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# Alexithymia and Circumcision Trauma: A Preliminary Investigation

This preliminary study investigates what role early trauma might have in alexithymia acquisition for adults by controlling for male circumcision. Three hundred self-selected men were administered the Toronto Twenty-Item Alexithymia Scale checklist and a personal history questionnaire. The circumcised men had age-adjusted alexithymia scores 19.9 percent higher than the intact men; were 1.57 times more likely to have high alexithymia scores; were 2.30 times less likely to have low alexithymia scores; had higher prevalence of two of the three alexithymia factors (difficulty identifying feelings and difficulty describing feelings); and were 4.53 times more likely to use an erectile dysfunction drug. Alexithymia in this population of adult men is statistically significant for having experienced circumcision trauma and for erectile dysfunction drug use.

*Keywords:* alexithymia, neonatal, trauma, circumcision, erectile dysfunction

People suffering from the personality trait disorder alexithymia have difficulty identifying and expressing their feelings. They daydream less, and confuse emotions with body sensations, such as physical pain. They tend to lack imagination and intuition. This translates into not being able to imagine what others are feeling, leading to an inability to respond to others' needs. People with severe alexithymia are so removed from their feelings that they view themselves as being robots or automatons. If acquired at an early age, this might limit access to language and interfere with the socialization process that begins early in life. Moderate to high alexithymia can interfere with personal relationships and hinder therapy. A number of studies have shown an alexithymia prevalence for adults at less than ten percent (Fukunishi, Berger, Wogan, & Kuboki, 1999), while one study revealed that 28 percent of men were alexithymic (Posse & Hällström, 2001). Alexithymia is not classified as a mental disorder in the DSM-IV.

<sup>a</sup> Independent Men's Issues Researcher, West Lafayette, IN.

<sup>b</sup> Department of Pediatrics and Human Development, Michigan State University College of Human Medicine.

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Correspondence concerning this article should be sent to Dan Bollinger, 1970 North River Road, West Lafayette, IN 47906, USA. Email: danbollinger@comcast.net



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Neonatal trauma has been associated with alexithymia, dissociation, aggressive behavior, and suicide; and alexithymia has been associated with life expectancy, being male, dissociation, aggressive behavior, childhood, and sexual abuse; thus creating a plausible connection between early trauma and alexithymia. Knowing if alexithymia might be acquired from early traumas such as circumcision could be valuable for a number of reasons. It would (a) help to explain why some groups of men have alexithymia levels higher than women; (b) lead to a better understanding of normal alexithymia levels for men; (c) provide alexithymic men with new insights into their behavior; (d) assist parents deliberating about circumcision for their son; (e) provide new information in what role early trauma has on the development of children.

#### METHODS

Self-selected men were tested for alexithymia using the Toronto Twenty-Item Alexithymia Scale (TAS-20) checklist. Scoring followed checklist instructions (Taylor, 2008). Data were collected through an online form in which participants submitted self-report responses from web links at two frequently visited men's issues websites: [Menstuff.org](http://Menstuff.org) and [TheMensCenter.com](http://TheMensCenter.com). The form collected alexithymia checklist responses plus demographic data on gender, age, erectile dysfunction diagnosis, erectile dysfunction drug use, and penile status.

The Toronto Twenty-Item Alexithymia Scale checklist (TAS-20) is used to measure a patient's degree of alexithymia (Bagby, Parker & Taylor, 1994). Alexithymia scores (ALEX) range from a low of 20 to a high of 100. Cutoff scores have been established for three alexithymia ranges. Scores  $\leq 51$  occupy the Low ALEX range, scores  $\geq 61$  occupy the High ALEX range, while scores between those two cutoffs occupy the Moderate ALEX range (Taylor, Bagby & Parker, 1999). The TAS-20 is divided into three alexithymia factors: difficulty identifying feelings (DIF), difficulty describing feelings (DDF), and externally-oriented thinking (EOT). The TAS-20 checklist has a high degree of reliability and validity for measuring alexithymia, and for its three ranges and factors (Bagby, Parker & Taylor, 1994), plus it has convergent, discriminant and concurrent validity (Bagby, Taylor, & Parker, 1994).

The results of this study might be skewed because of two factors: results from a study using self-selected participants might not yield the same results as a study using random selection, and a bias might exist among men who are more likely to visit a men's issues website in that they might be more self-aware, or more than normally concerned with their sexuality or health. The role of circumcision trauma might be better understood in a complex multi-factorial perspective, rather than in this cause/effect approach, but would have been premature for a preliminary investigation.

Penile status was assessed in three ways. First, men were asked what age they were when circumcised, if at all. Second, men chose between two images what their non-erect penis most closely resembled, one with, and one without, a foreskin. Third, since some circumcised men are restoring their foreskins and their penises may resemble either a circumcised penis or an intact one, depending on their progress, respondents were asked if they were restoring their foreskin; those with positive responses were considered circumcised. Using the above three criteria, only nonconflicting responses were included in the analysis.

TAS-20 scoring consisted of calculating participants' overall ALEX scores, including the three ranges, and for the three alexithymia factors: DIF, DDF, and EOT. All statistical measures were two-tailed. Sample sizes were different for circumcised versus intact men. Consequently, the more precise Satterthwaite method of calculating t-values was used to permit comparing the samples without diminishing statistical power (Satterthwaite, 1946). Outcomes with continuous values were evaluated with a t-test (using the Satterthwaite method) and linear regression. Outcomes with dichotomous values were evaluated using chi-square ( $\chi^2$ ), Fisher's exact test, and logistic regression. Effect size was evaluated using Cohen's *d* and internal consistency of the subsets using Cronbach's alpha. Calculations were performed using SAS version 8.02 (SAS Institute, Inc, Cary, North Carolina).

## RESULTS

The total number of entries received was 455. Excluded were those entries in which participants were mistaken or unsure about their penile status (15), were female (20), their age was 16 years or younger (22), penile status question and image match response did not correspond (30), or provided duplicate, incomplete, or contradictory responses that prevented tabulation (68). This resulted in a final  $N = 300$ ; of these men, 236 were circumcised (192 as infants) and 64 were intact.

The average ALEX score for all participants was 55.54,  $SD = 13.32$ . Circumcised men had ALEX scores 6.11 points (19.9%) higher (95% $CI = 2.47-9.75$ ,  $t(df = 92.1) = 3.10$ ,  $p = .0026$ , Cohen's  $d = 0.65$ ) than the intact men. Circumcised men's scores ranged from 22 to 92, with an average of 56.84 ( $SD = 12.77$ ), while intact men's ranged from 26 to 80, with an average of 50.73,  $SD = 14.29$ . Circumcised men scored higher for 17 of the 20 items, and nearly the same for the remaining 3 items, which were all EOT factors (items 5, 10, & 20). See Table 1.

Circumcised men had higher scores for all three alexithymia ranges (Low, Moderate, and High) and a greater proportion of circumcised men had higher Moderate and High ALEX scores. Circumcised men were 1.57 times more likely to have a High ALEX score ( $\geq 61$ ) ( $OR = 1.57$ , 95% $CI = 0.86-2.85$ ,  $\chi^2(df = 1) = 2.20$ , Fisher's exact test  $p = 0.1483$ , Cohen's  $d = 0.25$ ), and 2.30 times less likely to have a Low ALEX score ( $\leq 51$ ),  $OR = 0.44$ , 95% $CI = 0.25-0.76$ ,  $\chi^2(df = 1) = 8.64$ , Fisher's exact test  $p = .0053$ , Cohen's  $d = -0.45$ . See Figure 1.

The elevation of the DIF and DDF factor scores for circumcised men was comparable: DIF was 2.84 points (26.4%) higher (95% $CI = 0.97-4.71$ ,  $t(df = 100) = 3.00$ ,  $p = .0034$ , Cohen's  $d = 0.60$ ), and DDF was 2.09 points (24.4%) higher (95% $CI = 0.81-3.36$ ,  $t(df = 90.2) = 2.97$ ,  $p = .0039$ , Cohen's  $d = 0.63$ ) than those of intact men. Circumcised men scored higher for all seven DIF and all five DDF items. EOT was not statistically significant with scores only about one point higher (difference = 1.18, 95% $CI = -0.129-1.18$ ,  $t(df = 93.7) = 1.69$ ,  $p = .0947$ ). See Table 2.

Men who had been diagnosed with erectile dysfunction had ALEX scores 5.23 points (15.0%) higher (95% $CI = 0.79-9.66$ ,  $t(df = 50.1) = 2.24$ ,  $p = .0298$ ) than men who had not been diagnosed. Circumcised men were 4.53 times more likely than intact men to use an erectile dysfunction drug (95% $CI = 1.36-15.12$ ,  $\chi^2(df = 1) = 7.08$ , Fisher's exact test  $p = .0058$ , Cohen's  $d = 0.89$ ). See Table 3.

In this study, circumcised men were older, on average, than the intact men by 3.69 years (37.24 ( $SD = 13.69$ ) vs. 35.30 ( $SD = 13.85$ ), 95% $CI = -0.11-7.50$ ,  $t(df = 98.7) =$

1.90,  $p = .0606$ ). When circumcision status was adjusted for age, using a regression model of ALEX score, circumcised men had an ALEX score 6.40 points higher than intact men, ( $SE = 1.85$ ,  $t = 3.45$ ,  $p \leq .001$ ). Age at time of circumcision was not significant ( $t = 1.44$ ,  $p = 0.1499$ ).

Table 1  
Average TAS-20 Checklist Survey Scores

Items	Intact	Circumcised
<i>ALEX – Alexithymia Total Score</i>	50.73	56.84
<i>DIF - Difficulty Identifying Feelings</i>	17.77	20.61
1. I am often confused about what emotion I am feeling.	2.47	3.00
3. I have physical sensations that even doctors don't understand.	2.19	2.61
6. When I am upset, I don't know if I am sad, frightened, or angry.	2.69	3.10
7. I am often puzzled by sensations in my body.	2.31	2.83
9. I have feelings that I can't quite identify.	2.80	3.19
13. I don't know what's going on inside me.	2.73	2.99
14. I often don't know why I am angry.	2.58	2.87
<i>DDF - Difficulty Describing Feelings</i>	13.56	15.65
2. It is difficult for me to find the right words for my feelings.	2.81	3.27
4. I am able to describe my feelings easily.	3.34	2.97
11. I find it hard to describe how I feel about people.	2.45	2.98
12. People tell me to describe my feelings more.	2.53	2.81
17. It is difficult for me to reveal my innermost feelings, even to close friends.	3.11	3.56
<i>EOT – Externally Oriented Thinking</i>	19.41	20.59
5. I prefer to analyze problems rather than just describe them.	3.84	3.89
8. I prefer to just let things happen rather than to understand why they turned out that way.	2.41	2.53
10. Being in touch with emotions is essential.	3.97	4.00
15. I prefer talking to people about their daily activities rather than their feelings.	2.83	3.39
16. I prefer to watch "light" entertainment shows rather than psychological dramas	2.94	3.02
18. I can feel close to someone, even in moments of silence.	4.06	3.69
19. I find examination of my feelings useful in solving personal problems.	3.66	3.49
20. Looking for hidden meanings in movies or plays distracts from their enjoyment.	2.77	2.72

Note: Items 4, 5, 10, 18, and 19 are negatively scored (italicized).

Table 2

*Logistic Regression Analysis of Variable Impacting Use of Erectile Dysfunction Drugs, Erectile Dysfunction, Elevated ALEX Scores, and Normal ALEX Scores*

	Univariate			Multivariate		
	Beta	Std. Error	p-value	Beta	Std. Error	p-value
<i>ALEX – Alexithymia</i>						
Circumcision	6.11	1.85	.0011	4.96	1.92	.0101
ED	5.23	2.25	.0211	NS		
<i>DIF - Difficulty Identifying Feelings</i>						
Circumcision	2.84	0.95	.0030	2.08	0.98	.0348
ED	2.58	1.15	.0260	NS		
<i>DDF – Difficulty Describing Feelings</i>						
Circumcision	2.09	0.65	.0014	2.03	0.68	.0030
Age	-0.041	0.019	.0360	-0.043	0.019	0.0266
<i>EOT – Externally Oriented Thinking</i>						
ED	2.09	0.80	.0097			

Table 3

*Linear Regression Analysis of Factors Impacting Erectile Dysfunction Drug Use Per Year*

	Univariate		Multivariate	
	OR	95% CI	OR	95% CI
<i>Erectile Dysfunction Drug Use</i>				
Circumcision	4.53	1.36-15.12	5.07	1.15-22.30
Age (years)	1.05	1.03-1.08	1.06	1.03-1.09
<i>Erectile Dysfunction</i>				
Age (years)	1.04	1.02-1.07	1.06	1.02-1.09
Age at Circ.	1.10	1.04-1.17	1.11	1.03-1.19
Circumcision	2.10	0.78-5.59	NS	
<i>High ALEX score</i>				
Circumcision	1.56	0.86-2.85	1.42	0.75-2.69
<i>Low ALEX score</i>				
Circumcision	0.44	0.25-0.76		

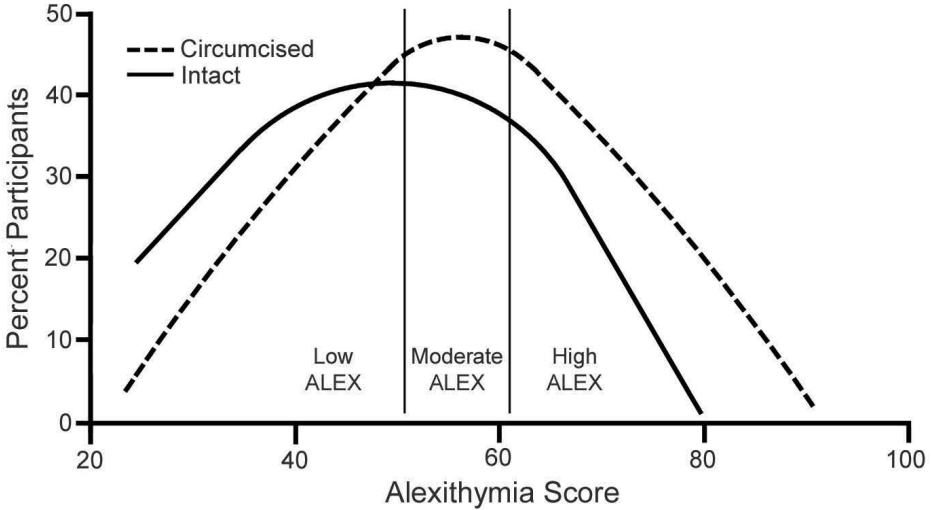


Figure 1. A larger proportion of circumcised men had higher Low, Moderate, and High ALEX scores than intact men as shown by these smoothed distribution curves.

The subsets DIF, DDF, and EOT demonstrated internal consistency as the standardized Cronbach's alpha was 0.74, which is about the 0.70 threshold.

#### DISCUSSION

Neonatal trauma and alexithymia have overlapping factors. For instance, both alexithymia and circumcision have independently been linked to dissociation (Berenbaum & James, 1994; Boyle, Goldman, Svoboda & Fernandez, 2002; Clayton, 2004; Rhinehart, 1999), and early childhood trauma-related disorders, including dissociative disorders, are under-diagnosed (Luxemberg, Spinazzola & Van Der Kolk, 2001). One study linked alexithymia to physical illness (Lumley, Stettner & Wehmer, 2004), and "it is possible that alexithymia might be related negatively to survival and longevity" (Graeme, Taylor & Bagby, 2004, p. 75). Traumatic or painful procedures in the neonatal period seem to cause a greater propensity for adult suicide; and, for infants with multiple birth traumas that self-destructive effect is five times greater in males than females (Jacobson & Bygdeman, 1998). Victims of early violence and trauma tend to express aggressive behavior later in life. Boys who received harsh treatment or physical punishment from parents prior to pre-school have difficulty focusing on activities and are easily distracted, resulting in chronic, impulsive, and aggressive behavior, and concluded that impulsivity is considered to be a reliable early onset indicator of adult violent behavior (Tremblay, Pihl, Vitaro & Dobkin, 1994). Impulsive behavior is also a key symptom of alexithymia (Clayton, 2004). Neonatal traumas are associated with self-destructive and anti-social behavior later in life (Jacobson et al., 1998; Richards, Bernal & Brackbill, 1976), yet the effect of neonatal trauma in regard to acquiring alexithymia has not been adequately explored. Males are more likely to suffer from alexithymia (Parker, Keightley, Smith & Taylor, 1999), and alexithymia has been associated

with risk of death in middle-aged men (Kauhanen, Kaplan, Cohen, Julkunen, & Salonen, 1996). Alexithymia is so common in men—at almost twice the frequency as women (Salminen, Saarijarvi, Aarela, Toikka & Kauhanen, 1999)—that the condition has been conjectured as “normative” for men (Levant, 2001, pp. 424-443).

### *Childhood Alexithymia*

Acquiring alexithymia is strongly associated with young age. One researcher went so far as to propose that alexithymia represented “an extremely arrested and infantile psychic structure” (McDougall, 1985, p. 161). A 31-year follow up of a cohort of 5693 Finnish participants found a significant correlation between alexithymia and the number of words known at age one (Kokkonen, Veijola, Karvonen, Laksy, Jokelainen et al., 2003). The results “support the theory that alexithymia may be a developmental process starting in early childhood and reinforcing itself in a social context.” A Swiss study found that family violence was associated with worse overall mental health and alexithymia (Modestin, Furrer & Malti, 2005). Another study found that: “Childhood sexual abuse is a crucial factor in the development of alexithymia later in life” (Bermond, Moormann, Albach & van Dijke, 2008). While a Dutch study of school-aged children, using a modified TAS-20 checklist exhibiting high validity, revealed that not only can children have alexithymia, but can be successfully tested for it using the TAS-20 (Rieffe, Oosterveld & Terwogt, 2006).

### *Infant Pain and Trauma*

Abnormal neonatal experiences, including neonatal pain, can lead to permanent alterations in the brain resulting in a host of changed adult behavior, including: “increased anxiety, altered pain sensitivity, stress disorders, hyperactivity, and attention deficit disorder, leading to impaired social skills and patterns of self-destructive behavior” (Anand & Scalzo, 2000). Neonatal pain has been shown to profoundly affect pain response in adulthood in a study on rats and parallel studies on humans including hypersensitivity to re-injury (LaPrairie & Murphy, 2009). Beliefs about whether or not infants feel pain have waxed and waned over the past four centuries (Cope, 1998); but it is now clearly established that infants do feel pain, and that infants feel as much or more pain than adults (Anand & Hickey, 1987). A study of circumcised boy’s four- and six-month vaccinations demonstrated that neonatal circumcision pain is remembered; observations of facial action, crying time, and visual analogue pain scores showed that early pain affects behavior, and has effect (Taddio, Katz, Ilersich & Koren, 1997). Circumcision has been labeled an infant stressor since 1971 (Emde, Harmon, Metcalf, Keonig & Wagonfeld). Another analysis found a profound physiological response to circumcision: “Newborn males respond to circumcision with a marked reduction in oxygenation during the procedure, a cortisol surge, decreased wakefulness, increased vagal tone, and less interaction with their environment following the procedure” (Van Howe, 1996). One study observed what could be seen as a precursor to circumcision-related alexithymia in the four- and five-year-old boys who were given a battery of standard psychological tests before and after their circumcision. It concluded that circumcision has detrimental effects on the child’s function and adaptation, and that the child seeks safety in withdrawal and isolation (Cansever, 1965). A clinical case report on circum-



cision noted that the only response available to the infant is shock, wherein the central nervous system is overwhelmed by pain, followed by numbing and paralysis. While some babies have been described as being “quiet” after circumcision, it has been surmised that the stillness most likely represents a state of dissociation (Rhinehart, 1999).

### *Comparison to Normative Data*

In this study, where 78 percent of participants were from the United States (and 93 percent from English-speaking countries), the average ALEX score was 55.54. This is comparable to the average score of 55.11 for American men in another study (Parker, Bagby, Taylor, Endler & Schmitz, 1993), suggesting that confounders do not particularly skew this study’s results, but also showing that American men (for whom circumcision was likely) generally suffer from alexithymia. The normative ALEX score for adults worldwide is 46.51 (Taylor, Bagby, and Parker in 2003), well below the cut-off score of 51 for Low ALEX, and nine points lower than for the circumcised men in this study.

This study also found the circumcised men had high DIF and DDF scores, but low EOT scores, which parallels a study that had similar findings (Valera & Berenbaum, 2001), and which concluded that DIF and DDF are environmental factors, whereas EOT is largely genetic. Low EOT scores for the men circumcised as infants or children is to be expected since the boy’s genetics cannot play a part in whether or not his parents decide to have him circumcised. In a study of Canadian men (for whom circumcision was likely), DIF and DDF scores were also higher, 18.2 percent and 17.9 percent higher, respectively (Parker, Taylor & Bagby, 2003), than for European men (for whom circumcision was unlikely) (Gundel, Lopez-Sala, Ceballos-Baumann, Deus, Cardoner et al., 2004; Salminen et al., 1999). The scores for the intact men in this study fall within the ranges of normative scores for men encompassed in the previously mentioned studies.

### *Age Factor*

Participants’ age was not associated with alexithymia in a Canadian study (Bagby, Parker, & Taylor, 1994); however it was a factor for men in a Finnish study (Salminen et al., 1999). ALEX scores in the present study were high for all circumcised men regardless of their current age, including the 81 percent of circumcised participants circumcised as infants, suggesting that neonatal trauma-related alexithymia is life-long and non-transient, and that the passage of time does not necessarily alleviate alexithymia. Furthermore, age at time of circumcision was not a factor, suggesting that early traumas with these participants were as likely to lead to alexithymia as the same trauma later in life.

### *Erectile Dysfunction*

Men in this study who were circumcised and had High ALEX scores were more likely to be diagnosed with erectile dysfunction and to use prescribed erectile dysfunction drugs. Income level might be a factor, considering the high cost of these drugs. Diagnosis of erectile dysfunction, and subsequent treatment, is evidence of varying combi-

nations of physiological and psychosomatic problems, which, in these cases, appear to be associated with penile or neonatal trauma. A new study shows that circumcised men are 2.56 times more likely to suffer from premature ejaculation, and, when the data were adjusted to include erectile dysfunction, that risk rose to 4.88 times (Tang & Khoo, 2011)—remarkably comparable to this study’s 4.53 finding—illustrating that some sexual problems might derive from penile surgical trauma. Another study also found a high incidence of alexithymia in patients with erectile dysfunction, and went on to surmise that alexithymia contributed to the origin of the dysfunction (Michetti, Rossi, Bonanno, Tiesi & Simonelli, 2006).

### *Pain Relief Factor*

Circumcision pain itself did not seem to effect acquiring alexithymia. In this study, ALEX scores were uniform over all age ranges, even though anesthesia use was being gradually introduced during the period these participants were circumcised. Currently, some form of anesthesia is used for more than 45 percent of newborn circumcisions being performed in the United States (Stang & Snellman, 1998). Some types are considered inadequate at reducing infant circumcision pain, and no anesthesia in use today removes all pain (Lander, Brady-Fryer, Metcalfe, Nazarali & Muttitt, 1997). Anesthesia is commonly used for circumcisions beyond the neonatal period.

### *Circumcision Confounder Factor*

Infant circumcision is a confounder for research studies in general and might be skewing gender studies (Phillips, King & BuBois, 1978; Williamson & Williamson, 1983). Controlling for circumcision status is key in gender studies say the authors of one study, who effectively argued that what some researchers are measuring as gender differences is really an aftermath of circumcision experiences (Richards et al., 1976).

## CONCLUSION

We hope readers will heed our advice in not extrapolating these results to the general population from this preliminary investigation, but instead use it as a springboard to further investigation, perhaps in a sufficiently large random-sample study.

In this self-selected, self-reporting group of 300 men, alexithymia was statistically significant for having experienced circumcision trauma. The circumcised men were 1.57 times more likely to have High ALEX scores and 2.30 times less likely to have Low ALEX scores. The age-adjusted, average ALEX score for the circumcised men was 6.40 points (19.9%) higher than for intact men. These circumcised men displayed significantly higher DIF and DDF scores, but did not overly exhibit increased EOT scores. Age at time of their circumcision was not statistically significant. The circumcised men were 4.53 times more likely to use an erectile dysfunction drug.

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