of different cultures’ mistrust of mainstream society (e.g., “people from mainstream culture
rarely keep their word”). The revised scale is included in Table B3. Although it is appreciated that individuals will perceive “mainstream” differently, it is expected that most will identify mainstream culture as the popular culture of European descendants, and were instructed to do so. It was similarly appreciated that not all of the participants in this study will be from ethnic minority groups. However, minority status is not a prerequisite for holding an opinion regarding trust of members of mainstream culture.

Despite the adjustments to the wording, which made the questionnaire more appropriate for most of the non-Black participants, there was considerable variance in the understanding of the measure, which was dependent on race. That is, extensive explanations of the meaning of mainstream culture were provided, after which youth still sometimes said that they did not understand. This led to 33% of missing data, 70% of which was contributed by non-black youth. Consequently, it was determined that the missing data was systematic, and likely related to non-Black youth having difficulty understanding the distinction between “in” and “out” groups (i.e., mainstream and fringe cultural groups). The CMI was therefore removed from the analyses in the study.

**Alexithymia.** The 20-Item Toronto Alexithymia Scale (Bagby, Parker, & Taylor, 1994; TAS – 20) was used to determine youths’ ability to understand and express emotions (see Table B4). It is the most widely used self-report measure of alexithymia. Participants responded to 20 items (e.g., “I am able to describe my feelings easily”), each of which was rated using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). It has 3 subscales (difficulty identifying feelings, difficulty describing feelings, and externally oriented thinking). The authors note that total scores between 52 and 60 indicate possible alexithymia, and scores above 60 being consistent with
alexithymia. The TAS-20 has shown adequate reliability and validity (Bagby, et al.; Parker, Taylor, & Bagby, 2002, 2004). Bagby et al. reported in the test construction sample, $r_\alpha = .81$ for the total scale. In the current study, the total TAS-20 score $r_\alpha = .75$. 
Results

Preliminary Analyses

A brief overview of the mental health profiles of youth is provided prior to addressing the research questions. The prevalence rates of psychopathology based on the clinical, psychosocial, and validity subscales of the APS are presented in Table 2. Tables 3-7 further explore rates of clinical psychopathology based on sample demographics. Table 8 details the comorbidity rates within the sample. From these tables, it is particularly noteworthy that 84.4% of the sample met criteria for at least one DSM-IV diagnosis, and 55.4% met criteria for at least two. Conduct Disorder had the highest prevalence rate with 66.7% of participants meeting criteria according to the APS. Of the DSM-IV related subscales, GAD had the lowest prevalence rate at 7.8%. Moreover, it is noteworthy that of the 56 youth of Afro-Caribbean or African descent in this study, none of these youth endorsed clinically significant GAD. However, of the remaining 35 youth from “other” ethnic groups (i.e., European, Native, Arab, Latin, South Asian, East Asian), 20.6% endorsed clinically significant GAD. Also of note, Native youth consistently endorsed the greatest amount of psychopathology. However caution is needed in interpreting these results because of the small sample of Native youth ($n = 7$).

Not included in the above mentioned tables, but similarly noteworthy, 26% of participants were in the “possibly alexithymic range,” and 14% were in the “alexithymic range” on the TAS-20.

Mental Health among Incarcerated Youth

The first aim was to profile the mental health of youth in custody and detention. Profile analysis was used to determine if males and females of differing ethnic origins

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4 Results are presented by hypotheses outlined in the “aims of current study” section.
had similar profiles on APS-SF subscales. That is, sex (i.e., male/female) and ethnicity (i.e., Afro-Caribbean/African, European, Native, and “Other Origins) were used as between subject factors, and psychopathology subscales were used as within-subjects factors (i.e., conduct, substance abuse, generalized anxiety, post-traumatic stress, and depression). Given that the assumption of sphericity was rejected, Greenhouse-Geisser corrections were used in the analyses (Tabachnick & Fidell, 2007).

The data suggested a statistically significant difference across APS-SF psychopathology categories, $F(2.29, 187.92) = 31.20, p < .001$, partial $\epsilon^2 = .28$, with the slopes between line segments differing significantly (Figure 3). More specifically, the externalizing subscales of conduct disorder and substance abuse did not differ significantly, $M_{\text{diff}} = -5.16T$, $p = .08$. In addition, the internalizing subscales did not differ significantly, with the exception of major depression having significantly lower average scores than post-traumatic stress, $M_{\text{diff}} = -2.22T$, $p = .02$. Largely accounting for the variance in the profile (i.e., absence of “flatness”) was pronounced differences between externalizing and internalizing subscales. That is, average $T$ scores for conduct were significantly greater than generalized anxiety ($M_{\text{diff}} = 14.47T$, $p < .01$), post-traumatic stress ($M_{\text{diff}} = 12.41T$, $p < .01$), and major depression ($M_{\text{diff}} = 14.62T$, $p < .01$). Similarly, scores for substance abuse were significantly greater than each of the internalizing subscales: generalized anxiety, $M_{\text{diff}} = 19.62T$, $p < .01$; post-traumatic stress, $M_{\text{diff}} = 17.57T$, $p < .01$; and major depression, $M_{\text{diff}} = 19.78T$, $p < .01$.

Overall, males and females had “equal levels” and did not differ significantly when the five psychopathology subscales were averaged. That is, males ($M = 63.93T$) and

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5 Although raw scores from the APS were used in the remaining analyses, to address this particular aim, $T$ scores were used to ensure that the same metric was used when comparing across subscales of the APS (Maza & Reynolds, 2001; Reynolds, 2000).
females ($M = 65.36$ $T$) did not differ with respect to psychopathology, $F (1, 82) = .22, p = .64$ (Figure 4). In contrast, there was a significant main effect of ethnicity on psychopathology, $F (3, 82) = 3.07, p = .03$, partial $\epsilon^2 = .10$ (Figure 5). The profile suggested that native youth had significantly higher scores than youth from “other” origins (i.e., East Asian, South Asian, Arab, Latin), $M_{diff} = 11.45T, p = .02$, youth from European origins, $M_{diff} = 10.52T, p = .01$, and youth from African/Afro-Caribbean origins, $M_{diff} = 13.87T, p < .001$. It is also noteworthy that this profile did not change significantly when sex was also considered, $F (3, 82) = 1.37, p = .26$ (Figure 6). More specifically, the differences between ethnic groups in overall psychopathology were consistent for both males and females. An interaction between sex and ethnicity on overall psychopathology was not observed.

A significant interaction between sex and psychopathology was not observed, $F (2.29, 187.92) = 1.24, p = .29$ (Figure 7). The profiles of males and females were largely parallel with respect to psychopathology. That is, both males and females tended to have higher scores on externalizing than internalizing subscales. Similarly non-significant findings were observed regarding the interaction between ethnicity and psychopathology, $F (6.88, 187.92) = 1.56, p = .15$. Again, the profiles between ethnic groups were largely parallel across psychopathology (Figure 8). However, the interaction between sex, ethnicity and psychopathology approached significance, $F (6.88, 187.92) = 1.88, p = .08$ (Figure 9). Although insignificant, a trend was developing that suggested similar profiles for males, regardless of ethnic origin, where they had higher scores on externalizing scales, with fewer endorsements of internalizing difficulties. Although similar to the profile observed when sex was not considered (see Figure 8), Afro-Caribbean/African
males had the lowest scores. The female data however, suggested a departure from the original profile. That is, females of European, Native, and to a lesser extent “other” origins tended to have flatter profiles than their male counterparts. These groups endorsed more ubiquitous levels of distress, while females of Afro-Caribbean origins paralleled the male profile.

Additional analyses. In an effort to further explore these data, mental health was examined in relation to additional demographic characteristics of the sample (i.e., housing, living arrangements, maternal education, and expressive language). These data are included in Appendix C.

Attentional Biases

Only response latencies from correct responses were analyzed (Carlson & Reinke, 2008; Cooper & Langton, 2005; Joorman et al., 2006; Mogg & Bradley, 1999). Participants averaged less than one error per 80 trials, and the error rate was .9%. Times that were two standard deviations above or below the mean response time for each participant were excluded. Response times two standard deviations below were considered errors of anticipation, and response times two standard deviations above the mean times for each participant were considered lapses in concentration (Cooper & Langton, 2005; Mogg & Bradley, 1999). On average, each participant made 3.11 concentration errors and .36 anticipatory errors over the 80 trials. Overall, 4.39% of the dot probe data were deleted because of concentration and anticipation errors.

Regarding the physical characteristics of the faces, response times did not differ based on the sex of the actor depicted in the image. That is, the average response time to neutral female faces ($M = 430.15$ms) did not differ significantly from the average
response time to neutral male faces ($M = 425.17$), $t (90) = 1.41, p = .16$. Similarly, there were no significant differences in response times between angry male faces ($M = 437.68$) and angry female faces ($M = 438.99$), $t (90) = -.57, p = .57$. There were also no significant differences in response times between sad male faces ($M = 438.86$) and sad female faces ($M = 440.03$), $t (90) = -.40, p = .69$.

Incarcerated youth had attentional biases toward angry faces. Following the calculations outlined by MacLeod and Matthews (1986), the average threat bias scores to angry faces was 3.90ms, which was significantly different than zero, $t (90) = 2.32, p = .02, d = .24$ (Table 9). Even youth who only endorsed externalizing disorders on the APS-SF had attentional biases toward angry faces ($M = 4.72$ms) that approached significance from zero, $t (48) = 1.93, p = .06$. In contrast, youth with internalizing difficulties did not have attentional biases toward angry faces ($M = 1.03$ ms) that were significantly different from zero, $t (25) = .38, p = .71$ (Figure 10). Despite the observed discrepancy, the difference in bias scores between youth who only endorsed externalizing disorders and youth who endorsed internalizing or mixed disorders was not significant, $t (73) = .95, p = .35$.

With respect to bias scores toward sad faces, although the mean bias score for sad faces was greater than zero ($M = 3.11$ms), it was not significantly different than zero, $t (90) = 1.70, p = 0.09$. Similarly, youth who only endorsed externalizing disorders did not present with attentional bias scores toward sad faces ($M = 3.08$) that were significantly different from zero, $t (48) = 1.26, p = .21$. Also consistent with these findings, although youth who endorsed internalizing difficulties had bias scores that were positive ($M = 5.17$), the bias score was not significantly different from zero, $t (25) = 1.44, p = .16$. 
In summary, incarcerated youth in this sample demonstrated significant attentional biases toward angry, but not sad faces.

**Socialization of Emotion**

Hierarchical multiple regressions were used to determine the differential impact of socialization practices on psychopathology. Consistent with the assertion that the most proximal factors will contribute the most variance, intrapersonal characteristics (i.e., sex, ethnicity, and expressive language abilities) were entered first in the regressions, followed by family socialization practices, and community factors (i.e., street codes). Prior to detailing the results, the data reduction procedure is detailed.

Given the strong positive correlation (see Table 10) between conduct and substance abuse, as well as between generalized anxiety, post-traumatic stress, and major depression on the APS-SF, principal components analysis with varimax rotation was used to extract an externalizing and an internalizing component respectively. These components were considered better indicators of externalizing and internalizing behaviours than the separate subscales. Moreover, using the components provides a more parsimonious means of detailing the results.6

With respect to the first hypothesis, negative dominant family expressed emotion (e.g., modelling anger in the home) and abiding by sub-cultural “street codes,” accounted for 23.3% of the variance in externalizing symptoms after controlling for the sex, ethnic origin, and verbal language abilities of participants, $F(5, 82) = 5.56, p < .001$. More specifically, 11.5% of the variance was accounted for by family expressed emotion, $t(82) = 2.19, p = .03$, and 11.8% of unique variance was accounted for by street codes, $t(82) = \ldots$

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6 Internalizing and externalizing composites were also computed by adding the raw scores of subscales on the APS-SF together. This method yielded the same pattern of results as the principal components analysis. However, the components analysis was a more conservative approach, and thus, was retained in the text.
3.61, p < .001 (Table 11). Although not in the initial hypotheses, given that negative dominant socialization of emotion in the home was also correlated with internalizing symptoms, post-hoc analyses were computed. Intrapersonal characteristics, negative dominant socialization in the home, and street codes, contributed 17.2% of the variance in internalizing symptoms, \( F(5, 82) = 3.40, p < .01 \). Intrapersonal characteristics accounted for 6.7% of the variance, most of which was explained by ethnic origin, \( t(82) = 2.04, p = .05 \). Family expressed emotion contributed 10.4% of unique variance, \( t(82) = 3.12, p < .01 \), and street codes did not contribute any unique variance in internalizing symptoms, \( t(82) = -.25, p = .81 \).

The second hypothesis suggested that after controlling for intrapersonal characteristics, negative submissive expression of emotion in the home and failing to adopt street codes, would contribute to the endorsement of internalizing symptoms. Overall, none of these factors contributed unique variance in internalizing symptoms, \( R^2 = .10, F(5, 82) = 1.86, p = .11 \) (Table 12). Of the 6.7% of variance accounted for by intrapersonal factors, only ethnic origin contributed unique variance, \( t(82) = 2.07, p = .04 \). Negative submissive family expressed emotion approached significance, \( t(82) = 1.61, p = .11 \), but contributed only 2.3% of unique variance. Street codes did not contribute significant variance, \( R^2 = .01, t(82) = 1.04, p = .30 \).

**Mediation.** Figure 1 outlines the mediation model. Preacher and Hayes’ (2004, 2008a) approach to testing mediation, as well as their SPSS macro for multiple mediation, was used. More specifically, mediation was satisfied if the tests for indirect effects \((ab)\) were significant, and in the direction predicted. Sobel tests were not used because of the concerns that the distribution of products \((ab)\) might not be normal.
because of the limited sample size in this study (Bollen & Stine, 1990; MacKinnon, Fairchild, & Fritz, 2007; MacKinnon, Lockwood, Hoffman, West, et al., 2002), and thus, a non-parametric bootstrapping approach was used (Preacher and Hayes, 2004, 2008a, 2008b).

Alexithymia did not mediate the relationship between negative dominant family expressed emotions (FEM) and externalizing symptoms. Negative dominant FEM predicted externalizing symptoms before the inclusion of alexithymia in the model as a mediator, $\beta = .31, t(84) = 3.07, p = .003$. Although the $\beta$ weight was reduced after controlling for alexithymia, $\beta = .29, t(84) = 2.82, p = .006$, the indirect effect was non-significant because zero fell within the bootstrapped confidence interval, 95% CI [-.0016, .0057]. In contrast, post-hoc analyses suggested that alexithymia mediated the relationship between negative dominant FEM and internalizing symptoms, $\beta$ reduced from .31 to .17, $p < .05$, 95% CI [.0012, .0152].

Alexithymia did not mediate the relationship between negative submissive emotion expression and internalizing symptoms. Negative submissive FEM did not predict internalizing symptoms before the inclusion of the alexithymia, $\beta = .17, t(84) = 1.58, p = .12$, but did so after controlling for alexithymia, $\beta = .18, t(84) = 2.09, p = .04$. There was no mediation because the bootstrap indicated that the indirect effect was not significantly different from zero, 95% CI [-.0125, .0068]. If it were significant, the presence of alexithymia in this model would have suggested “inconsistent mediation” because the trend suggested that alexithymia had a suppressive effect on the relationship between negative submissive FEM and internalizing symptoms (Mackinnon, Krull, & Lockwood, 2000; Rucker, Preacher, Romala, & Petty, 2011). More specifically, the
indirect effect \((ab)\) had the opposite sign than the direct effect \((c')\). Accounting for this effect was the negative relationship between negative submissive FEM and alexithymia \((a)\), \(t(84) = -0.23, p = .82\), and the positive relationship between alexithymia and internalizing symptoms \((b)\), \(t(84) = 6.65, p < .001\). Consequently, the positive direct relationship \((c')\), and the negative indirect relationship \((ab)\) were in opposition, and resulted in the total effect \((c)\) of negative submissive FEM on internalizing symptoms, which was not significantly different from zero. Although the trend suggested inconsistent mediation, again, it is noteworthy that the indirect effect was not significantly different from zero.
Discussion

The overarching aim of this study was to profile the mental health of youth in southern Ontario’s justice system, and explore whether socialization practices contribute to discrepancies in endorsement of externalizing and internalizing symptoms. To this end, the arguments were divided into three sections. First, the mental health profiles of incarcerated youth were detailed. Distinctions between endorsement of externalizing and internalizing symptoms were highlighted, and differences related to demographic data were outlined. Second, an implicit task was used to evaluate attentional biases toward threatening stimuli. This was done to demonstrate that incarcerated youth had the underlying cognitive biases that are consistent with people who have internalizing psychopathology, despite their tendency not to overtly disclose such difficulties. Third, socialization factors that contributed to the differential expression of externalizing and internalizing symptoms were outlined, and a mechanism by which emotion socialization practices in the home predicted psychopathology was presented.

Mental Health among Incarcerated Youth

In accord with expectations and previous studies (Abram, Teplin, McCelland, & Dulcan, 2003; Bickel & Campbell, 2002; Teplin et al., 2002; Ulzen & Hamilton, 1998; Wasserman et al., 2005), the APS-SF data indicated that incarcerated youth endorsed significantly more externalizing behaviour than internalizing symptoms. Moreover, rates for conduct disorder were the highest, at 67%, followed by substance abuse, at 61%. Rates for internalizing disorders were significantly lower. Of these, post-traumatic stress disorder was the highest at 29%, followed by depression at 12%, and generalized anxiety was the lowest at 8%. These data establish the problem under investigation, and are
consistent with the anecdotes provided in the introductory remarks. That is, incarcerated youth readily present themselves as delinquents, but endorse fewer internalizing symptoms.

With respect to how the mental health profiles of incarcerated youth differed by intrapersonal factors (i.e., sex and ethnicity), profile analysis suggested that males and females did not differ significantly in their endorsement of psychopathology. This was inconsistent with previous research, which suggested that incarcerated females had higher rates of internalizing, but not externalizing symptoms, than incarcerated males (Abram, et al., 2003; Teplin et al., 2002; Wassermann et al., 2005). Moreover, these data are incongruent with the general tendency of females to express more submissive emotions than males (Brody & Hall, 1993; Wong, McElwain, & Halberstadt, 2009), and parents’ differential socialization of boys and girls. Regarding the latter, parents discuss submissive emotions (Garner, Robertson, & Smith, 1997; Eisenberg, Cumberland, & Spinrad, 1998; Fivush, 1989), and reinforce the expression of submissive emotions (Garside & Klimes-Dougan, 2002; Klimes-Dougan, Brand, & Zahn-Waxler, 2007), more frequently with their daughters than their sons. Consequently, it was expected that females would be more likely to readily express these emotions, and to endorse them on a standardized measure of psychopathology like the APS-SF. Although the trend in the data suggested some corroboration of the sentiments of these studies, the small sample of females in this study contributed to insufficient power to adequately detect sex differences.

Incarcerated youths’ mental health profiles differed with respect to ethnicity. That is, Native youth endorsed significantly more overall psychopathology than any of the
other ethnic groups. Although significant, this was based on a very small sample of Native youth (7.7%). Of even greater interest is overall low level of endorsement of psychopathology by African and Afro-Caribbean youth, who represented 62% of youth in the sample. That is, African/Afro-Caribbean males demonstrated the lowest level of endorsement of symptoms, especially internalizing distress. A striking example is that none of the Afro-Caribbean/African youth in the sample met criteria for generalized anxiety according to the APS-SF, and less than one percent met criteria for depression. In contrast, 19% of Native youth met criteria for generalized anxiety, and 43% met criteria for depression. That said, although Afro-Caribbean/African youth in the sample endorsed low levels of psychopathology in comparison to the other ethnic groups, on average, they still reported clinically significant levels of externalizing problems.

Racial, not ethnic or cultural, differences among psychopathology rates are well documented in American literature, with Black youth tending to endorse fewer symptoms than non-Black Hispanics (Teplin et al., 2002; Wassermann, et al., 2005). American research was the initial impetus for suggesting that Black youth in the current study would endorse less psychopathology than non-Blacks. However, given that Blacks in Canada and the US have dramatically different histories and cultures, it was prudent to provide a cultural, rather than a racial, explanation for the low rates of reporting of internalizing psychopathology among Black youth in this study.

Lower reporting of internalizing problems from Afro-Caribbean and African youth was expected because of what is known about the specific socialization practices within these homes and communities. For example, harsh/punitive disciplinary practices are a hallmark of Caribbean parenting (Gopaul-McNicol, 1999; Payne, 1989; Smith &
Mosby, 2003; Steeley & Rohner, 2006). Such disciplinary strategies inhibit the expression of distress in the home because youth are too afraid to express their concerns. Youth abide by the notion that “children should be seen and not heard” at home, but express significant externalizing problems in their communities, where harsh parental consequences are not feared (Smith & Mosby, 2003; Triandis, 1995). In addition, Afro-Caribbean youth are disproportionately represented in violent and impoverished neighbourhoods (Adams, 2000; Arnold, 1982; 2006; Bankston & Zhou, 1997; Boutakidis, Guerra, & Soriano, 2006), where street codes are the rule (Anderson, 1994; 1999). The rules of the street, imposed by these local communities, inhibit the expression of internalizing problems, because signs of weakness (e.g., expressing sadness or worry) are punishable with ridicule, violence, or loss of property and respect. Overall, Black youth in this study likely report fewer internalizing problems because of culturally specific socialization practices in the home and community.

**Attentional Biases**

Clinical experience engendered the hypothesis that incarcerated youth are depressed and anxious, but do not readily express these difficulties. That is, they presented with tough exteriors, but as therapeutic relationships developed, these youth demonstrated indices of internalizing difficulties. They struggled with labeling and describing their affective experience, but the experience itself was most apparent. Unfortunately, there was little research to support this claim. However, in some ways the suggestion that youth in the justice system do not experience certain emotions is nonsensical. With loss comes sadness, with threat comes fear, with injustice comes anger. The piece that is more subjective and dependent upon socialization is what qualifies as a
loss, what is deemed a threat, and what is viewed as an injustice. These are social constructions. However, it can be argued that after many months of therapeutic engagement with these youth, they looked no different than youth who were referred for inpatient treatment. Their issues were the same: rejection, abandonment, and trauma. They just were not very good at talking about it, even when they wanted to. That is, they were not the type of youth who admitted they were up all night crying or, who “hugged it out” during a process circle on their units.

To help test what was gleaned from clinical experience, it was first necessary to demonstrate that incarcerated youth endorsed significantly more externalizing than internalizing psychopathology on a paper-pencil measure. These findings are displayed above. Second, it was necessary to use a task that did not require an overt response from the participants to show that internalizing symptoms are present among incarcerated youth. Consequently, a dot probe task was used to evaluate whether youth had attentional biases toward threatening and depressive stimuli. The former is a finding robustly found in anxious, but not in non-anxious populations (Bar-Haim, et al., 2007). The latter is a relatively new research finding among depressed individuals, when the correct stimuli and presentation times are used (Joorman, et al., 2007; Mogg & Bradley, 2005).

In line with expectations, incarcerated youth had attentional biases toward angry faces. Moreover, even youth who only endorsed externalizing disorders on the APS-SF had attentional biases toward angry faces that approached significance. That is, it was not those youth who actually acknowledged having internalizing difficulties that were driving this effect. These findings suggest that incarcerated youth, who present a tough exterior
and deny the existence of internalizing disorders, have cognitive biases similar to those youth who have clinical anxiety.

Unexpectedly, incarcerated youth who endorsed internalizing disorders did not have attentional biases toward angry faces. This non-significant result was surprising given the ubiquity with which such results are reported in the literature (c.f., Bar-Haim, et al., 2007). However, power was again insufficient, with too few youth endorsing internalizing disorders on the APS.

Contrary to expectations, incarcerated youth did not have attentional biases toward sad faces. This was the case for both those youth who only endorsed externalizing disorders, as well as those youth who only endorsed internalizing disorders. It is noteworthy that results approached significance and were, in part, hampered by power. However, the non-significant findings are more closely related to limitations in design (see Limitations below), which did not allow for sufficient processing time to detect attentional biases toward depressive stimuli.

Socialization of Emotion

After establishing that incarcerated youth endorse significantly more externalizing than internalizing problems, despite some indication that they silently struggle with the latter, the next step was to explain the reason for the discrepancy in endorsement. To this end, the relationship between socialization practices and psychopathology was examined.

Hierarchical regression results indicated that after controlling for intrapersonal characteristics, externalizing symptoms among incarcerated youth are partially accounted for by home environments that model anger and aggression, and communities that value the similar negative dominant forms of emotion expression. Regarding internalizing
behaviours, negative dominant expression of emotion in the home also predicted internalizing symptoms, but community factors contributed no unique variance. Moreover, the modeling of sadness, worry, and embarrassment in the home did not predict endorsement of internalizing symptoms as anticipated. However, this relationship approached significance.

The findings related to the prediction of externalizing behaviour were expected because a few studies have connected externalizing behaviour to modeling of negative dominant emotions in the home (Garside & Klimes-Dougan, 2002; Klimes-Dougan, et al., 2007; O’Neal & Magai, 2005). Moreover, street codes contribute to greater victimization and perpetration of violence (Stewart, Schreck, & Brunson, 2008; Stewart, Schreck, & Simons, 2006).

In contrast, the findings related to the prediction of internalizing behaviours were mixed. Consistent with expectations, youth who lived in communities that valued violence did not endorse internalizing symptoms. That is, expression or acknowledgement of sadness and anxiety is unacceptable in violent communities, and leads to ostracism and or punishment (Stewardt, Schreck, & Brunson, 2008). Moreover, the trends suggested that with added power, negative submissive emotion expression in the home might be related to endorsement of internalizing symptoms. This is consistent with the notion that modeling of negative submissive emotions in the home would allow for safe exploration of, greater attunement toward, and permission to express internalizing distress (Denham & Kochanoff, 2002; Halberstadt, 1991; 1986).

However, it was unexpected that negative dominant expression of emotion within the home also contributed to the endorsement of internalizing symptoms. That is, families
that express high levels of anger in the home predicted internalizing problems, suggesting that these practices might be less about modeling discrete emotions, than about predicting undifferentiated distress. There is some precedent for this suggestion. Garside and Klimes-Dougan (2002) as well as Klimes-Dougan et al. (2007) reported that modeling of negative dominant emotions in the home was associated with both externalizing and internalizing outcomes. The data from the mediation model helps to explore the process by which this occurs further.

Although it approached significance, alexithymia did not mediate the relationship between negative dominant family expressed emotion and externalizing symptoms. However, it did mediate the relationship between negative dominant emotion expression in the home and internalizing symptoms. Again, these latter findings were unexpected as the emotion socialization literature suggests that negative dominant expression of emotion in the home gives the message to youth that expressing submissive emotions is unacceptable (Denham & Kochanoff, 2002; Halberstadt, 1986; Klimes-Dougan et al., 2007; Saarni & Buckley, 2002). Integrating these findings, it is likely that although modeling anger and contempt in the home predicts greater psychopathology (Garside & Klimes-Dougan, 2002; Klimes-Dougan, et al., 2007; O’Neal & Magai, 2005), these family emotion socialization practices might compromise incarcerated youth’s ability to generally understand and express emotions. Youth are too busy seeking cover to adequately process, understand, express, or regulate emotions. It is likely these broader difficulties have contributed to the undifferentiated distress observed (Haviland et al., 2004; Hendryx, et al., 1991; Karukivi et al., 2010; Manninen et al., 2011; Marchesi, et al.,
This study demonstrated that incarcerated youth have high rates of psychopathology, with conduct disorder and substance abuse being the most prevalent and endorsed with greater frequency than anxiety and depression. This study further demonstrated that youth in the justice system have cognitive biases consistent with those observed in clinically anxious populations, despite their infrequent endorsement of anxiety disorders when asked to self-report their difficulties. Moreover, socialization practices in the home predicted both externalizing and internalizing problems, while sub-cultural practices predicted only externalizing difficulties. Negative dominant emotion socialization practices within the home predicted incarcerated youths’ ability to identify and describe emotions, which subsequently predicted psychopathology, particularly internalizing symptoms.

Limitations

Limitations related to design and measurement is detailed below. Regarding design, specific attention was devoted to the absence of a control group and the set up of the dot probe in detecting biases toward sad faces. Moreover, the limitations inherent in using each measure in the study are reviewed.

Research design. This study did not contain a control/comparison group. Consequently, no comparisons between the prevalence rates of incarcerated youth and community and/or clinical populations could be made. Moreover, the ability to draw comparisons from the dot-probe data with non-anxious/non-depressed populations was
limited. That is, although it was evident that incarcerated youth in this study had biases toward threatening stimuli, the possibility that similar bias exists among non-anxious or depressed community populations could not be ruled out.

With respect to limitations in the dot probe design, those researchers who have found significant biases among depressed populations, used stimuli specific to depression and allowed prolonged exposure to the stimuli (Joorman et al., 2007; Mogg & Bradley, 2005; Neshat-Doost et al., 2000; Wells & Matthews, 1994). Although this study used stimuli specific to depression, prolonged exposure to the stimuli was not allowed (e.g., 1500ms). This was unfortunate because cognitive biases in depression, being more elaborate processes (Joorman, et al., 2007; Williams et al., 1996, 1997), are likely only observed as stimulus presentation times increase to 1500ms or greater (Mogg & Bradley, 2005).

**Measures.** There were several limitations associated with the interpretation of the dot probe paradigm. For example, a premise of this study was that if incarcerated youth are anxious, they should demonstrate attentional biases toward threatening stimuli. However, the presence of an attentional bias toward threatening stimuli does not necessarily mean that the participant is anxious. Attentional biases with the dot probe have been discovered in eating disorders patients (Ehrhardt, Weiss, Musial, & Zimmanyi, et al., 2003), chronic pain sufferers (Dehghani, Sharpe, & Nicholas, 2003), and smokers (Hogarth, Mogg, Bradley, Duka, & Dickinson, 2003). Although it can be argued that each of these conditions likely has a considerable anxious component, these studies nonetheless demonstrated attentional biases. The dot probe is not an appropriate measure for evaluating clinical anxiety or depression in youth. Rather, it is used here to assert that
the cognitive biases incarcerated youth demonstrate on this task are consistent with those found in anxious youth, and have not been demonstrated in non-anxious populations. Consequently, it is suggested that incarcerated youth have cognitive biases that are largely specific to youth with anxiety.

Using the APS-SF as a measure of psychopathology compromised the ability to make diagnostic opinions. Although the APS-SF is based on DSM-IV criteria, it is not a diagnostic tool, and does not replace the use of clinical interviewing. Consequently, this study can make no conclusions about whether youth have DSM-IV diagnoses. Structured and semi-structured interviews (e.g., DISC, K-SADS) were avoided because of concerns with lengthy administration times and the professional requirements needed for administration. Consideration was given to using other measures of problem behaviours among youth (e.g., CBCL, BASC2), but the APS-SF was favoured because of its parallels with DSM-IV criteria. Moreover, consideration was given to using the full form of the APS, but concern with the lengthy administration time eliminated it from consideration.

Three issues were identified with measurement of alexithymia in this thesis. First, the TAS-20 does not differentiate which emotions youth have difficulty understanding and expressing. This study was unable to draw conclusions about which emotions were compromised amongst these youth, and thus, the relationships between these deficits and differential reporting of psychopathology could not be made. Second, unlike its similar counterparts (Halberstadt, Denham, & Dunsmore, 2001; Mayer & Salovey, 1997; Saarni, 1990), the TAS-20 makes no mention of emotion regulation. Although constructs like emotional competence and emotional intelligence suggest that difficulty with labelling,
describing, and regulating emotions are connected, emotion regulation is not part of the alexithymia construct. Perhaps a broader measure of emotional competency or intelligence might have been a more suitable measure in helping to further understand the relationship with psychopathology. Third, using a self-report measure to assess emotion understanding and expression suggests that youth have enough self-awareness to provide an accurate report, which might not be the case if the assumption is already that they have a limited understanding of their emotional experiences. Consideration was given to the use of observational and experimental methods to determine emotion expression and understanding. However, concerns with video and/or audio taping youth in custody and detention prohibited such approaches. Moreover, the literature in this area favours naturalistic observation of understanding and expression (Klimes-Dougan & Zeman, 2007), which was not possible given limited access to parents, and no access to the home environment. Consideration was also given to using the Affect Knowledge Test (see Dehnham & Kochanoff, 2002; Denham, Zoller, & Couchoud, 1994). However, this approach is better suited for younger children.

Although there were three possible family socialization practices that could have been evaluated (i.e., modelling, contingency management, and coaching), the FEQ is really only a measure of modelling of emotions within the home. Consideration was given to measuring contingency management and coaching, but these approaches are more difficult to capture in an adolescent self-report measure, and tend to demand observation with parents (Klimes-Dougan & Zeman, 2007), with whom there was limited access. Moreover, despite some debate over the use of observational versus self-report measures (Moscowitz & Shwartz, 1982), many researchers in emotion socialization have
used child report because of the difficulty observing real-life moments when parents respond to their children’s negative emotions. Moreover, self rather than parent-report was used, because the child’s perception of the socialization practices in the home were deemed more useful than “accurate” reports that would be obtained from parents or observational techniques.

With respect to the use of the CMI, several additional measures of mistrust were considered. For example, use of the Distrust, Perceived Hostility of Others, and False Beliefs and Perceptions subscales of the Psychiatric Epidemiology Research Interview (PERI; Dohrenwend, Levav, & Shrout, 1986; Dohrenwend, Shrout, Egri, & Mendelsohn, 1980) was considered. The CMI was deemed better at assessing lack of trust at the cultural level than the PERI (Whaley, 1997; 1999). The Distrust of Whites subscale on the African American Acculturation Scale (Landrine & Klonoff, 1996) was also considered. However, given its independent use in a single published study, and lack of available psychometric information, the CMI was deemed a more suitable instrument. Lastly, use of interpersonal measures of distrust or paranoia was dismissed because of the possible differences between interpersonal distrust and cultural mistrust (Whaley, 2001a).

Overall, the concepts contained in the CMI were too challenging to explain for many of the youth in the sample, particularly those who did not identify with “out-groups”. The concept of culture, and particularly identification with mainstream culture, was too evasive to explain in a consistent way to youth in this study.

**Future Research**

Future research should consider addressing the limitations mentioned above. More specifically, there is utility in extending the dot probe paradigm to include trials...
with stimulus presentation time of 1500ms, so that attentional biases toward depressive stimuli can be better evaluated. There is also utility in including a non-clinical community group to compare findings and demonstrate that the current dot probe paradigm does not yield results among non-anxious, non-depressive, controls.

Future research can begin to look at a tiered model of socialization, which integrates the possibility that early socialization practices contribute to youths’ ability to understand, express, and regulate emotions, which leads to distress. However, later experiences with negative communities further socialize youth to express aggression. That is, further delineating emotional and behavioral socialization practices is prudent. To this end, substituting the alexithymia construct for a more inclusive construct like emotional competence or emotional intelligence might be fruitful. Furthermore, including a measure that deliberately explores display rules would bolster the design.

**Implications**

**Clinical implications.** The comorbid mental health profiles of incarcerated youth are often overshadowed by their felonious behaviour. This study demonstrated that incarcerated youth have cognitive underpinnings similar to youth who have significant internalizing issues. However, internalizing symptoms are largely ignored because of the widespread failure of clinicians to more deeply assess such difficulties. Consequently, internalizing problems go undiagnosed and untreated (Huizinga & Jakob-Chien, 1998), and recidivism rates increase as a result of not addressing the deeper issues (Dembo, Pacheco, Schmeidler, Fisher, et al., 1997; Timmons-Mitchell, Brown, Schulz, Webster, et al., 1997).
These data provide clinicians with important opportunities for change. Clinicians should pay close attention to the limitations of using standardize assessment measures with incarcerated youth. It has been mistakenly assumed that the measurement tools used are universal in their application, when they are actually developed for, and with, middle-class Americans of European origin (Dana, 2005). Clinicians unwittingly apply measures that are grounded in the empiricist tradition, which in turn, is rooted in western culture. Consequently, cultural specific measures are used (i.e., Eurocentric measures), but they are applied in a culture neutral fashion (Sue, 1999). Equally concerning is the issue of whether Western diagnostic categories are even relevant to ethnic/cultural minorities. Again, these categories were constructed by, and for, middle-class White Americans (Dana, 2005). The assumption implicit in DSM-IV diagnostic criteria are that the constructs espoused are objective and exist across cultural groups (Draguns, 1996, 1997; Gopaul-McNicol & Armour-Thomas, 2002). However, research findings contradict this notion (Draguns, 1980a, 1980b; Sanua, 1980; Marsella, 1980), and suggest that multicultural assessment should be considered when making diagnostic decisions (Malgady, 1996; 2000). With Canada’s changing ethnic and cultural profile, best practice approaches for assessment are increasingly becoming less appropriate.

It would be an egregious error for clinicians to apply standard case formulation and diagnostic procedures universally (Dana, 2005; Ponterotto, Fuertes, & Chen, 2000; Ridley, Li, & Hill, 1998; Roysircar-Sodowsky & Kuo, 2001), particularly in Southern Ontario’s pluralistic cultural milieu. This issue is even more pronounced in Southern Ontario’s youth justice facilities, where ethnic minorities are disproportionately represented. Because of the lack of cultural sensitivity, delinquent behaviour is
misunderstood, and internalizing problems are being missed. The data gleaned from this study do not contest the notion that incarcerated youth meet diagnostic criteria for externalizing disorders. Rather, the data challenges the idea that such information is useful. That is, the issues central to youths’ delinquent behaviour and subsequent incarceration might be related to anxiety and depression, which goes unseen and untreated because of how they are socialized. To address this issue, youth who have not assimilated to western culture (e.g., incarcerated youth) should be assessed in a culturally competent manner. For example, in addition to using traditional assessment tools, it will be helpful to assess how youth are socialized in their homes and neighbourhoods.

**Social/political implications.** The cultural factors with which Blacks in the justice system and non-Blacks differ require attention. Studies exploring these issues should not focus solely on the obvious issues of poverty, living arrangements, family structure, but rather, they should also look in more detail toward cultural issues. Studies that explore acculturation and the path toward marginalization in Canada require greater consideration. That is, how connected are youth to mainstream society, how welcome do they feel in their schools and in their communities? Moreover, how connected do they feel to their native cultures, and in their homes? Rejection in either of these contexts may have deleterious effects.

In addition to studying cultural factors, researchers are charged with the task of better understanding differential access and utilization of mental health services, as well as the differential assignment of black youth to jail, and non-blacks to treatment. If the rates of psychopathology of these youth are similar to those observed in inpatient treatment settings, why then did Blacks make up 62% of youth in this sample, when they
likely constitute a far lower percentage of the youth in treatment settings. What if youth went to treatment to talk about their fathers not being around, or living apart from their mothers in the Caribbean while their visas were being obtained, or witnessing violence in their communities, or living in abject poverty, or their difficulty adjusting in school because they “talk different”, or not having a parent close at hand, or being hit at home with a switch, belt, or electrical cord. If marginalization puts youth on the fast track to delinquency, why have they not received treatment to address the reasons they feel marginalized?
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Table 1.  
Sample Characteristics

<table>
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<tr>
<th>Characteristic</th>
<th>% Participants</th>
<th>No. Participants (N=91)</th>
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<tbody>
<tr>
<td>Sex</td>
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<td></td>
</tr>
<tr>
<td>Male</td>
<td>85.7</td>
<td>78</td>
</tr>
<tr>
<td>Female</td>
<td>14.3</td>
<td>13</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-15</td>
<td>3.3</td>
<td>3</td>
</tr>
<tr>
<td>16-17</td>
<td>65.9</td>
<td>60</td>
</tr>
<tr>
<td>18-19</td>
<td>30.8</td>
<td>28</td>
</tr>
<tr>
<td>Ethnic Origin</td>
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<td></td>
</tr>
<tr>
<td>Caribbean</td>
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<td>45</td>
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<tr>
<td>European</td>
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<td>20</td>
</tr>
<tr>
<td>African</td>
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<td>11</td>
</tr>
<tr>
<td>Native</td>
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<td>7</td>
</tr>
<tr>
<td>Other a</td>
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<td>8</td>
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<td></td>
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<tr>
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<td>19</td>
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<td>1st Generation Canadian</td>
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<td>45</td>
</tr>
<tr>
<td>2nd Generation Canadian</td>
<td>3.3</td>
<td>3</td>
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<tr>
<td>3rd Generation or earlier</td>
<td>25.6</td>
<td>23</td>
</tr>
<tr>
<td>Living Arrangement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>44.4</td>
<td>40</td>
</tr>
<tr>
<td>Father</td>
<td>12.2</td>
<td>11</td>
</tr>
<tr>
<td>Both Parents</td>
<td>14.4</td>
<td>13</td>
</tr>
<tr>
<td>Other b</td>
<td>28.9</td>
<td>26</td>
</tr>
<tr>
<td>Government Housing</td>
<td>36.7</td>
<td>33</td>
</tr>
<tr>
<td>Highest Level of Education (Maternal)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completed Elementary School</td>
<td>16.7</td>
<td>15</td>
</tr>
<tr>
<td>Completed High School</td>
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<tr>
<td>Completed Post-Secondary</td>
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<tr>
<td>Unknown</td>
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<td>3</td>
</tr>
<tr>
<td>Unemployment</td>
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<td></td>
</tr>
<tr>
<td>Mother</td>
<td>20.0</td>
<td>18</td>
</tr>
<tr>
<td>Father</td>
<td>8.9</td>
<td>8</td>
</tr>
</tbody>
</table>

Note: a Corresponds to Arab, East Asian, South Asian, and Latin Ethnic Origins; b Corresponds to youth living independently, living in CAS custody, or living with an extended family member.
Table 2.  
*Prevalence Rates of Psychopathology*

<table>
<thead>
<tr>
<th>APS Categories</th>
<th>Percent in Clinical Range</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinical Categories</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct Disorder (CND)</td>
<td>66.7</td>
<td>60</td>
</tr>
<tr>
<td>Oppositional Defiant Disorder (ODD)</td>
<td>17.8</td>
<td>16</td>
</tr>
<tr>
<td>Substance Use Disorder (SUB)</td>
<td>61.1</td>
<td>55</td>
</tr>
<tr>
<td>Generalized Anxiety Disorder (GAD)</td>
<td>7.8</td>
<td>7</td>
</tr>
<tr>
<td>Post-Traumatic Stress Disorder (PTS)</td>
<td>28.9</td>
<td>26</td>
</tr>
<tr>
<td>Major Depression (DEP)</td>
<td>12.2</td>
<td>11</td>
</tr>
<tr>
<td><strong>Psychosocial Problems Categories</strong></td>
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<td></td>
</tr>
<tr>
<td>Anger Violence Proneness (AVP)</td>
<td>28.9</td>
<td>26</td>
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<tr>
<td>Academic Problems (ADP)</td>
<td>31.1</td>
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<tr>
<td>Self Concept (SCP)</td>
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<tr>
<td>Interpersonal Problems (IPP)</td>
<td>8.9</td>
<td>8</td>
</tr>
<tr>
<td>Suicide (SUI)</td>
<td>5.6</td>
<td>5</td>
</tr>
<tr>
<td>Eating Disturbance (EAT)</td>
<td>7.8</td>
<td>7</td>
</tr>
<tr>
<td><strong>Validity Scales</strong></td>
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<tr>
<td>Defensiveness (DEF)</td>
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</tr>
<tr>
<td>Consistency Response (CNR)</td>
<td>1.1</td>
<td>1</td>
</tr>
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</table>

*Note:* Psychopathology was determined by $T$ scores on the APS > 65.
Table 3.  
*Prevalence Rates of DSM-IV Psychopathology by Sex*

<table>
<thead>
<tr>
<th>Gender Prevalence Rates</th>
<th>Chi Square Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Conduct Disorder</strong></td>
<td></td>
</tr>
<tr>
<td>Male (n=77)</td>
<td>67.5 (n=52)</td>
</tr>
<tr>
<td>Female (n=13)</td>
<td>61.5 (n=8)</td>
</tr>
<tr>
<td><strong>Substance Abuse Disorder</strong></td>
<td></td>
</tr>
<tr>
<td>Male (n=48)</td>
<td>62.3 (n=48)</td>
</tr>
<tr>
<td>Female (n=7)</td>
<td>53.8 (n=7)</td>
</tr>
<tr>
<td><strong>Generalized Anxiety Disorder</strong></td>
<td></td>
</tr>
<tr>
<td>Male (n=4)</td>
<td>5.2 (n=4)</td>
</tr>
<tr>
<td>Female (n=3)</td>
<td>23.1 (n=3)</td>
</tr>
<tr>
<td><strong>Post Traumatic Stress Disorder</strong></td>
<td></td>
</tr>
<tr>
<td>Male (n=22)</td>
<td>28.6 (n=22)</td>
</tr>
<tr>
<td>Female (n=4)</td>
<td>30.8 (n=4)</td>
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<tr>
<td><strong>Major Depression</strong></td>
<td></td>
</tr>
<tr>
<td>Male (n=8)</td>
<td>10.4 (n=8)</td>
</tr>
<tr>
<td>Female (n=3)</td>
<td>23.1 (n=3)</td>
</tr>
</tbody>
</table>

*Note: Psychopathology was determined by $T$ scores on the APS > 65. *The expected value in each cell was less than 5, hence increasing the possibility of Type I error (Howell, 2002). $n$ does not sum within columns because of comorbidity between disorders on the APS-SF.*
Table 4.
**Prevalence Rates of DSM-IV Psychopathology by Ethnicity**

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>CAR (n=45)</th>
<th>AFR (n=11)</th>
<th>EUR (n=19)</th>
<th>NAT (n=7)</th>
<th>OTH (n=8)</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct Disorder</td>
<td>67.8 (n=31)</td>
<td>63.6 (n=7)</td>
<td>42.1 (n=8)</td>
<td>100.0 (n=7)</td>
<td>62.5 (n=5)</td>
<td>5.39</td>
<td>4</td>
<td>.25</td>
</tr>
<tr>
<td>Substance Abuse Disorder</td>
<td>62.2 (n=28)</td>
<td>45.5 (n=5)</td>
<td>68.4 (n=13)</td>
<td>67.1 (n=4)</td>
<td>50.0 (n=4)</td>
<td>2.31</td>
<td>4</td>
<td>.68</td>
</tr>
<tr>
<td>Generalized Anxiety Disorder$^a$</td>
<td>0.0 (n=0)</td>
<td>0.0 (n=0)</td>
<td>21.1 (n=4)</td>
<td>18.6 (n=2)</td>
<td>12.5 (n=1)</td>
<td>13.86</td>
<td>4</td>
<td>.008$^{**}$</td>
</tr>
<tr>
<td>Post-Traumatic Stress Disorder$^a$</td>
<td>22.2 (n=10)</td>
<td>9.1 (n=1)</td>
<td>15.8 (n=3)</td>
<td>71.4 (n=5)</td>
<td>37.5 (n=3)</td>
<td>10.11</td>
<td>4</td>
<td>.04$^*$</td>
</tr>
<tr>
<td>Major Depression$^a$</td>
<td>8.9 (n=4)</td>
<td>0.0 (n=0)</td>
<td>15.8 (n=3)</td>
<td>42.9 (n=3)</td>
<td>12.5 (n=1)</td>
<td>8.35</td>
<td>4</td>
<td>.08</td>
</tr>
</tbody>
</table>

Note: Psychopathology was determined by $T$ scores on the APS > 65. CAR = Caribbean, AFR = African, EUR = European, NAT = Native, OTH = Other (i.e., East Asian, South Asian, Arab, Latin). $^a$The expected value in each cell was less than 5, hence increasing the possibility of Type I error (Howell, 2002). $n$ does not sum within columns because of comorbidity between disorders on the APS-SF.
Table 5.
Prevalence Rates of DSM-IV Psychopathology by Living Arrangements (Family Structure)

<table>
<thead>
<tr>
<th>Living Arrangements</th>
<th>Mother (n=40)</th>
<th>Father (n=11)</th>
<th>Both (n=13)</th>
<th>Other (n=26)</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct Disorder</td>
<td>60.0 (n=24)</td>
<td>81.8 (n=9)</td>
<td>69.2 (n=9)</td>
<td>69.2 (n=18)</td>
<td>2.05</td>
<td>3</td>
<td>.56</td>
</tr>
<tr>
<td>Substance Abuse Disorder</td>
<td>57.5 (n=23)</td>
<td>81.8 (n=9)</td>
<td>46.2 (n=6)</td>
<td>65.4 (n=17)</td>
<td>3.63</td>
<td>3</td>
<td>.31</td>
</tr>
<tr>
<td>Generalized Anxiety Disorder</td>
<td>5.0 (n=2)</td>
<td>0.0 (n=0)</td>
<td>7.7 (n=1)</td>
<td>15.4 (n=4)</td>
<td>3.46</td>
<td>3</td>
<td>.33</td>
</tr>
<tr>
<td>Post-Traumatic Stress Disorder</td>
<td>22.5 (n=9)</td>
<td>36.4 (n=4)</td>
<td>46.2 (n=6)</td>
<td>26.9 (n=7)</td>
<td>3.03</td>
<td>3</td>
<td>.39</td>
</tr>
<tr>
<td>Major Depression</td>
<td>7.5 (n=3)</td>
<td>0.0 (n=0)</td>
<td>30.8 (n=4)</td>
<td>15.4 (n=4)</td>
<td>6.77</td>
<td>3</td>
<td>.08</td>
</tr>
</tbody>
</table>

Note: Psychopathology was determined by T scores on the APS > 65. n does not sum within columns because of comorbidity between disorders on the APS-SF.
Table 6.
Prevalence Rates of DSM-IV Psychopathology by Living Arrangements
(Government Housing)

<table>
<thead>
<tr>
<th>Living Arrangements</th>
<th>No Gov’t Housing (n=57)</th>
<th>Gov’t Housing (n=33)</th>
<th>( \chi^2 )</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct Disorder</td>
<td>65.0 (n=37)</td>
<td>69.7 (n=23)</td>
<td>.22</td>
<td>1</td>
<td>.64</td>
</tr>
<tr>
<td>Substance Abuse Disorder</td>
<td>63.2 (n=36)</td>
<td>57.6 (n=19)</td>
<td>.27</td>
<td>1</td>
<td>.60</td>
</tr>
<tr>
<td>Generalized Anxiety Disorder</td>
<td>7.0 (n=4)</td>
<td>9.1 (n=3)</td>
<td>.13</td>
<td>1</td>
<td>.72</td>
</tr>
<tr>
<td>Post-Traumatic Stress Disorder</td>
<td>29.8 (n=17)</td>
<td>27.3 (n=9)</td>
<td>.07</td>
<td>1</td>
<td>.80</td>
</tr>
<tr>
<td>Major Depression</td>
<td>14.0 (n=8)</td>
<td>9.1 (n=3)</td>
<td>.48</td>
<td>1</td>
<td>.49</td>
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</tbody>
</table>

Note: Psychopathology was determined by T scores on the APS > 65. n does not sum within columns because of comorbidity between disorders on the APS-SF.
Table 7. 
*Prevalence Rates of DSM-IV Psychopathology by Verbal Language Ability*

<table>
<thead>
<tr>
<th>Verbal Language Ability</th>
<th>Chi-Square</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbally Impaired (n=21)</td>
<td>Below Average (n=62)</td>
<td>Average or Above Average (n=6)</td>
<td>$\chi^2$</td>
</tr>
<tr>
<td>Conduct Disorder</td>
<td>76.2 (n=16)</td>
<td>67.7 (n=42)</td>
<td>33.3 (n=2)</td>
</tr>
<tr>
<td>Substance Abuse Disorder</td>
<td>57.1 (n=12)</td>
<td>62.9 (n=39)</td>
<td>66.7 (n=4)</td>
</tr>
<tr>
<td>Generalized Anxiety Disorder</td>
<td>9.5 (n=2)</td>
<td>6.5 (n=4)</td>
<td>16.7 (n=1)</td>
</tr>
<tr>
<td>Post-Traumatic Stress Disorder</td>
<td>33.3 (n=7)</td>
<td>29.0 (n=18)</td>
<td>16.7 (n=1)</td>
</tr>
<tr>
<td>Major Depression</td>
<td>19.0 (n=4)</td>
<td>9.7 (n=6)</td>
<td>16.7 (n=1)</td>
</tr>
</tbody>
</table>

*Note:* Psychopathology was determined by $T$ scores on the APS > 65. $n$ does not sum within columns because of comorbidity between disorders on the APS-SF.
Table 8.  
*Comorbid Disorders*

<table>
<thead>
<tr>
<th>No.</th>
<th>Participants</th>
<th>% of Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Disorder</td>
<td>14</td>
<td>15.6</td>
</tr>
<tr>
<td>One Disorder</td>
<td>26</td>
<td>28.9</td>
</tr>
<tr>
<td>Conduct Disorder only</td>
<td>15</td>
<td>16.7</td>
</tr>
<tr>
<td>Substance Abuse only</td>
<td>10</td>
<td>11.1</td>
</tr>
<tr>
<td>Oppositional Defiant Disorder only</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Two Comorbid Disorders</td>
<td>29</td>
<td>32.2</td>
</tr>
<tr>
<td>Conduct and Substance</td>
<td>24</td>
<td>26.7</td>
</tr>
<tr>
<td>Substance and PTSD</td>
<td>3</td>
<td>3.3</td>
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<tr>
<td>Conduct and PTSD</td>
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<td>1.1</td>
</tr>
<tr>
<td>PTSD and Depression</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Three Comorbid Disorders</td>
<td>11</td>
<td>12.2</td>
</tr>
<tr>
<td>Conduct, Substance, PTSD</td>
<td>7</td>
<td>7.8</td>
</tr>
<tr>
<td>Conduct, PTSD, Depression</td>
<td>3</td>
<td>3.3</td>
</tr>
<tr>
<td>Substance, Generalized Anxiety, and PTSD</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Four Comorbid Disorders</td>
<td>7</td>
<td>7.7</td>
</tr>
<tr>
<td>Conduct, Substance, PTSD, Depression</td>
<td>4</td>
<td>4.4</td>
</tr>
<tr>
<td>Conduct, Substance, PTSD, GAD</td>
<td>3</td>
<td>3.3</td>
</tr>
<tr>
<td>All Five Disorders</td>
<td>3</td>
<td>3.3</td>
</tr>
<tr>
<td>Conduct, Substance, PTSD, GAD, DEP</td>
<td>3</td>
<td>3.3</td>
</tr>
</tbody>
</table>

*Note:* Psychopathology was determined by T scores on the APS > 65.
<table>
<thead>
<tr>
<th>Target</th>
<th>Bias Score</th>
<th>Male</th>
<th>Female</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Congruent</td>
<td>Incongruent</td>
</tr>
<tr>
<td>Angry</td>
<td>3.90*</td>
<td>435.47 (90.54)</td>
<td>439.89 (71.76)</td>
</tr>
<tr>
<td>Sad</td>
<td>3.11</td>
<td>440.48 (80.73)</td>
<td>437.24 (72.22)</td>
</tr>
</tbody>
</table>

*p < .05, N = 91
Table 10.  
*Correlation Matrix*

<table>
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<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
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</thead>
<tbody>
<tr>
<td>1. Family ND Emotion</td>
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<td></td>
<td></td>
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<tr>
<td>2. Family NS Emotion</td>
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<tr>
<td>3. Alexithymia: Total</td>
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<td>-.02</td>
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<td>4. Conduct Disorder</td>
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<td>.19</td>
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<td>5. Substance Abuse</td>
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<td>-.04</td>
<td>.25*</td>
<td>.42**</td>
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<td></td>
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<tr>
<td>6. Generalized Anxiety Disorder</td>
<td>.36**</td>
<td>.13</td>
<td>.53**</td>
<td>.39**</td>
<td>.44**</td>
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</tr>
<tr>
<td>7. Post-Traumatic Stress Disorder</td>
<td>.40**</td>
<td>.21*</td>
<td>.55**</td>
<td>.37**</td>
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<tr>
<td>8. Major Depression</td>
<td>.29**</td>
<td>.14</td>
<td>.55**</td>
<td>.25*</td>
<td>.37**</td>
<td>.76**</td>
<td>.86**</td>
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<td></td>
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<tr>
<td>9. Externalizing Component</td>
<td>.31**</td>
<td>.02</td>
<td>.14</td>
<td>.86**</td>
<td>.77**</td>
<td>.32**</td>
<td>.23*</td>
<td>.14</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>10. Internalizing Component</td>
<td>.31**</td>
<td>.17</td>
<td>.57**</td>
<td>.14</td>
<td>.26*</td>
<td>.87**</td>
<td>.93**</td>
<td>.93**</td>
<td>.00</td>
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<tr>
<td>11. Threat bias (angry)</td>
<td>-.05</td>
<td>-.14</td>
<td>-.08</td>
<td>.04</td>
<td>.02</td>
<td>-.07</td>
<td>-.11</td>
<td>-.11</td>
<td>.07</td>
<td>-.12</td>
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</tr>
<tr>
<td>12. Threat bias (sad)</td>
<td>.13</td>
<td>.06</td>
<td>.01</td>
<td>-.03</td>
<td>.04</td>
<td>.08</td>
<td>.07</td>
<td>.07</td>
<td>-.02</td>
<td>.09</td>
<td>.12</td>
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</tr>
<tr>
<td>13. Street Codes</td>
<td>.30**</td>
<td>-.18</td>
<td>.24*</td>
<td>.37**</td>
<td>.30**</td>
<td>.09</td>
<td>.16</td>
<td>.08</td>
<td>.40**</td>
<td>.02</td>
<td>.02</td>
<td>-.03</td>
<td></td>
<td></td>
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<tr>
<td>14. Verbal Language</td>
<td>.19</td>
<td>.16</td>
<td>-.08</td>
<td>-.21*</td>
<td>.04</td>
<td>-.10</td>
<td>-.13</td>
<td>-.14</td>
<td>-.09</td>
<td>-.10</td>
<td>-.03</td>
<td>.09</td>
<td>-.07</td>
<td></td>
</tr>
</tbody>
</table>

*Note. N = 89. ND = Negative dominant, NS = Negative Submissive. *p < .05. **p < .01.*
Table 11. Hierarchical Multiple Regression Table. Predicting Psychopathology from Socialization Practices in the Home (Negative Dominant FEM) and Community

<table>
<thead>
<tr>
<th>Predictor</th>
<th>ΔR²</th>
<th>β</th>
<th>ΔR²</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>.02</td>
<td>.02</td>
<td>.06</td>
<td>.07</td>
</tr>
<tr>
<td>Ethnic</td>
<td></td>
<td>.20*</td>
<td>.22*</td>
<td></td>
</tr>
<tr>
<td>Verbal</td>
<td></td>
<td>-.17</td>
<td>-.15</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEM</td>
<td>.12**</td>
<td>.23*</td>
<td>.34**</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC</td>
<td>.12**</td>
<td>.38**</td>
<td>.00</td>
<td>-.03</td>
</tr>
<tr>
<td><strong>Total R²</strong></td>
<td>.25**</td>
<td></td>
<td>.17**</td>
<td></td>
</tr>
</tbody>
</table>

*Note. N = 90. Sex = biological sex, Ethnic = Ethnic Origin, Verbal = Verbal language abilities, FEM = Family Expressed Emotion (negative dominant), SC = Street Codes. Entered in respective order (i.e., intrapersonal variables in Step 1, family variables in Step 2, community variables in Step 3). *p < .05. **p < .01
Table 12. **Hierarchical Multiple Regression Table. Predicting Psychopathology from Socialization Practices in the Home (Negative Submissive FEM) and Community**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>$\Delta R^2$</th>
<th>$\beta$</th>
<th>$\Delta R^2$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Sex</td>
<td>.02</td>
<td>.04</td>
<td>.07</td>
<td></td>
</tr>
<tr>
<td>Ethnic</td>
<td></td>
<td>.21*</td>
<td>.24*</td>
<td></td>
</tr>
<tr>
<td>Verbal</td>
<td></td>
<td>-.10</td>
<td>-.10</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>.00</td>
<td>.10</td>
<td>.02</td>
<td>.18</td>
</tr>
<tr>
<td>FEM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td>.20**</td>
<td>.47**</td>
<td>.01</td>
<td>.12</td>
</tr>
<tr>
<td>SC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total $R^2$</strong></td>
<td>.22**</td>
<td></td>
<td>.10</td>
<td></td>
</tr>
</tbody>
</table>

*Note. N = 90. Sex = biological sex, Ethnic = Ethnic Origin, Verbal = Verbal language abilities, FEM = Family Expressed Emotion (negative submissive), SC = Street Codes. Entered in respective order (i.e., intrapersonal variables in Step 1, family variables in Step 2, community variables in Step 3).* 

* $p < .05$. ** $p < .01$
Table 13. Hierarchical Regression Table. Alexithymia as a Mediator of Family Expressed Emotion and Psychopathology

<table>
<thead>
<tr>
<th>Predictor</th>
<th>ΔR²</th>
<th>β</th>
<th>ΔR²</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEM</td>
<td>.10**</td>
<td>.31**</td>
<td>.09**</td>
<td>.31**</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEM</td>
<td>.00</td>
<td>.29**</td>
<td>.26**</td>
<td>.17</td>
</tr>
<tr>
<td>Alexithymia</td>
<td></td>
<td>.06</td>
<td></td>
<td>.53**</td>
</tr>
<tr>
<td>Total R²</td>
<td>.10**</td>
<td></td>
<td>.36**</td>
<td></td>
</tr>
</tbody>
</table>

Note. FEM = Family Expressed Emotion (Negative Dominant). **Bold** values indicate a significant indirect effect, *p < .05 according to Preacher and Hayes (2004) bootstrapping approach. *p < .05. **p < .01.
Figure 1

a) Direct Pathway

b) Indirect or Mediated Pathway

Figure 1. Alexithymia as a mediator of socialization practices and psychopathology. $M =$ mediator, $X =$ independent variable, $Y =$ dependent variable, $c =$ total effect of $X$ on $Y$, $c' =$ direct effect after controlling for $M$, $ab = c - c'$ = indirect effect. The model was tested in accordance with Preacher and Hayes (2004).
Figure 2. A sample screen shot of the images in the dot probe task. Images were taken from the NimStim Face Stimulus Set (Tottenham, et al., in press). The images were resized to fit within the document.
Figure 3. Average $T$ scores for psychopathology according to the APS-SF. Within subjects variables: 1 = conduct, 2 = substance abuse, 3 = generalized anxiety, 4 = post-traumatic stress, 5 = major depression. Changes in slopes between data points refer to absence “flatness.”
Figure 4. Main effect of sex on psychopathology. These data suggest “equal levels.” That is, a failure to reject the null hypothesis that males and females have the same grand mean for psychopathology scores. The data suggest no main effect of sex.
Figure 5. Main effect of ethnicity on psychopathology. These data suggest “unequal levels.” That is, a rejection of the null hypothesis that all ethnic groups share the same grand mean for psychopathology. The data suggest a main effect of ethnicity. Other = East Asian, South Asian, Arab, Latin origins.
Figure 6. Relationship between sex and ethnicity. These data suggest that the profiles are largely “parallel.” Other = East Asian, South Asian, Arab, Latin origins.
Figure 7. Interaction between sex and psychopathology. These data suggest that males and females have parallel profiles, and thus, the interaction was non-significant. Within subjects variables: 1 = conduct, 2 = substance abuse, 3 = generalized anxiety, 4 = post-traumatic stress, 5 = major depression.
Figure 8. Interaction between ethnicity and psychopathology. These data suggest that ethnic groups had parallel profiles, and thus, the interaction was non-significant. Within subjects variables: 1 = conduct, 2 = substance abuse, 3 = generalized anxiety, 4 = post-traumatic stress, 5 = major depression. Other = East Asian, South Asian, Arab, Latin origins.
Figure 9. Interaction between sex, ethnicity, and psychopathology. The interaction approached significance, $p = .08$. Within subjects variables: 1 = conduct, 2 = substance abuse, 3 = generalized anxiety, 4 = post-traumatic stress, 5 = major depression. Other = East Asian, South Asian, Arab, and Latin origins.
Figure 10. Attentional biases toward angry and sad faces by psychopathology. Scores significantly greater than 0 indicate the presence of an attentional bias. Total sample (i.e., externalizing disorders, internalizing disorders, mixed disorders, no disorder), $N = 91$; Externalizing disorders only, $n = 49$; Internalizing/mixed disorders only, $n = 26$. *Significantly greater than zero, $p < .05$. 
Figure A1. Average raw scores for mental health disorder according to the APS-SF by maternal education. Maternal education refers to the highest level of education obtained by the maternal caregiver. Note that caution should be exercised in comparing raw scores across mental health categories. The metrics used are different between categories. For example, a score of 6 on conduct is not comparable to a score of 6 on depression. In this example, the average $T$ score for conduct is actually much greater than the average $T$ score for depression because of the difference in metrics used between scales. This illustration is only for the purpose of outlining differences in scores within, not between, categories.
Figure A2. Average raw scores for mental health disorder according to the APS-SF by expressive language ability. Note that caution should be exercised in comparing raw scores across mental health categories. The metrics used are different between categories. For example, a score of 6 on conduct is not comparable to a score of 6 on depression. In this example, the average \( T \) score for conduct is actually much greater than the average \( T \) score for depression because of the difference in metrics used between scales. This illustration is only for the purpose of outlining differences in scores within, not between, categories.
### Appendix B

**Table B1**

*Family Expressiveness Questionnaire items*

How often did members of your family....

<table>
<thead>
<tr>
<th></th>
<th>How often did members of your family....</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Say sorry to someone who broke a favourite toy/item</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>2.</td>
<td>Thank family members for something they did</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>3.</td>
<td>Comment on a beautiful day</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>4.</td>
<td>Show disgust for another’s behaviour.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>5.</td>
<td>Express unhappiness with someone else’s behaviour.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>6.</td>
<td>Praise someone for good work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>7.</td>
<td>Express anger at someone else’s carelessness.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>8.</td>
<td>Sulk over unfair treatment by a family member.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>9.</td>
<td>Blame one another for family troubles.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>10.</td>
<td>Cry after an argument.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>11.</td>
<td>Put down other people’s interests.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>12.</td>
<td>Show dislike for someone.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>13.</td>
<td>Seek approval for an action.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>14.</td>
<td>Express embarrassment over a stupid mistake.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>15.</td>
<td>Go to pieces when stress builds up.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>16.</td>
<td>Express joy after an unexpected success.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>17.</td>
<td>Express excitement about future plans.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>18.</td>
<td>Show admiration for someone.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>19.</td>
<td>Express sadness when a pet dies.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>20.</td>
<td>Express disappointment over something that didn’t work out.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
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<tr>
<td>21.</td>
<td>Tell someone how nice they look.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>22.</td>
<td>Express sympathy for someone’s troubles.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>23.</td>
<td>Express love for someone.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>24.</td>
<td>Argue with a family member.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>25.</td>
<td>Cry when someone leaves.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>26.</td>
<td>Hug a family member for no reason.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>27.</td>
<td>Express anger over something small.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<td>28.</td>
<td>Show concern for the success of other family members.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>29.</td>
<td>Say sorry for being late.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>30.</td>
<td>Offer to do someone a favour.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>31.</td>
<td>Snuggle up to a family member.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<td>32.</td>
<td>Cry for being punished.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>33.</td>
<td>Try to cheer up someone who is sad.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>34.</td>
<td>Tell a family member how hurt you are.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>35.</td>
<td>Tell family members how happy you are.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
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<tr>
<td>36.</td>
<td>Threaten someone.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>37.</td>
<td>Criticize someone for being late.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>38.</td>
<td>Say thank you for a favour.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>39.</td>
<td>Surprise someone with a little gift or favour.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>40.</td>
<td>Say “I’m sorry” when one realizes one was wrong.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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</tbody>
</table>
Table B2  
*Code of the Street Questionnaire items*

Please indicate the extent to which you agree with the following statements.....

1 = *strongly disagree* to 4 = *strongly agree*

<p>| | | | | | |</p>
<table>
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</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>When someone disrespects you, it is important that you use physical force or aggression to teach him or her not to disrespect you.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>If someone uses violence against you, it is important that you use violence against him or her to get even.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>People will take advantage of you if you don’t let them know how tough you are.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>People do not respect a person who is afraid to fight physically for his/her rights.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.</td>
<td>Sometimes you need to threaten people in order to get them to treat you fairly.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.</td>
<td>It is important to show others that you cannot be intimidated.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7.</td>
<td>People tend to respect a person who is tough and aggressive.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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</tbody>
</table>
Table B3
Revised Cultural Mistrust Inventory items

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>People from your cultural group can rely on lawyers to defend them well.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>2.</td>
<td>The government/politicians will promise people from your cultural group a lot but deliver little.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>3.</td>
<td>Police officers will change a story to make people from your cultural group look guilty.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>4.</td>
<td>The government/politicians usually can be trusted to keep the promises they make to members of your cultural group.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>5.</td>
<td>People from your cultural group should be suspicious when people from mainstream culture are friendly.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>6.</td>
<td>Trust in others is <strong>not</strong> based on his/her cultural background.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>7.</td>
<td>A member of your cultural group can not trust a judge to treat them fairly.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>8.</td>
<td>The government passes laws to block the progress of my cultural group</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>9.</td>
<td>Some people from mainstream culture are trustworthy enough to have as close friends.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>10.</td>
<td>People from your cultural group should stay away from people from mainstream culture because they can’t be trusted.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>11.</td>
<td>People from your cultural group should be on their guard when around people from mainstream culture.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>12.</td>
<td>People from mainstream culture tell more lies than people from other cultural groups.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>13.</td>
<td>Friends from mainstream culture are least likely to break their promise.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>14.</td>
<td>People from my cultural group should watch what they say around people from mainstream culture because they will use it against them.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>15.</td>
<td>People from mainstream culture rarely keep their word.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>16.</td>
<td>People from mainstream culture are usually honest with members of your cultural group.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>17.</td>
<td>People from mainstream culture are as trustworthy as members of any other cultural group.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>18.</td>
<td>People from mainstream culture will say one thing and do another.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>19.</td>
<td>Politicians will take advantage of members of your cultural group every chance they get.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>20.</td>
<td>Police officers can be trusted to catch people who commit crimes against people in my cultural group.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>21.</td>
<td>People from mainstream culture will usually keep their word.</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>22.</td>
<td>Police officers usually do not try to trick people from your cultural group into admitting they committed a crime that</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
</tbody>
</table>
they didn’t.

<p>| | | | | | | | | | |</p>
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</thead>
<tbody>
<tr>
<td>23. Members from your cultural group have often been lied to by politicians.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>24. Politicians lie equally to all cultural groups.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>25. Members of your cultural group should not tell their secrets to people from mainstream culture because they will use it against you.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>26. Members of your cultural group should be suspicious of advice by politicians and the government.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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</tbody>
</table>
Table B4
*Toronto Alexithymia Scale items*

Please indicate to what extent the following statements describe you. 1 = *not at all like me* to 5 = *very much like me*.

<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I am often confused about what emotion I am feeling.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>It is difficult for me to find the right words for my feelings.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>I feel things in my body that even doctors don’t understand.</td>
<td>1</td>
<td>2</td>
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</tr>
<tr>
<td>4</td>
<td>I am able to describe my feelings easily.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
</tr>
<tr>
<td>5</td>
<td>I prefer to examine problems rather than just describe them.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>When I am upset, I don’t know if I am sad, frightened, or angry.</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>7</td>
<td>I am often confused by physical feelings in my body</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>I prefer to just let things happen rather than to understand why they turned out that way.</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>I have feelings that I can’t quite identify.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>Being in touch with feelings is very important.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
</tr>
<tr>
<td>11</td>
<td>I find it hard to describe how I feel about people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12</td>
<td>People tell me to describe my feelings more.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13</td>
<td>I don’t know what’s going on inside me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14</td>
<td>I often don’t know why I am angry</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
</tr>
<tr>
<td>15</td>
<td>I prefer talking to people about their daily activities rather than their feelings.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16</td>
<td>I prefer to watch “light” television (e.g., comedy) rather than “heavy” dramas.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17</td>
<td>It is difficult for me to reveal my innermost feelings, even to close friends.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18</td>
<td>I can feel close to someone, even in moments of silence.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
</tr>
<tr>
<td>19</td>
<td>I find examination of my feelings useful in solving personal problems.</td>
<td>1</td>
<td>2</td>
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<td>5</td>
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<tr>
<td>20</td>
<td>Looking for hidden meanings in movies distracts from their enjoyment.</td>
<td>1</td>
<td>2</td>
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</tbody>
</table>
Appendix C

Housing/Living Arrangements

Incarcerated youth living in government housing did not endorse more externalizing behavior than youth who did not live in government housing. The mean raw scores for conduct related behaviour on the APS among youth who lived in government housing and those youth who did not live in government housing were not significantly different, \( t(88) = .73, p = .47 \). Similarly, the mean scores for substance abuse among youth who lived in government housing and those youth who did not live in government housing were not significantly different, \( t(88) = .43, p = .67 \). Non-significant findings were also noted for internalizing disorders: GAD, \( t(88) = .06, p = .95 \); PTSD, \( t(88) = -.14, p = .89 \); depression, \( t(88) = -1.13, p = .26 \). In addition, rates of psychopathology did not differ depending on with whom youth lived. A one-way ANOVA indicated no main effect of living arrangements on raw scores for conduct related behaviour, \( F(3, 86) = 1.01, p = .39 \), or substance abuse, \( F(3, 86) = 1.29, p = .28 \). Similar non-significant findings were noted for internalizing difficulties: generalized anxiety, \( F(3, 86) = 1.29, p = .28 \); PTSD, \( F(3, 86) = 1.56, p = .21 \); and depression, \( F(3, 86) = 1.14, p = .34 \).

Overall, there was no impact of living in government subsidized housing or living in a single parent home on rates of psychopathology. However, many of the youth came from single parent homes/independent living (85.6%), and thus, there were insufficient youth in the sample who lived with both parents to rule out that there were no differences in psychopathology depending on with whom youth lived. Regarding the non-significant result with government subsidized housing, 36.7% of youth identified that they lived in such housing. However, it is possible that many of the youth who did not live in
government subsidized housing still lived in impoverished neighbourhoods. Since the
spirit of asking about government housing is to provide insight into poverty, which is a
well documented risk factor for externalizing behaviour (Cicchetti & Lynch, 1993;
Dishion, Nelson, & Yasui, 2005), just asking whether youth lived in government housing
was likely an underestimate of that construct. Consequently, differences in
psychopathology related to housing were not noted because the neighbourhoods in which
youth lived were likely quite similar.

Maternal Education

Youth whose mothers did not complete high school tended to endorse more
psychopathology than youth whose mothers had more advanced formal education (see
Figure A1). More specifically, mothers whose highest level of education obtained was
Grade School had youth with the highest scores for conduct ($M = 8.53$), followed by
mothers who completed High School ($M = 7.43$), and mothers who completed Post-
Secondary School ($M = 6.25$). A one-way ANOVA indicated that a main effect of
maternal education on conduct approached significance, $F (2, 84) = 2.88, p = .06$, which
accounted for 6.4% of the variance. The same trend was observed with respect to
substance abuse. Mothers who finished Grade School had youth with the highest scores
($M = 6.09$), followed by those who finished High School and those who finished Post-
Secondary School having very similar average scores ($M = 6.22$ and 6.70 respectively).
However, a one-way ANOVA indicated that the main effect of maternal education on
substance abuse was not significant, $F (2, 84) = 1.81, p = .17$, accounting for just 4.1% of
the variance.
These trends were also observed when internalizing disorders were considered. That is, mothers who finished Grade School had youth with the highest raw scores for generalized anxiety ($M = 10.33$), followed by those who finished High School and those who finished Post-Secondary School having lower and more similar average scores for GAD ($M = 7.15$ and $8.13$ respectively). However, a one-way ANOVA indicated that the main effect of maternal education on GAD was not significant, $F(2, 86) = 2.27, p = .11$.

Regarding PTSD, mothers who finished Grade School again had the highest scores ($M = 10.20$), followed by those who finished High School and those who finished Post-Secondary School having lower and more similar average scores for PTSD ($M = 7.19$ and $7.60$ respectively). A one-way ANOVA indicated that the main effect of maternal education on PTSD approached significance, $F(2, 86) = 2.83, p = .07$. With respect to depression, again, mothers with Grade School education had children with the highest scores ($M = 11.73$), followed by youth whose mothers completed High School ($M = 8.03$), and youth whose mothers completed Post-Secondary School having the lowest scores ($M = 8.10$), $F(2, 84) = 2.49, p = .09$.

Overall, youth whose mothers did not complete high school endorsed more psychopathology than youth whose mothers had more advanced formal education. These findings are consistent with results from Martinez and Richters (1993), who demonstrated that high maternal education buffered youth from engagement in externalizing behaviour. Cicchetti and Lynch (1993) further suggested that high maternal education helps to organize the family environment, which provides a stable, dependable, and organized refuge that may mediate the impact of negative influences in the community (e.g.,
violence exposure). These data suggest that average cognitive/academic functioning of youth and caregivers serves as a protective factor for engagement in felonious activity.

**Verbal Language Abilities**

With respect to verbal language abilities, a one-way ANOVA suggested that a main effect of verbal language ability on the raw scores for conduct approached significance, $F(2, 86) = 2.76, p = .07$, and accounted for 6.0% of the variance in conduct. More specifically, youth who were in the verbally impaired range had the highest scores ($M = 8.10$), followed by youth who were in the below average range ($M = 7.00$), and youth who were in the average or above average range had the lowest scores ($M = 4.50$). However, no such differences were found with respect to substance abuse, $F(2, 86) = .01, p = .99$; GAD, $F(2, 86) = .32, p = .72$; PTSD, $F(2, 86) = 1.00, p = .37$; or Major Depression, $F(2, 86) = .92, p = .40$ (see Figure A2).

In summary, just 6.7% of incarcerated youth were in the average or above average range for expressive vocabulary skills. Youth with poorer expressive vocabulary had higher rates of conduct disorder than youth who had better developed verbal language skills. This finding was consistent with previous studies that have demonstrated similar relationships (Dionne, Boivin, Tremblay, & Laplante, et al., 2003; Stevenson, 1996). Poor verbal language ability likely compromises youths’ ability to verbally problem solve when in contentious situations, which might explain the differences in conduct related behaviour endorsed based on language skills. Youth with deficits in verbally reasoning might rely more heavily on instinctual means of problem solving, and thus, may engage in more aggressive behaviour.