

## Social Factors in Alexithymia

J. Kauhanen, G.A. Kaplan, J. Julkunen, T.W. Wilson, and J.T. Salonen

Social characteristics of alexithymic individuals were examined in a population-based study of 2,682 middle-aged men from Eastern Finland. Alexithymia, referring to difficulties in identifying and verbally describing inner feelings, was assessed using the Toronto Alexithymia Scale (TAS). Men whose high TAS score suggested reduced ability in verbal emotional expression were more often unmarried and had low levels of

social contacts and acquaintances. Education, income, and occupational status were inversely related to the TAS score. These associations remained statistically significant after adjustment for confounding factors. The results suggest that alexithymia could be viewed not only as a psychological phenomenon, but also partly as a socially determined one.

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CONTEMPORARY Western psychiatry reminds us how important it is for an individual to be able to distinguish between his/her various emotional states. Furthermore, a widely accepted cultural rule states that normal individuals should freely communicate inner feelings verbally to others, since locked-in emotions are believed to lead to health problems, both somatic and psychological.<sup>1</sup> Since poorly developed skills in emotional expression are considered to reflect a deficit,<sup>2</sup> a large number of clinical studies have been performed with people who seem to have difficulties in verbally symbolizing their feelings.<sup>3-6</sup> Lack of interest in introspection and fantasy<sup>7</sup> and an operational mode of thinking<sup>8</sup> have been claimed to accompany these features. Sifneos<sup>9</sup> crystallized the findings into a heuristic concept of alexithymia, which literally means "no words for feelings."

Predominant theories view alexithymia as a stable personality trait,<sup>7,10</sup> but it has also been described as a coping response to specific situations such as chronic pain or physical trauma.<sup>11</sup> Major etiologic theories of alexithymia focus on psychodynamic<sup>7</sup> or neurobiologic models.<sup>12-14</sup>

Kirmayer<sup>2</sup> has brought a sociocultural viewpoint into the discussion. He argues, based partly on medical anthropologic research,<sup>15,16</sup> that verbal symbolization of inner states is only

one idiom of emotional expression, overemphasized in Western culture by the influence of psychodynamic psychotherapy. The present construct of alexithymia might not even be applicable in other cultures.<sup>17</sup> Kirmayer<sup>2</sup> makes two further theoretical suggestions. First, alexithymia can be seen as an outcome of social interaction, and from this perspective it is irreducibly social. Second, there might also be a failure of psychological discourse among the lower socioeconomic class.

Few studies have attempted to investigate the socioeconomic correlates of alexithymia, and no empirical studies have been presented to examine how alexithymia relates with social interactions. Studying two groups of patients with psychosomatic problems, Borens et al.<sup>18</sup> found that persons who were brought up in a lower social class environment and had limited education and lower income appeared to be more alexithymic in the interview compared with those who came from higher social classes and were more educated. Positive relationships between alexithymia and lower social class status have been reported in some<sup>19,20</sup> but not all studies.<sup>21,22</sup> The ambiguous findings might be due to poor psychometric properties of some of the instruments used in these studies to assess alexithymia.<sup>23,24</sup> Some degree of caution is also necessary when results from studies that use only selected clinical samples are interpreted. It must be kept in mind that an alexithymic appearance could be a reaction or consequence of an underlying physical condition.<sup>2</sup>

The aims of the present epidemiologic study were to examine (1) whether alexithymia is associated with social relationships and (2) whether alexithymia varies by socioeconomic factors. These issues were addressed in a large population-based (nonclinical) sample to avoid

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*From the Human Population Laboratory, Berkeley, CA; the Rehabilitation Foundation, Helsinki; and the Department of Community Health and General Practice, Kuopio University, Kuopio, Finland.*

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*Address reprint requests to J. Kauhanen, M.D., Department of Community Health and General Practice, University of Kuopio, Box 1627, 70211 Kuopio, Finland.*

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possible clinical biases and to overcome power problems so often experienced in small-scale studies.

## METHOD

### Subjects

The study sample consisted of four representative age cohorts of middle-aged men from the town of Kuopio and surrounding rural communities in eastern Finland. These men, aged 42, 48, 54, or 60 years at baseline, were participants in the Kuopio Ischemic Heart Disease Risk Factor Study (KIHD).<sup>25</sup> The KIHD is a prospectively designed epidemiologic research project that comprehensively assesses physical, psychosocial, and behavioral background factors for carotid atherosclerosis and cardiovascular diseases. A total of 2,682 men (82.9% of those invited) participated in baseline examinations.

### Assessments

The Finnish version of the self-administered Toronto Alexithymia Scale (TAS)<sup>26</sup> was used as the measure for alexithymia. Psychometric properties of the 26-item TAS have been thoroughly examined in a series of studies in various populations.<sup>24,27,28</sup> Since at the time of our study the validity and reliability of this scale were much better established than those of any other self-report measure, it had become the scale of choice for population studies of alexithymia.

Assessments of socioeconomic background included the previous year's reported gross income, a continuous variable divided into deciles, education (4-point scale describing the highest level of education attained), occupational status (white collar = 1, blue collar = 0), unemployment, and area of residence (rural = 1, urban = 0). A total index of six indicators of parents' social status, poverty, and housing<sup>29</sup> was used to assess childhood economic conditions. The other sociodemographic variables examined independently were age, marital status (married = 1, nonmarried = 0), father's education, and mother's education, coded as subject's own education. An extended version of the social contacts scale of the North Karelia Study<sup>30</sup> was used to assess the social network and amount of social connections. The men were also asked to evaluate on a 4-point scale (very few, a few, many, very many) how many people they were closely acquainted with among neighbors, friends, and other people at work, and whether they felt that they did not have any good friends.

### Statistical Analysis

Pearson Product-Moment Correlation Coefficients were computed for continuous or ordinal independent variables and the TAS. To estimate the overall effect of social and sociodemographic variables on TAS score as well as the partial associations of independent variables with the TAS, a series of least-square linear regression analyses were conducted. This was also done to determine whether some of the findings of Parker et al.<sup>31</sup> were replicable in this sample. Age-adjusted means of the TAS score were calculated in each class of the independent variables. Finally,

three dummy variables, created on the basis of TAS quartiles, were included in logistic regression models with pertinent cofactors to examine the estimated relative probabilities of men with high versus low alexithymia score to belong to the following groups: nonmarried, blue collar, unemployed, and less than elementary school (under 6 years) education. SPSS-X<sup>32</sup> and SAS 5.18<sup>33</sup> statistical packages were used in the analyses.

## RESULTS

A total of 2,297 (85.6%) men returned the TAS questionnaire; the overall mean of the TAS version used in this study was 31.87 (SD = 7.45). The score ranged from 6 to 27 for the first (lowest alexithymia) quartile, from 28 to 32 for the second, from 33 to 37 for the third, and from 38 to 57 for the fourth (highest alexithymia) quartile.

In univariate analyses, the TAS had a statistically significant relationship with all 10 socioeconomic and social connection variables (Pearson's *r* in parentheses) as follows: education (-.21), occupational status (-.193), income (-.186), social contacts (-.168), marital status (married = 1: -.129), father's education (-.108), mother's education (-.096), rural residence (.06), poor childhood economic conditions (.057), and age (.051). The initial linear regression model with these variables entered as independent variables by the  $R^2$  maximizing stepwise procedure explained 9.1% of the variation of the TAS ( $R^2 = .091$ ,  $F = 19.9$ ,  $P < .0001$ ). A backward elimination procedure yielded a model with education, occupational status, income, total social contacts, and marital status as independent predictors, all statistically significant at the pre-stated  $\alpha$  level of .05. No significant interactions between socioeconomic variables and the level of social interaction were observed when interaction terms were added to the models.

Table 1 shows the univariate  $\beta$  coefficients of each independent variable as well as the statistics of the best-fitting 5-variable linear model. Age-adjusted TAS means in socioeconomic variable categories show an increasing gradient of alexithymia toward lower social classes (Table 2).

The previous year's mean income in Finnish marks from the lowest to the highest TAS quartile was 90,172, 81,473, 73,115, and 67,279, respectively ( $F$  in ANOVA = 22.1,  $P < .0001$ ).

Table 1. Effect of Socioeconomic Factors on TAS Score

Variable	$\beta$ in Univariate Model	<i>P</i>	$\beta$ in Multivariate Model	<i>P</i>
Education	-.23	<.0001	-.13	<.0001
Occupational status	-.20	<.0001	-.08	<.01
Income	-.20	<.0001	-.07	<.01
Total social contacts	-.17	<.0001	-.13	<.0001
Marital status (married = 1)	-.13	<.0001	-.07	<.01
Rural residence	.05	<.05	—	NS
Poor childhood economic conditions	.05	<.05	—	NS
Age group (42, 48, 54, 60 years)	.06	<.01	—	NS
Father's education	-.12	<.0001	—	NS
Mother's education	-.12	<.0001	—	NS

NOTE.  $R^2$  in the model with all 10 independent variables = .091;  $R^2$  in the model with five significant variables left = .092.

The linear association between income and TAS score remained statistically significant after adjustment for age, occupational status, education, and unemployment ( $P < .05$ ). Childhood economic conditions did predict the variation of the TAS score when adjusted for age in the linear model ( $P < .01$ ).

The associations of the TAS with dichotomous variables were reexamined in logistic regression models controlling for factors that might confound the observed relationship. Table 3 shows the odds ratios with 95% confidence

Table 2. Age-Adjusted TAS Means With 95% Confidence Intervals in Classes of Socioeconomic Variables

Variable	TAS Mean	95% Confidence Interval
Education		
Less than elementary school	33.9	33.0-34.9
Elementary school	33.1	32.6-33.5
Middle school	30.4	29.9-30.9
High school or above	28.5	27.4-29.6
Occupation		
Blue collar	33.4	32.9-33.9
Farmer	32.4	31.4-33.4
White collar	30.2	29.7-30.7
Income in quintiles		
1 (lowest)	33.5	32.8-34.2
2	32.8	32.1-33.5
3	32.6	31.9-33.3
4	31.2	30.5-31.9
5 (highest)	29.5	28.8-30.2
Unemployed		
Yes	34.1	32.7-35.4
No	31.4	31.0-31.7

Table 3. Relative Probability of Being a Blue-Collar Worker, Being Unemployed, Having Completed Less Than Elementary School (&lt;6 years), Being Unmarried, and Belonging to the Lowest Quintile in Social Contacts, by TAS Quartiles

TAS Quartile	Odds Ratio	95% Confidence Interval	<i>P</i> for Trend
<b>Blue-collar worker†</b>			
I (low)*	1.00		
II	1.14	0.87-1.50	
III	1.42	1.08-1.86	
IV (high)	1.83	1.37-2.45	<.001
<b>Unemployed‡</b>			
I (low)*	1.00		
II	1.08	0.57-2.07	
III	2.01	1.13-3.60	
IV (high)	2.25	1.25-4.07	<.01
<b>Less than elementary education§</b>			
I (low)*	1.00		
II	1.11	0.72-1.72	
III	1.43	0.94-2.17	
IV (high)	2.10	1.40-3.14	<.0001
<b>Unmarried¶</b>			
I (low)*	1.00		
II	0.97	0.52-1.83	
III	2.26	1.32-3.85	
IV (high)	3.95	2.37-6.59	<.0001
<b>Few social connections  </b>			
I (low)*	1.00		
II	1.24	0.89-1.72	
III	1.37	0.99-1.88	
IV (high)	2.21	1.61-3.02	<.0001

\*Reference category.

†Adjusted for age and education.

‡Adjusted for age and occupational status.

§Adjusted for age.

||Adjusted for age and marital status.

limits estimated from these models for men in TAS quartiles 2 through 4 versus the lowest TAS quartile to belong to each of these groups.

## DISCUSSION

The present study was conducted to determine whether alexithymia, conceptualized as difficulty in symbolizing one's emotions verbally, was related to socioeconomic factors and social interaction.

The ambiguous results of the two previous studies that applied the TAS to estimate socio-demographic associations of alexithymia<sup>31,34</sup> are difficult to interpret partly because of the different selection of subjects. Small sample size might have thwarted the chance of drawing conclusions from the former study.

The TAS seemed to have proper psychometric properties in our population-based sample.

Our previous validation study showed that the Finnish version of this scale had satisfactory internal consistency (Cronbach's  $\alpha = .72$ ) and test-retest reliability ( $r$  between two surveys = .78). The factor structure was congruent with earlier results of a study on a Canadian sample<sup>26</sup> also matching the current theoretical concept of alexithymia.<sup>35</sup>

A clear relationship between several socioeconomic factors and the TAS score was observed even after adjustment for possible confounders. To interpret these results, a choice must first be made between two assumptions, i.e., whether alexithymia should be considered as a stable trait or a transient state. Different views have been presented,<sup>36,37</sup> but no empirical evidence from longitudinal studies is available. Our test-retest study gives some support to the stability of alexithymic characteristics in middle-aged men.

The correlation of the TAS score with education ( $r = -.21$ ) was in concordance with the observations of Parker et al.<sup>31</sup> and Kirmayer.<sup>38</sup> The more educated the men were, the less alexithymic they tended to be, and other socioeconomic variables did not explain this association. To use the common-sense definition given to alexithymia by Sifneos,<sup>9</sup> one might assume that years of learning in school provide the necessary "words for feelings." In this sense alexithymia would reflect a socialized cognitive style supporting somatizing modes of behavior, whereas cultural and social learning<sup>16</sup> or linguistic evolution of the whole culture<sup>39</sup> could "psychologize" this style. Theoretically, alexithymia as a personality trait could influence educational achievement in childhood and adolescence if it is coupled with a cognitive impairment or if a low level of alexithymia leads to better performance in school. In any case, we are left with an independent relationship and linear dose-response between education and alexithymia.

The TAS score was also related independently to both income and occupational status even when controlling for age and education. Average income and occupational prestige were lower in men with a high degree of alexithymia. Furthermore, there was a higher relative risk of being unemployed in the two highest TAS quartiles compared with the lowest quartile

when adjusting for age, education, and occupational status. This finding suggests that either alexithymic individuals are more likely to lose and not regain jobs or that alexithymia might be a coping reaction to unemployment or other unfavorable socioeconomic conditions. The latter explanation approximates what Freyberger<sup>36</sup> has called "secondary alexithymia." However, this way of regarding the TAS score as a reflection of a temporary state would not explain the independent relationship between the alexithymia measure and education, which these cohorts had acquired decades ago.

Childhood socioeconomic environment had a weak but statistically significant relationship with alexithymia, i.e., the poorer the conditions, the higher the TAS scores tended to be. Adjusting for age only did not affect this association, but by bringing education and/or present day socioeconomic factors into the model, the connection seemed to disappear. However, we believe that education and present socioeconomic status should not be viewed as confounders but rather as consequences, or mediating factors, of childhood economic conditions. Thus controlling is not appropriate for factors that are presumably causally linking effect and outcome.

The issue not earlier addressed empirically is the relationship between alexithymic features and social interaction. Men with a high TAS score had significantly fewer social contacts in our sample. Even more striking was the age-adjusted difference in marital status, i.e., the men in the highest alexithymia quartile were almost four times as likely to be unmarried as the men in the lowest quartile. There was also a marked difference in the amount of self-reported close acquaintances over TAS quartiles. Apparently, high levels of alexithymia are not conducive to the maintenance of close social relationships.

In the course of development of proper and valid alexithymia scales, there has been a marked effort to produce "purely psychological" measures that are free of social influences,<sup>31</sup> reflecting the emphasis on individuality over social and cultural determinants in Western biomedicine.<sup>40</sup> In this sense, the TAS did not appear to be a perfect scale in our population-based sample. On the other hand, if we think of

people as social beings, would it even make sense to imagine that ability to verbally communicate feelings could develop in isolation from social life and intercourse? Moreover, are alexithymic features, more characteristic of lower-class people, pathologized just because they do not coincide with the expressive style of highly educated, psychologically minded Western elites?

Socioeconomic variables explained approximately 10% of the overall variation of the TAS in a linear multivariate model. The true value of this parameter might well be higher, since random variation in measurement dilutes associations, but after all this finding does suggest that a majority of the determinants of alexithymia are beyond the scope of those measured in this study. It would be useful, for instance, to

determine the effect of intelligence, or cognitive capacity, on the TAS score.

In any case, our data give support to the idea that the social environment in childhood, especially education, has an independent effect on the way people express their emotions later in life. Social interaction also seems to relate to the ability to symbolize feelings verbally. In this perspective, alexithymia seems to be an accumulative process starting in childhood and developing and reinforcing itself in a social context. Still, there is room for those who argue in favor of a primary psychological construct of alexithymia, which from early on would be responsible for later social differentiation. But without clinical studies in child development and intensive time-consuming longitudinal follow-up studies, this latter argument remains difficult to substantiate.

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