Alexithymia and its relation to Attachment Styles, Self-Esteem and the Identity Construct

Abstract

The aim of the present study was to assess the strength of the link between alexithymia and attachment styles, self-esteem and the identity construct. Identifying the factors that best predict alexithymia, and the dimensions encompassed within it, would help shed light on the predictive power of the various dimensions of the identity construct. This would also enable a comparison to be made with attachment styles and self-esteem. The link between alexithymia and the identity construct is present throughout the literature but there has been a substantial lack of empirical investigation. A total of 276 participants took part in the study, which required them to complete an online version of 4 questionnaires: the 20-item Toronto Alexithymia Scale (TAS-20), the Experiences in Close Relationships (ECR), the Rosenberg Self-Esteem Scale (RSES) and the Identity Consolidation Inventory (ICI). Gender and age related differences were observed in relation to participants' responses on the TAS-20. Gender had a significant influence on results while gender did not. The ICI contained 6 dimensions, some of which were significant predictors of alexithymia while others were not.

Keywords: Alexithymia; Identity construct; Fragmented Identity; Attachment anxiety; Attachment avoidance; Self-Esteem

Sifneos (1973), a practicing psychotherapist, coined the term "alexithymia" relating to an inability he noticed in some of his patients to describe and make sense of emotions. Alexithymia is a cognitive-affective disturbance characterized by a difficulty in identifying and describing feelings and by concrete and poorly introspective thinking (Taylor, Bagby & Parker, 1997). The word derives from Greek and literally means "without words" (Sifneos, 1973), referring to the difficulty alexithymics have in expressing emotions, which is believed to derive from a difficulty in processing emotional arousal (Taylor, 1994). This difficulty is believed to be caused by their emotions being poorly differentiated (Lane & Scwartz, 1987). Alexithymia appears to extend well beyond the difficulty to differentiate and verbalize emotions. An increasing number of studies in recent years have shown it is linked to impoverished imagination and poor capacity of symbolic thought (Matilla, Salminen, Nummi & Joukamaa, 2006), a reduction of fantasy in dream content (Parker, Bauermann & Smith, 2000) along with an impaired recall capacity of dreams (De Gennaro, Ferrara & Cristiani, 2003). It has been inferred that people with alexithymia think in a purely operative way, characterized by a lack of empathy and intuition (Kristal et al, 1988). This paper is concerned with the possibility alexithymia, encompassing all these features mentioned above may be directly associated with a fragmented identity construct, meaning a profound difficulty in understanding oneself. An accurate description of what the identity construct consists of, how this can be fragmented and the ties linking this to alexithymia will be presented in detail throughout. The study will aim to determine whether a fragmented identity construct is as highly associated to alexithymia as insecure attachment styles and low self-esteem are, concepts traditionally linked to alexithymia (Montebarocci, Codispoti, Baldaro, & Rossi, 2004; Wearden, Lamberton, Crook & Walsh, 2005).

Individual differences exist in the ability and tendency to engage in those mechanisms and processes that revolve around emotions (Goham & Clore, 1999). Alexithymia is not considered a disorder, meaning the term is not a diagnostic category present in DSM IV or any other mental disorder manual (Helmes, McNeill, Holden & Jackson, 2008). As Mattila et.al. (2006) report Alexithymia has been shown to be more prevalent among depressed individuals and that the levels of Alexithymia decrease as the depression decreases. The two have, however, shown to be independent of each other (Marchesi, Brusamonti & Maggini, 2000) and tied by a strong association (Honkalampi, Hintikka, Tanskanen, Lehtonen & Viinamaki, 2000). For these reasons a proportion of those researching in the field (e.g. Lumley, Stettner & Wehmer, 1996) have speculated that it may derive from physical or mental illness, therefore depicting it as purely a state-dependent phenomenon. On the other hand there are researchers who believe it is a personality trait, demonstrating its absolute stability (Bagby, Parker & Taylor, 1994) and relative stability (Picardi, Toni & Caroppo, 2005). The latter position is that which is most accepted. If this were true the prevalence of alexithymia would

be expected not to grow with age. While some studies have found that alexithymia does steadily increase with age (Mattila et al, 2006) there is much evidence of alexithymia being normally distributed in the general population (Zimmermann, Rossier, de Stadelhofen & Gaillard, 2005). In accordance with the personality trait view-point, age and alexithymia are not expected to be significantly associated in the current investigation.

In the general population the prevalence of alexithymia is believed to be approximately 9.9%, 11.9% of which men and 8.1% women (Mattila et.al, 2006). Some studies have found the prevalence of alexithymia to be considerably higher, even as high as 23.3 %, (29 % males and 18 % females, Horton, Gewirtz & Kreutter, 1992). These investigations, however, tend to focus on a specific population type and/or have limited samples. Accross the large majority of studies it can be seen that the presence of alexithymia tends to fluctuate around 10 % within the general population. Higher rates of alexithymia have consistently been found for men (e.g. Honkalampi et al, 2000; Kokkonen, Karvonen, Veijola, Lasky, Jokelainen, Jarvelin & Joukamaa, 2001) with figures as high as 16.6% as opposed to 9.6% of presence detected in women (Salminen, Saarijarvi & Aarela, 1999), in large sample sizes of the general public. Joukamaa, Saarijarvi, Muuriaisniemi & Salokangas (1996) failed to find any significant gender difference in a study based exclusively on an elderly participant sample, which could help explain the controversial finding. Mason, Tyson, Jones, and Potts (2005) actually found alexithymia to be more prevalent in females than in males but their study only focused on undergraduates and this finding is not in line with the literature. Gender differences will, however, be examined in the current study in relation to alexithymia to make better light of the issue.

Now that the concept of alexithymia has been discussed along with its relation to age and gender focus will move onto analyzing another dimension believed to be affected by emotion processing deficits. The difficulty to differentiate, understand and appreciate emotions may have important implications in terms of possible forms of meta knowledge deficit, particularly of bibliographic information.(Scheibe, 1995). Lane et al (1987) believe Alexithymics are prone to avoid reflecting upon and generating representations of instances of their own experience. An avoidance that seriously limits their ability to story theirselves and the world around them (Scheibe, 1995) implying that such an emotion processing deficit does appear to impact upon the quality of the self-construct. Key to the proposed link between the identity construct and alexithymia are the gaps or fragmentations in the self-concept believed to be caused by a lack of understanding of emotions. The discussion will move onto explining this in detail.

The capacity to understand oneself and the sum total of the knowledge about oneself takes the name of Self-Identity or Self-Concept (Kernberg, Selzer, Koenigsberg, Carr & Appelbaum, 1989). Physical, psychological and social attributes are components of a person's self-Identity concept and are believed to be influenced by attitudes, habits, beliefs and ideas (Zucher, 1977). Kernberg et. al (1989) state that it is the knowledge of these components that gives people behavioural and inner continuity. Zurcher (1977) defines the notion of continuity as a complex process of continuing interpretative activity towards the individual's subjective stream of consciousness and the resultant accruing structure of self-conception. The notion of continuity is a recurring theme in relation to the identity construct and will be represented subsequently. The self-concept is made up of multiple dimensions which lead to the sense of identity (Akhtar, 1984). Several problems may, however, arise affecting a person's identity construct. Akhtar (1984) delineated the syndrome known as Identity diffusion characterized by contradictory character traits, temporal discontinuity of self, lack of authenticity, feeling of emptiness, gender dysphoria and inordinate ethic and moral relativism. As the self-concept evolves out of lived experiences which must be adequately cognitively organized (Yancy & Hadley, 2005) disruptions affecting the organizational phase result in differing extents of fragmentation (Fonagy, Gergely, Jurist & Target, 2002). A fragmented identity may arise due to impairments at identity formation or consolidation stages, therefore in adolescence or even earlier (Besser & Blatt, 2007), but evidence for this is somewhat lacking. A self-concept characterized by a lack of coherence and structure has been linked to weak and disorganized parent-child attachments relationships (Fogagy et al, 2002). Aspects of the self-concept may be transients and situation dependent (Fournier & Payne, 1994) but this paper is concerned with those aspects which form the backbone of the identity construct and allow sense of continuity.

The emotional intelligence is defined as the ability to perceive, appraise and regulate fellings growth (Mayer, Salovey & Caruso, 2008) and alexithymia overlaps conceptually with this construct (Luminet, Vermeulen, Demaret, Taylor & Bagby, 2006). Parker, Taylor & Bagby (2001) provided empirical evidence of Alexithymia being strongly and inversely related to emotional intelligence, whilst remaining an independent construct. The emotional intelligence construct is contained within Gardner's (1999) definition of Intrapersonal Intelligence. This is defined as the capacity to understand oneself, to appreciate ones feelings, fears and motivations (Gardner, 1999). This definition summarized the theoretical link between alexithymia and the identity construct. The points of interception that exist within the literature between the concepts are many. Benedik (2009) states that diffused Identity sufferers think in a more operative and concrete way than the general population, which bares strong similarities with Kristal et al's (1988) description of alexithymics' style of thought mentioned previously. Those with a diffused identity have been shown

to describe their selves in contradictory and shallow ways, with this difficulty extending to the interpersonal sphere (Benedik, 2009). They are, in fact, able to enjoy daily interactions with others in the context of ordinary social relationships, but these become conflicted and entangled once the relationship becomes more emotionally intense requiring a greater degree of mental organization (Fonagy, 2002). Similarly, alexithymics seem to apply a simple categorization of all interpersonal relationships into specific groups which leads these to remain superficial (Vanheule, Desmet, Meganck & Bogaerts, 2006). In more general terms, Brey (2001) highlights that Alexithymia is characterized by a lack of identity feelings while Fonagy et al (2002) believe that the ability to self-regulate and adequately integrate experiences in a cognitive framework leads to optimal emotional regulation and knowledge of feelings. As stated, many links can be found between the topics.

As previously mentioned past research has highlighted the strong tie linking alexithymia to particular kinds of attachment styles. Attachment theory conceives attachment as the child's undersatanding of the relationship with its primary caregiver and the primary caregiver's ability to tune into the child's necessities, particulary the emotional needs (Bowlby, 1980). Brennan, Clark & Shaver (1998) explain how adult attachment styles are based on differences relative to two dimensions: a)anxiety, indicating the degree of need for approval and fear of rejection and b)avoidance, relating to the tendency to avoid intimacy and discomfort. These two dimensions are central to the current investigation. A weak or insecure attachment style, occurring when the primary attachment figure is unresponsive and uncaring, can impact upon the formation of individual personality characteristics (Waters, Crowell, Elliott, Corcoran & Treboux, 2002). A significant association has been established in studies investigating the relationship between Alexithymia and an internal working model of parents as being cold and overprotective (Kooiman, Vellinga, Spinhoven, Draijer, Trijsburg & Rooijmans, 2004). In fact studies employing a measure of adult attachment style have found negative associations of alexithymia with secure attachment (Montebarocci et al, 2004). Vice versa, a positive association has been found between Alexithymia and attachment related avoidance and anxiety (Meins, Harris-Waller & Lloyd, 2008), with the relationship between Alexithymia and attachment, generally, shown to be strong (De Rick & Vanheule, 2006).

Attachment styles of a secure kind establish a resistance against the revision of the working model of self, ensuring a self protective function which creates a sense of self-coherence and identity (Guidano & Liotti, 1983). The quality of the working models of the attachment to the parents are an important factor in determining a successful identity formation, in terms of this being fully and adequately consolidated (Besser et al, 2007). Samuolis, Layburn & Schiaffino (2001) conducted study investigating the matter and found a strong association between the quality of the attachment style

and the identity construct, with the link taken to be an indicator of psychosocial functioning. The ties which can be found in the literature linking alexithymia and the identity construct to attachment styles are many.

There is much evidence that difficulties understanding and differentiating emotion are linked to reduced self esteem levels. Alexithymia has been found to be inversely correlated with self-esteem (Shina, Nakazato, Mitsumori, Koizumi, Shimizu, Fujisaki & Iyo, 2005), with Silverstone & Salsali (2003) highlighting that when successfully raising patients' self esteem level though treatment Alexithymia levels dropped considerably. Wearden et al (2005) gave further evidence of the negative association between Alexithymia and self-esteem in their study, speculating levels of self-esteem may have a mediating effect between Alexithymia and attachment styles. It is well documented that there where a personality is not fully integrated, experiencing fragmentation in the complex unit of memories, behaviour patterns and social relationships, there is an elevated risk of low levels of self-esteem (Breiner, 1995). Eryigit & Kerpelman (2009) explored this by conducting a study on the identity styles of young Turks where they investigated the associating between self-concept clarity and self-esteem, finding a positive relation between the two. Self-esteem has, however, usually been assessed in relation to specific aspects of the identity construct, as in the case of the numerous studies which have investigated the link between self-esteem and aspects of stable body image (e.g. Ochner, Gray & Brickner, 2009). The existing relationship between Alexithymia and self-esteem and identity construct and self-esteem has been well established, as for the association between Alexithymia and attachment styles and identity construct and attachment styles, explained above. The relationship between Alexithymia and Identity construct, instead, has not benefitted fro the same attention.

There appears to be a considerable lack of research within the literature regarding the extent the self identity construct is shaped by knowledge afforded by an understanding of one's emotions. De Berardis, Serroni, Campanella, Carano, Gambi, Valchera, Conti, Sepede, Caltabiano, Pizzorno, Cotelessa, Salerno & Ferro (2009) sought to explore the Alexithymia-diffused identity link. Their investigation, while baring similarities with the present study, employed the DES scale for the assessment of dissociative experiences. This, despite showing good reliability and validity, is a measurement which delivers a single scale (Bernstein et al, 1986), therefore failing to indicate which aspects of the identity construct that are affected and which are unscathed. In fact the DES scale is a measure of inner continuity (Bernstein et al, 1986) matching almost perfectly with the "temporal continuity" scale, which is just one of the six dimensions of the identity construct scale employed in

the current study. The study by Kiyotaki and Yokoyama (2006) also focused in on a sole aspect of the identity construct, exploring the relation between gender identity and Alexithymia. Gender identity is also just one of the identity dimensions the current study seeks to explore un relation to alexithymia. The literature contains a large number of studies that explore this relation but choose to only focus on one aspect on the identity construct. The need to shed light on this issue is therefore evident, in an attempt to clarify the ties between the concepts. It is therefore hypothesised that the dimensions of a poorly consolidated identity will be linked to alexithymia to the same extent as low self-esteem and insecure attachement styles are, therefore placing the concept on the same level as these traditional predictors.Higher alexithymia levels will be more strongly associated with males, as is suggested in the literature. The prevalence of alexithymia is not expected to increase significantly with age, but should be a normally distributed personality trait.

Method

Participants

A total of 276 participants participated in the study. However, only data from the 208 participants that completed all questionnaires entirely was analyzed, comprising adults aged 18 to 63, with a mean age of 30.7 (SD = 18.83). The largest number possible of participants was employed avoiding the risk of finding significant coefficients just by chance. As a general rule of thumb there must be 20 times as many participants as independent variables (Tabachnik & Fidell, 2001), with this relation being over 23 to 1 in the current study. Attempts were also made to achieve the most varied sample of participants as possible thus refraining from over-utilizing the student population which constituted the most readily available source. Participants of all ages and backgrounds where therefore employed. Depressive illness, bi-polar disorder, schizophrenia, generalized anxiety disorder, a phobia, obsessive compulsive disorder, a history of pain or nausea, hallucinations, seizures, stroke, a sleep disorder, dementia, Alzheimer's disease or a brain injury made up the exclusion criteria. Age and gender were recorded but participants' name or other details were not, allowing full anonymity. Ethical approval was granted for this study.

Design

A multiple regression design was used to test the predictability of the criterion variable in relation to the independent variables. A multiple regression analysis was performed on the data allowing inferences to be made about. The dependent variable or criterion variable consisted of the TAS-20 scores assessing Alexithymia while the independent variables consisted of the scores from the Rosenberg Self Esteem Scale (RSES, Rosenberg, 1965), the scores from the Experiences in Close Relationships (ECR, Brennan ???,2000) questionnaire assessing attachment styles and the Identity Consolidation Inventory (ICI, Samuel & Akhtar 2009) assessing the structuralization of individual identity.

Materials

A total of four questionnaires were administered to the participants.

The studies mentioned above all used the 20-item Toronto Alexithymia Scale (TAS-20), a self-assessment method tapping into participants' feelings and style of thinking. This is the most widely used measure of Alexithymia (Mattila, et.al, 2006) and is also considered to be the most efficient, as other scales have shown to lack adequate reliability and/or validity (Bagby et al, 1994). This is a psychometric test made up of 20 items aimed at assessing the ability to distinguish between feelings and bodily sensations associated with emotional arousal and the ability to describe feelings to others. The scale also contains items assessing externally oriented thinking. The TAS-20 is made up of three sub-scales (difficulty identifying feelings, DIF, difficulty differentiating feelings, DDF, and externally oriented thinking, EOT) but the large majority of studies do not focus on the independent and discriminating properties of these sub-scales (De Gucht, Fontaine & Fischler, 2004). The current study will be considering the overall scores for the TAS-20 along with considerations relating to the sub-scales. The overall TAS-20 has demonstrated an acceptable internal consistency (alpha coefficient = 0.81) as did each of the three subscales (alpha coefficient = 0.78, 0.75 and 0.66 respectively for DIF, DDF and EOT, Bagby et al, 1994). It is structured as a 5-point-Likert scale. The RSES is made up of 10 items and is a unidimensional scale measuring self-esteem in a 4-point-Likert scale format.

The experiences in close relationships (ECR) questionnaire comprises two sub-scales assessing "attachment related anxiety" and "attachment related avoidance". It is structured as a 7-point-Likert scale and is made up of 36 items. It has shown to have a high level of internal consistency (alpha coefficient = .91 and .94, for attachment related anxiety and avoidance) in a sample of undergraduate students (Brennan et al, 1998).

Finally, the ICI questionnaire was administered to the participants and 5-point-Likert scale (?) made up of 35 items. It comprises the following sub-scales: Subjective self-sameness, Consistent attitudes and behaviours, Stable body image, Gender, Authenticity, Temporal continuity and Ethnicity and conscience. This last dimension was omitted in the current study as considered irrelevant to the overall theme of the investigation. Furthermore Samuel et al (2009) found it to be the only scale that did not correlate significantly with the other dimensions of the ICI; therefore only 30 of its items were utilized in the present study. The ICI has shown to have high internal consistency in each of the domains assessed (alpha coefficient for subjective self-sameness = 0.98, Consistent attitudes and behaviours = 0.97, stable body image = 0.97, gender = 0.97, authenticity = 0.98 and temporal continuity = 0.97). Each of these ICI sub-scales was examined independently in the current investigation, without considering an overall score for the questionnaire.

The pro-version of a software program named "SurveyMonkey" was employed. This enables the creation of itemized web-based surveys and was utilized to encode the questionnaires and collect the participants' responses.

Procedure

The 4 questionnaires and relative 12 scales were coded into the Pro-version of the SurveyMonkey software program. All items were entered into the system along with their appropriate weight, depending on the positivity or negativity of these. The participants received an email with a brief description of the study and a hyperlink which allowed direct access to it. The entire investigation was carried out. After being directed to the study participants were presented with a consent form. Not consenting directed them to the end of the survey and their participation would terminate; four participants chose to do so. Participants were then required to enter their age and gender along with the date. Following this the Information on present study page was presented providing participants with an overlook of the study and the questionnaires were subsequently presented. All participants completing the entire study were entered into a 50 £ prize draw. This was carried out by directing all participants to a page where they could enter their name and email address in order to enter the prize draw. These details were kept separate from the responses to the scales guaranteeing anonymity. An online random number selector program was utilized to select a number from 1 to 208, representing each of the participants, so that a winner could be picked fairly. Once the data were collected all information relative to the 68 participants that withdrew throughout the study was deleted and their responses omitted from the analysis.

Results

Descriptive Statistics

Table 1.

Data relative to participants' age and scores on the scales (N = 208)

Descriptive Variables	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Age	45	18	63	30.74	11.83	139.98
Rosenberg Self-Esteem Scale	25	15	40	30.18	5	25.04
Subjective Self	14	4	18	8.49	3.06	9.39
ConsistentAttitude/Behaviour	15	4	19	9.38	3.09	9.52
Stable Body Image	16	5	21	12.15	3.72	13.84
Gender Identity	16	5	21	11.98	3.41	11.61
Authenticity	16	5	21	8.92	3.06	9.38
Temporal Continuity	20	5	25	11.52	3.69	13.58
Attachment Related Anxiety	100	18	118	59.45	21.912	480.13
AttachmentRelatedAvoidance	104	18	122	53.66	19.46	378.57
Total TAS-20	63	21	84	45.63	12.71	161.52
TAS-20 DIF	27	7	34	15.34	6.15	37.89
TAS-20 DDF	20	5	25	12.48	4.54	20.58
TAS-20 EOT	25	8	33	17.82	4.72	22.26

The 208 participants whose results were analyzed were aged from 18 to 63 with a mean of 30.74 (SD = 11.83). Despite the identity consolidation inventory (consisting of 6 dimensions) tapping assessing diffused identity disorder which is not common within the general population, the results yielded good amounts of range and variance. This was achieved for all scales, especially the attachment style scales which almost displaying the full range of scores. The Tas-20 scores for alexithymia are interpreted as follows: TAS-20 < 51 signifies Alexithymia is not present, TAS-20 = 51-60 signifies possible Alexithymia, while TAS-20 > 61 signifies presence of alexithymia (relating to the overall

scores). The participants that scored over 61 in the present study, therefore classified as alexithymic, were 23. This represents 9% of the total participants employed and this figure is in line with the literature, relative to the presence of Alexithymia within the general population.
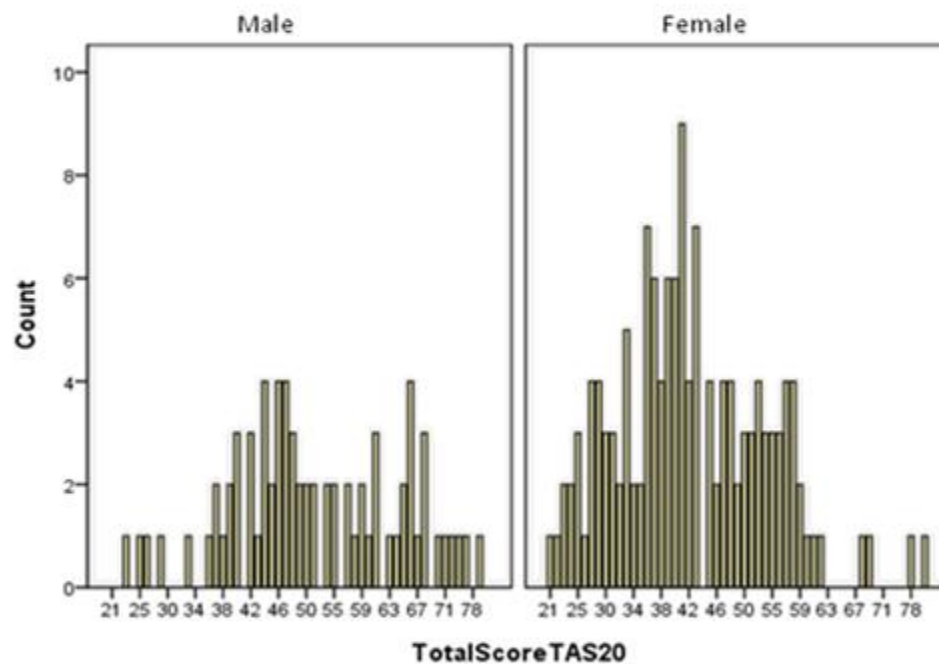

Figure 1. Gender difference

The different pattern of performance based on gender relative to the overall Tas-20 scores can be observed in figure 1. Males are represented in section 1 while women in section2. The scores of female participants are visibly concentrated in the middle of the graph and below the cut-off point for Alexithymia classification (N>61).The scores for the males, as can be seen, are distributed more evenly across the scale. Furthermore a greater number of males scored above the cut-off point for Alexithymia despite the overall lower number of male participants, as shown in the table below. The gender based differences are evident when focusing on the highest alexithymia scores, meaning total TAS-20 score >61, as can be seen in figure 1. It is important to state that 67 % of participants were female, which explains the central peak of scores for females, which is not present for males.

Correlation between age and alexithymia

Table 2. Age in relation to TAS-20 scales (N = 208)

		Total TAS- 20	TAS20DIF	TAS20DDF	TASEOT
Age	Pearson Correlation	.102	-.010	.086	.204
	Sig. (2-tailed)	.143	.89	.216	.003

A Pearson's correlation was performed in relation to age and total TAS-20, DIF, DDF and EOT. There was a significant correlation between age and externally oriented thinking (EOT) but all other correlations did not achieve significance; age and total TAS-20 (r = .102, N = 208, p >.05, two-tailed), age and DIF (r = -.01, N = 208, p >.05, two-tailed), age and DDF (r = .086, N = 208, p >.05, two-tailed) and age and EOT (r = .204, N = 208, p<.01). Figure 2 below shows age plotted against total Tas-20 scores. There is an absence of pattern in how the graph is plotted and higher total Tas-20 scores are not found among the higher age groups suggesting age did not impact significantly upon performance in the scale. It is important to state that the mean age for the total participants was 30.7% while those classified as Alexithymic had a mean age of 37.3% years, suggesting alexithymia was related to increasing age, albeit not significantly.
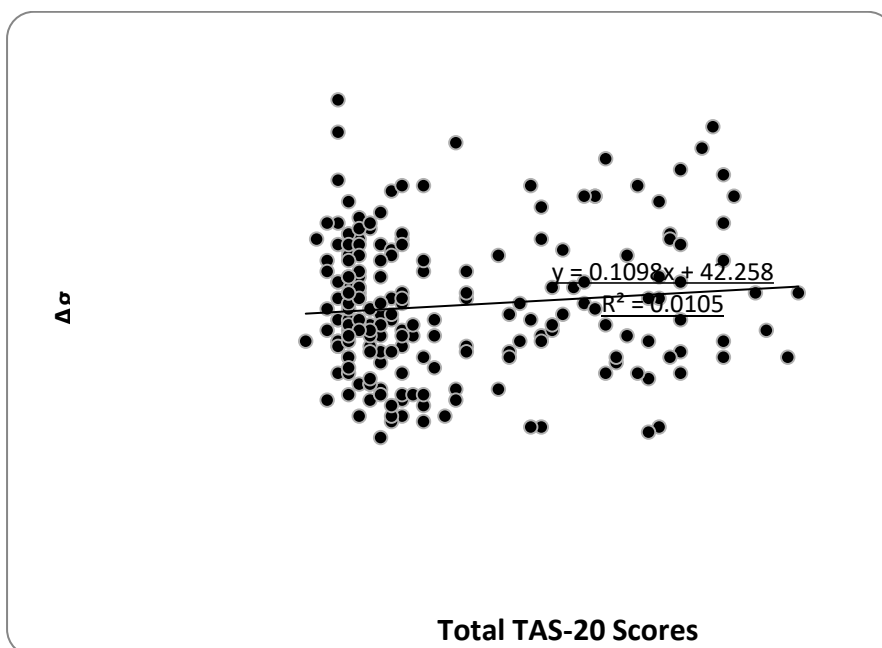

Figure 2. Relation between alexithymia and age

Linear Multiple Regression

Since no a priori hypothesis had been made to determine the order of the entry of the enter method was used for the multiple linear regression analyses, from which 4 models were derived. These would help understand which group of variables best predicts Alexithymia. Tolerance, as the proportion of a variable's variance that is not accounted for by all remaining independent variables, is regarded as being important only if too low (Tabachnick & Fidell, 1989) and in this case it was not for any of the variables suggesting a weak relationship among the predictors.

Model 1 - Dependent Variable: Total TAS-20

A significant model emerged for the predictability of the overall TAS-20 ($F_{(9,198)}$ = 40.1, p < .001). The model accounts for 63% of the variance (Adjusted R^2 = .63). In this model RSES, gender identity, authenticity and attachment related avoidance scores were significant predictors while the remaining five variables were not.

Model 2 – Dependent Variable: DIF

The model examining the variance for the difficulty identifying feelings dimension of the TAS-20 was significant ($F_{(9,198)}$ = 47.16, p < .001). This model explains the greatest amount of variance, 67% (Adjusted R^2 = .67). RSES, consistent attitudes and behaviours, authenticity, temporal continuity and attachments related avoidance were all significant predictors, subjective self-sameness reached marginal significance, while stable body image, gender identity and attachment related anxiety were not significant.

Model 3 – Dependent Variable: DDF

The model for difficulty differentiating feelings achieved significance ($F_{(9,198)}$ = 24.71, p < .001). This model was less successfull than the previous two, explaining 51 % of the variance (Adjusted R^2 = .51), but can still be considered a good model (Field, 2009). RSES, authenticity and attachment related avoidance were the only significant predictors in the DDF model.

Model 4 – Dependent Variable: EOT

The model where externally oriented thinking was the criterion variable achieved significance ($F_{(9,198)}$ = 7.75, p < .001) but proved to be the least successful model, accounting for 23 % of the

variance (Adjusted R^2 = .23). Significant predictors in this model were RSES, gender identity, attachment related identity and attachment related avoidance while subjective self-sameness, consistent attitudes and behaviour, stable body image, authenticity and temporal continuity were not.

Table 3. Attachment styles, self-esteem and identity construct scales predicting TAS-20 scales (N = 208)

	Dependent Variable	Predictors	Standardized coefficients - Beta	Sign.	Tolerance	Adjusted R Square
MODEL 1	Overall Tas-20 score					**.630**
		RSES	-.356	.000	.487	
		SubjectiveSelf	.108	.112	.390	
		ConsistentAttsandBs	.094	.153	.413	
		StableBodyImage	.030	.601	.532	
		Gender Identity	-.116	.016	.781	
		Athenticity	.132	.028	.502	
		TemporalContinuity	.075	.140	.704	
		Attachment - Anxiety	-.076	.215	.479	
		Attach. -Avoidance	.354	.000	.603	
MODEL 2	DIF Tas-20 score					**.667**
		RSES	-.257	.000	.487	
		SubjectiveSelf	.119	.065	.390	
		ConsistentAttsandBs	.168	.008	.413	
		StableBodyImage	.076	.169	.532	
		Gender Identity	-.008	.864	.781	
		Athenticity	.131	.022	.502	
		TemporalContinuity	.111	.021	.704	
		Attachment - Anxiety	.071	.219	.479	
		Attach. -Avoidance	.155	.003	.603	
MODEL 3	DDF Tas- 20 score					**.508**

RSES	-.299	.000	.487	
SubjectiveSelf	.058	.459	.390	
ConsistentAttsandBs	.032	.677	.413	
StableBodyImage	.001	.984	.532	
Gender Identity	-.056	.316	.781	
Athenticity	.199	.004	.502	
TemporalContinuity	.012	.841	.704	
Attachment - Anxiety	-.098	.165	.479	
Attach. -Avoidance	.413	.000	.603	

MODEL 4	EOT tas-20 score				**.227**
	RSES	-.335	.000	.487	
	SubjectiveSelf	.080	.413	.390	
	ConsistentAttsandBs	.005	.958	.413	
	StableBodyImage	-.019	.825	.532	
	Gender Identity	-.249	.000	.781	
	Athenticity	-.007	.936	.502	
	TemporalContinuity	.045	.533	.704	
	Attachment - Anxiety	-.203	.022	.479	
	Attach. -Avoidance	.354	.000	.603	

Discussion

The purpose of this study was mainly that of examining the link between alexithymia, the identity construct attachment style and self-esteem, along with assessing the effect age and gender factors have on alexithymia. To the researcher's knowledge this is the first study that explored the relationship between alexithymia and the multiple facets making up the identity construct. Focus was therefore placed not a specific aspect of this construct but on all dimensions believed to be encapsulated within it. Alexithymia was seen to be significantly associated with the male sex and age did not increase significantly in relation to alexithymia, thus confirming the hypotheses regarding gender difference and age. The findings relative to the hypothesis whereby the identity construct would be as strong a predictor of alexithymia as more traditional ones, namely self-esteem and attachment styles, requires a more complex interpretation. Overall the findings suggest an association does exist between alexithymia and a poorly consolidated or fragmented identity construct. Attachment style, self-esteem and the identity construct together accounted for a substantial amount of variance in alexithymia. The models 1, 2 and to a lesser extent 3 are considered good models, according to Field (2009), while model 4 was not so successful. The ties between these concepts are not straight forward and accurate examination of the specific dimensions within each questionnaire is needed to better understand the link that has emerged. The 3 characteristics which explain alexithymia in the definition by Taylor et al (1997) previously mentioned relate directly to the 3 scales contained in the Toronto alexithymia scale (difficulty identifying feelings, difficulty differentiating feelings and externally oriented thinking). The 6 aspects of the identity construct are related to these 3 scales in different ways and will be explained in turn.

Because the sum knowledge of a person's own identity forms the self-concept and accurate organization of this information allows a sense of continuity (Kernberg et al, 1989) the most commonly used measure of fragmented identity, the DES, focuses purely on measuring the dissociative or fragmented continuum of experiences (Bernstein et al, 1986). The temporal continuity dimension in the present study, which refers to this notion, can therefore be regarded as the core aspect in the identity consolidation inventory (ICI). This was seen to be a significant predictor in model 2, relative to the DIF sub-scale of the TAS-20. Individuals who scores high on difficulty identifying feelings are likely to confuse bodily sensations with emotions when they try to explain their feelings to others (Miens, Harris-Waller & Lloyd, 2008). DIF appears to be highly correlated with neuroticism (De Gucht et al, 2004). Temporal continuity was not, however, a strong predictor of the overall TAS-20 score, of externally oriented thinking or of difficulty differentiating

feelings. This last aspect is surprising, as the DIF and DDF scales have been criticized for being similar constructs tapping into the same dimension (Wearden et al, 2005). The consistent attitudes and behaviours dimension of the ICI yielded the exact same results. It refers to stable personal values and ideologies, and people who possess a consolidated identity display a repertoire of behaviours with congruous and predictable parameters (Akhtar, 1996). This was also a significant predictor of the difficulty identifying feelings, but not of the remaining alexithymia scales.

A substantial amount of previous research exploring the link between alexithymia and the identity construct had focused solely on body acceptance and stable body image. Impairment in the ability to regulate and process affect has often been found in individuals with eating disorders from which stems a profound instability towards the body image (Speranza, Corcos, Loasc, Stephand, Guilbaud, Perez-Diaz, Venisse, Bizouard, Halfond, Flament & Jeammet, 2005). A strong association has been observed between body dissatisfaction and eating disorders in relation in relation to dysregulated mood (Cochrane, Brewerton, Wilson & Hodges, 1993). In their study Speranza et al (2005) found those with eating disorders to have higher levels of alexithymia than controls. For this reason it was surprising to find that the stable body image score, tapping into subtle body disturbances (Samuel et al, 2009), was not a significant predictor in any of the alexithymia models in the current study. The findings are therefore not supported by the literature.

The subjective self-sameness dimension consists in the individuals' ability to act and feel in a manner that is true to their selves, across various social situations (Akhtar & Samuel, 1996). Alexithymics have been seen to be highly susceptible to the influence of those around them and change dramatically according to the context (Taylor, 1994) possibly because not driven by knowledge of their feelings. In the present study, however, subjective self-sameness was not a significant predictor of the overall TAS-20, DDF and EOT, and was only a marginally significant predictor of DIF. Thus, subjective self-sameness did not confirm the expectations surrounding this dimension.

In relation to the gender identity dimension presented in the ICI, individual who possess a fully consolidated identity experience subjective clarity regarding their gender (Akhtar, 1996). This occurs when an individual's gender is in accordance with their biological sex and their gender role and choice of sexual partners is experienced harmoniously (Akhtar, 1996). Arciniega, Anderson, Tovar-Blank & Tracey (2008) focused on the male sex and found a strong association between alexithymia and over-simplistic and superficial gender identity and role, shaped and encouraged by those around. Therefore, not surprisingly, in the current study poorly consolidated gender identity was a

significant predictor of EOT, which indicated a tendency to focus on external instances of everyday life, rather than internal ones (Miens et al, 2008). Kiyotaki et al (2006) failed to find a significant association between gender identity and alexithymia, however, basing their study purely on a sample of female undergraduates and adopting a different scale from that contained in the ICI.

Lastly, the concept of authenticity, included as a dimension of the ICI, is of fundamental importance because it is perhaps the notion which mostly resembles the overall description of alexithymia. It is defined as being able to be completely true to yourself and others and to be able to fully recognize internal information, coming from within the body, leading to a crystallized identity (Akhtar, 1984). It also refers to having a capacity for originality (completely being "ones own person") and being knowledgeable about and committed to and intrinsic and interpersonal ideology (Akhtar, 1996). As was expected, authenticity proved to be significant predictor of alexithymia. This dimension accounted for a significant amount of variance in all models (overall TAS-20, DIF and DDF) with the sole exception of ETO.

Poor self-esteem was confirmed to be a powerful predictor of alexithymia, as was suggested by the literature. Similarly insecure attachment styles, a traditionally associated with alexithymia, was a significant predictor but only for attachment related avoidance and not anxiety, as was instead found by Meins et al (2008).

It is interesting to notice the different pattern of results for the EOT TAS-20 scale. Model 4, with external oriented thinking as dependent variable, accounted for the least amount of variance. This scale was also the only one where gender identity was a significant predictor. More importantly the authenticity dimension of the ICI, baring profound similarities with the concept of alexithymia, was seen to be a powerful predictor of all TAS-20 scales with the exception of EOT. Wearden et al (2005) found this scale to not correlate very highly with DIF and DDF, leading them to suggest combining the latter two to produce a new alexithymia scale. De Berardis et al (2009) found unstable body image to be related to all TAS-20 dimensions except from EOT. The literature is rich with findings where EOT is associated with variables in differing ways in comparison to the overall TAS-20, DID and DDF score, suggesting it may lie out with the alexithymia construct.

In the present study men were displayed a higher prevalence of alexithymia, a finding which is in line which the literature. Alexithymia was not significantly related with increasing age as was found in

the Mattila et al (2006) study, in which used over 6000 participants. Their participant sample was, however, comprised of both working-age and very old people, which could explain the discrepancy of findings. Elderly people also speak about their feelings less openly, as passes generations were not encouraged to do so, (Roos, 1987) which might explain the association Mattila et al (2006) found. Much more investigation is needed in relation to age and alexithymia, to better understand whether this actually constitutes a stable personality trait. Bagby, Parker & Taylor (1994) define it primarily as a stable personality trait and secondarily as state-dependent, implying it can emerge due to circumstances despite usually being a fixed trait. This is possibly the best way to conceptualize alexithymia.

There are several limitations in the current study. Whilst the time to complete the entire study was reasonable (approximately 20 minutes) participants were presented with a large number of items throughout the 4 questionnaires (100 items in total). This may have caused some participants to loose interest in the final stages of the study as is suggested by the large withdrawal rate (68 in total, many of which withdrew when presented with the final questionnaire). Responses given for the Toronto alexithymia scale and the experiences in close relationships questionnaire, respectively the 3rd and 4th questionnaires presented, may therefore contain somewhat less accurate responses than the initial 2 questionnaires. There are also limits inherent in the methodology. It is difficult to make a bold statement regarding the overall strength of the link between alexithymia and the identity construct as the nature of self-assessment is notoriously not entirely reliable. To accurately "know your self" is believed to be more difficult than it seems and inextricably subject to biases (Mathieson, Barfield & Beaumont, 2009). Lastly, a self-assessment measure of the level of consolidation of a person's identity construct is in theory a wonderful tool. This may, however, be a little more difficult to achieve in practice. Specific dimensions of the identity construct which other questionnaires are entirely dedicated to assess are measured by a limited number of items in the identity consolidation inventory (5 items for each of the 6 dimensions). The scales might therefore only be superficially tapping into all dimensions of the identity construct. Furthermore, due to the novelty of the questionnaire to the best of the researcher's knowledge no other study has yet been published which employed the ICI (other than the Samuel et al, 2009, study testing validity and reliability of the ICI which they created) rendering findings difficult to compare.

What has emerged from the study is multidimensional relationship between alexithymia and the identity construct, with a number dimensions of the identity construct significantly predicting aspects of the TAS-20 while other dimensons did not. Müller, Bühner, Ziegler & Şahin (2008) state that there is a large amount of overlap between alexithymia and its surrounding concepts of social

security, ambivalence and emotional expression. Similarly, this may apply to the relationship between alexithymia and the identity construct. There is the necessity to clearly state and delineate the concepts' boundaries and similarities which would result in more efficient treatments. At there are particular treatments, such as those for alcohol related problems that are specific to alexithymics (Bujarski, Klanecky & McMchargue, 2010). Such treatments may be further tailored if a consensus emerged within the literature confirming alexithymia's association with a poorly consolidated identity construct.

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