



# Alexithymia, life satisfaction, depression and anxiety in black and ethnic minority communities in the UK

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## Abstract

Alexithymia is the inability to express and recognise emotions and can be expressed in non-clinical populations. Alexithymia is typically experienced alongside depression, anxiety, and burnout. However, research in this area has not explored the extent to which alexithymia is experienced in Black, Asian and Minority Ethnic group. Access to treatment for this community are limited. The aim of the current research is to explore high vs. low scores of alexithymia on anxiety, depression, life satisfaction among British black and ethnic minority communities. A total of 94 participants had filled in questionnaires. Results indicated high levels of alexithymia resulted in increased anxiety, thus a decreased in life satisfaction. However the hypothesis of high alexithymia resulted in high depressive symptoms were not found. Additionally, there were no gender difference in alexithymia level.

**Keywords** Alexithymia · Black and ethnic minority communities · Life satisfaction · Mental health

## Introduction

Mental health is a global issue that has a significant negative economic and social impact on people (UN, 2016). In the United Kingdom, the ONS (2011) reports that 15% of England's population self-identifies as belonging to one of the country's many ethnic minority groups. Although already disadvantaged mental health provisions, COVID-19 pandemic further emphasised health inequalities within the Black and Minority Ethnic groups (BME) (Khunti et al., 2020).

The effect of mental health on social networks and cultural identity has resulted in negative perceptions and stigma. This has been known to contribute to psychological distress and help seeking, particularly among BME males

(Memon et al., 2016). Psychology and psychotherapy are concerned with assisting individuals in detecting, analysing and conveying their emotions in ways that enhance rather than hinder interpersonal interactions (Kennedy-Moore & Watson, 1999). Consideration of alexithymia in counselling and psychotherapy in BME communities are fundamental for inclusive treatment.

Alexithymia is currently conceptualised as a personality characteristic impairment in the cognitive processing of emotional experience that impairs people's capacity to signify and reflect on emotional experiences (Taylor et al., 2016). Its hallmark characteristics include difficulty identifying feelings and bodily sensations associated with emotional arousal (DIF), difficulty describing feelings (DDF), externally oriented thinking (EOT), and constricted imaginal processes (IMP), as evidenced by a severe lack of fantasy (Nemiah et al., 1976; Taylor et al., 1997; Taylor & Bagby, 2000). Ogrodniczuk et al. (2018) and Bagby and Taylor (2018) suggest certain individuals have difficulty recognising and expressing emotion in social interactions, making alexithymia more probable in BME individuals.

Multiple Code Theory (Bucci, 1997) provide additional insights to the explanation of the characteristics of Alexithymia in emotional processing as previously discussed by Bagby et al., (2006). The theory posits the existence of three distinct systems for processing and representing emotional

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information: the nonverbal sub-symbolic mode, the kineshetics sensation mode, and the motor activity mode, all of which are experienced during the state of emotional arousal. According to the theory, the interconnection between these three processing systems is facilitated through the utilisation of referential processing (RP), which also involves the reciprocal conversion of nonverbal elements into visual representations, which are subsequently elucidated through language. This enables the translation of verbal constructs into nonverbal form (Bucci, 1997, 2001; Murphy et al., 2015). Understanding Referential Processing is in reference psychotherapy is an important knowledge as it is influenced by the therapeutic and interpersonal relationships that occur during the expression of emotional arousal, narration or symbolization, and reflection or reorganisation.

Alexithymia has been linked to depression (Hendryx et al., 1991). There is overwhelming scientific evidence that alexithymia is a continuous stable personality trait not a result of psychological distress (Haviland et al., 1994; Horton et al., 1992). Martínez-Sánchez et al. (2003) found that emotional stress had no impact on the degree of alexithymia. Porcelli et al. (1996) showed decreased anxiety and depression were related to illness, but no significant change in mean alexithymia scores following diagnosis of a disease. Saarijärvi et al. (2001) study revealed the same results. Contrastingly, Honkalampi et al. (2001) found a relationship between alexithymia and depression. Honkalampi et al. (2000) challenged earlier work, claiming that alexithymia is not a consistent personality feature among depressive individuals. Nonetheless, there are discrepancies in the literature and none of these papers investigate alexithymia experiences in different social groups, for example BME.

Anxiety and depression are commonly comorbid (Kessler et al., 2015). It can manifest as anxiety, generalised anxiety disorder, phobia, OCD, PTSD, and panic disorder (Chapman et al., 2014). In mental health disorders (e.g., panic attacks), high rates of alexithymia have been observed (Parker et al., 1997; Luminet et al., 2001; Kojima, 2012). The high rate of alexithymia in individuals with panic disorder supports Taylor's (1997) theory that panic disorder is linked to cognitive processing and emotion regulation problems. In 1997, Fukunishi et al. (1997) showed an even greater prevalence of alexithymia in patients with panic disorder (54%) than the healthy control group. It was found that comparable to Izei et al. (2014) findings, 38.1% of young adults with physical phobia had higher TAS-20 scores. Elevated alexithymia has also been connected to a variety of anxiety conditions. Regarding the DDF aspect of the alexithymia construct, Dalbudak et al. (2013) observed that fear, anxiety, and avoidance were all connected. Anxiety-types exhibited increased TAS-20 scores, but not after controlling for depression severity. The current study investigates whether there is an association between alexithymia and depression.

The relationship between life satisfaction and alexithymia is well documented. According to Honkalampi et al. (2000), depressive individuals' high levels of alexithymia lead to poor life satisfaction. A similar study by Honkalampi et al. (2004) revealed a relation between alexithymia and life satisfaction only when depression was considered a confounding factor. Similarly, Le et al. (2002), Fukunishi et al. (1999), and Palmer et al. (2002) all reported on negative correlation between life satisfaction and alexithymia. However, Saariaho et al. (2013) present findings with primary outpatients who reported similar results except for depression or other socioeconomic factors. Shibata et al. (2014) found that higher alexithymia levels significantly impair life satisfaction, suggesting that alexithymia may be a risk factor for low life satisfaction resulting in low mental health reports.

There are clear differences in ethnicity and culture in the literature. Dion (1996) examining the impact of cultural differences on alexithymia indicated that individuals from Eastern cultures, such as those with Chinese ethnicity, exhibited higher levels of alexithymia compared to individuals from Western cultures. Le, Berenbaum, and Raghaven (2002) found that Asians had higher scores of alexithymia than European Americans. The above study found that parental socialisation affected alexithymia, suggesting that family emotion norms affect alexithymia. In a study conducted by Fukunishi et al. (1992), it was observed that there was no statistically significant difference in alexithymia levels between American and Japanese dialysis patients. However, it was noted that culture played a moderating role in the relationship between treatment type and alexithymia levels. These studies suggest that there are cultural differences; therefore, further investigation is warranted regarding the relationship between culture and alexithymia (Lo, 2014). According to Honkalampi et al. (2000) and Bojner Horwitz et al. (2015), the prevalence of alexithymia in men ranges from 16.6 to 9.6% and in females from 4.4 to 9.6%. Researchers such as Heesacker et al. (1999) and Wester et al. (2002) have criticised the normative male alexithymia hypothesis (Levant, 1998), warning against investigating gender difference in alexithymia when none exists. Wester et al. (2002) and Heesacker et al. (1999) observed the discrepancy of gender-based findings in their systematic reviews of just three research. Subsequently, Levant et al. (2007) observed a gender difference in alexithymia, with two men having more than one female. The remaining 10 samples showed no gender differences in alexithymia levels. Levant et al. (2009) conducted another study using 32 non-clinical samples affected the trial's design outcome. Out of 32 samples, 17 men were more alexithymic than one female, while the other fourteen samples had no difference in alexithymia levels. Levant et al. (2006) meta-analysis revealed a mean difference in alexithymia between male and female, perhaps corroborating Levant et al. (2009) assertion. In this

study, gender differences were investigated due to the sample population investigated.

## The current research

Inequities in mental health are not surprising among BME persons. Black, Asian, and ethnic minority populations are disproportionately affected by socioeconomic variables affecting mental health such as treatment access (Bignall et al., 2019; Weich et al., 2004). One in every six BME adults suffers with anxiety or depression. Black or black British people are more likely (23%) than Asian or Asian British people (18%) to suffer from anxiety or depression (Baker, 2021). The findings are highlighting the need for more research in ethnic minority groups. The United Kingdom is catching up with other countries in terms of culturally sensitive research on alexithymia and mental health disorders (Palmer et al., 2002). Currently in the UK, no studies have been conducted exploring the differences of alexithymia personality trait on anxiety, depression, and life satisfaction in BME groups. This is needed in the context of understanding cultural differences in psychotherapy and psychotherapeutic relationships.

Current literature on alexithymia appears to be outdated or unrelated to the ethnic minority population. The association between alexithymia, depression, anxiety, and life satisfaction has been questioned (Mattila et al., 2007; Hosseinzadeh et al., 2014; Shibata et al., 2014). This is the first study to investigate BAME Communities experiences with alexithymia and assess the impact of alexithymia on anxiety, depression and life satisfaction, among British black and ethnic minority (BME) communities. It is hypothesised that those with a high level of alexithymia will have higher anxiety scores (H1); those with a high level of alexithymia will have higher depression scores (H2); those with a high level of alexithymia will have lower life satisfaction scores (H3); and male participants will score higher on alexithymia than female participants (H4).

## Methods

### Design

The study employed a quantitative self-reported questionnaire to compare participants. Alexithymia was the criterion variable (IV) and Depression, anxiety, and life satisfaction were included as the predictor variables. The data was computed using the statistical package for social sciences (SPSS) software to undertake a Multiple Regression to investigate associations between the criterion and predictor variables.

To investigate gender differences in alexithymia scores, a one-way analysis of variance was conducted.

### Participants

The research received a total of 94 replies, with 82 (87.2%) of them meeting the inclusion criteria and completing the questionnaire. In order to establish the inclusion criteria, participants were queried about their self-identification with an ethnic minority background. Individuals who did not self-identify as having a Black or Asian background were excluded from completing the questionnaires. Participants residing outside the United Kingdom, and those with formal diagnosis of anxiety, depression and or social disability were also excluded. Twelve respondents were excluded due failure to complete the questionnaires. A total of 59.8% Females and 40.2% males participated in the study. Most respondents (32.9%) were between the ages of 36 and 45, followed by those between the ages of 46 and 60 (23%) and those between the ages of 26 and 35 (20.7%). The participants' ethnicity ranged widely, with the majority being African (34.2%), followed by any other ethnic group (21.9%). There were as many black, African, Caribbean, or Black British people (11%) as Pakistanis (11%). Other ethnicities represented were Bangladeshi (5.5%), mixed (4.1%), Caribbean, white and black, and Arab (all 2%). Other Asian or Asian British heritage, including Chinese, was 1%. In terms of educational attainment, bachelor's and postgraduate degree holders accounted for a combined 52.5% of the participants. The remaining were A Level (23.3%), GCSE (7.3%) and other (17.1%).

Snowball sampling and stratified sampling procedures were used to recruit the participants. Snowball sampling through email inside the Universities North London campus. The same recruitment strategy was utilised to recruit participants using social media sites like Facebook and LinkedIn focusing on British groups. The remaining participants were recruited using a stratified sample strategy via the survey circle platform. The University SONA research system included first-year psychology undergraduates as part of a research participation plan at a London University. Participants had to be at least 18 years old and enrolled at the university during their participation for this method of recruitment. No monetary remuneration was provided to participants for their involvement in the study.

### Materials

The questionnaires were hosted on Google Forms platform. A briefing and consent form, 39-item self-reporting questionnaire and a de-briefing form, were prepared using a laptop. Questionnaires used in this study are described below.

The Google Form link was shared on social media platforms, e.g., Facebook, LinkedIn, SONA and Survey Circle. All the accounts on social media were password-protected, with the researcher having access and data saved on a password-protected laptop that was only accessible to the researcher.

## Questionnaires

### Toronto Alexithymia Scale-20 (TAS-20)

The Toronto Alexithymia Scale – 20 (Bagby et al., 1994) is a validated, self-report questionnaire comprised twenty items. The questionnaire has an internal consistency (Cronbach's  $\alpha = 0.81$ ) and test – retest reliability (0.77,  $p = .01$ ), indicating stability in clinical and non-clinical populations. This assessment was used to assess the three subscales of alexithymia; (a) difficulty identifying feelings – DIF (7 items, for example, “I am frequently unsure of the emotion I am experiencing”); (b) difficulty describing feelings - DDF (5 items, for example, “I find it difficult to reveal my innermost feelings, even to close friends”), (c) and externally oriented thinking -EOT (8 items-e.g., “I prefer to analyse problems rather than just describe them”). Each question was rated on a 5-point Likert-type scale, with 1 indicating strong disagreement and 5 indicating strong agreement. The cut-off point for Alexithymia TAS-20 was established experimentally in response to clinical evidence that a score of 51 or less indicates non-alexithymia. In comparison, a score of 51 or greater indicates alexithymia. Thus, scores between 52 and 60 may indicate alexithymia (Taylor et al., 1997a, b).

### Hospital Anxiety and Depression Scale (HADS)

Zigmond and Snaith (1983) created the Hospital Anxiety and Depression Scale (HADS), a 14-item commonly used self-assessment measure for evaluating anxiety and depression in the general nonpsychiatric population. The instrument is split into an anxiety subscale (HDAS-A) and a depression subscale (HADS-D). Each has seven mixed-response questions assessed on a four-point severity scale; 0–7 indicates no case, 8–10 indicates mild, 11–14 indicates moderate, and 15–21 indicates severe (Stern, 2014). HADS Anxiety internal consistency and sensitivity (Cronbach's  $\alpha = 0.70$ ) and HADS Depression (Cronbach's  $\alpha = 0.72$ ). Anxiety is indicated by statements such as “I feel tense and wound up” and “I can sit at ease and feel relaxed.” Participants assessed their anxiety response by selecting one of four provided responses to each sentence on a four-point severity scale ranging from 3 = Most of the time to 0 = Not at all. Depression statements such as “I feel cheerful” and “I still enjoy the things I used to enjoy” was also graded on a four-point severity scale ranging from 3 to 0, with 3 indicating never and 0 indicating most of the time. Zigmond and

Snaith (1983) suggest cut-off scores of 8 for doubtful cases and > 11 for definite cases.

### Satisfaction With Life scale – 5 (SWL-5)

Diener et al. (1985) Satisfaction With Life Scale is a five-item questionnaire intended to examine global cognitive judgments about one's degree of life satisfaction (not a measure of positive or negative affect). Participants responded to each of the five statements such as “I am satisfied with my life” on a seven-point scale ranging from 7 = strongly agreed to 1 = strongly disagreed. The SWL-5 has a high internal reliability and sensitivity level, with a Cronbach  $\alpha = 0.90$ . The SWLS is culturally sensitive and is recommended as a supplement to psychopathology or emotional well-being measures because it assesses an individual's conscious evaluative evaluation of their life using their criteria (Pavot & Diener, 1993), making it an appropriate tool for this study. Then, participants filled in the SWL-5 on a 5-item scale, rating each item from 7 (strongly agree) to 1 (strongly disagree). Items included “In most ways, my life is close to my ideal,” “I am satisfied with my life”. The scores were derived using a threshold of 31–35, which indicates extreme happiness with life. A score of 20 was considered neutral, but values of 9–5 indicated acute dissatisfaction.

## Procedure

This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of London Metropolitan University. Informed consent was obtained from all individual participants in the study. Consent to publish was also obtained from participants.

Following access to the questionnaire via the Google Form link shared on social media platforms and the university's SONA system, participants received an overview of the study, including the researcher's and supervisor's contact information, which they could use to obtain additional information about the study. Participants were also informed of the study's inclusion and exclusion criteria. The study looked for participants who had not received a formal diagnosis of anxiety, depression, or social impairment. Those advised of such a diagnosis were excluded and dropped out of the research. Participants with undiagnosed symptoms affirmed their consent to participate and submitted a four-digit personal identification code if they desired to remove their information from the study later.

The first section of the questionnaire required individuals to self-identify their gender, age, educational background, and ethnicity. As the study is limited to Black, Asian, and ethnic communities in the British population, ethnicity data was utilised to filter out individuals who did not fit

the study's inclusion requirements and were prompted to discontinue the survey. Participants proceeded to respond to TAS-20, HADS and SWL-5 questionnaires.

The survey concluded with participants receiving a debriefing sheet outlining the study hypothesis and objectives of the research they had participated in. Additionally, participants were reminded of the researcher's and supervisor's contact information if they had any questions. The deadline for participants to withdraw their data from the study was also communicated in the de-briefing sheets. The study concluded by expressing gratitude to participants for their participation.

## Results

### Reliability of questionnaires

The reliability of the questionnaires can be seen in Table 1.

Measure	Cronbach Alpha
TAS – 20	0.84
SWLS – 5	0.85
HADS – anxiety	0.70
HADS - Depression	0.75

### Descriptive statistics

The descriptive variables are presented in Table 2. The total TAS-20 scores ranged from 23 to 84. Based on the cutoff scores of diagnosing alexithymia, a total of eight participants (10%) were likely to meet the diagnosis for alexithymia (61 and above). A total of seven participants (9%) were borderline alexithymics (between 51 and 60).

**Table 1** Sociodemographic characteristics of participants

Ethnic Group	<i>n</i>	%
Indian	1	1.2%
Pakistani	8	9.8%
Bangladeshi	4	4.9%
Chinese	1	1.2%
Any Other Asian Background	1	1.2%
African	31	37.8%
Caribbean	2	2.4%
Any Other Black, African or Caribbean Background	10	12.2%
White and Black Caribbean	1	1.2%
Any Other Mixed or Multiple Ethnic Background	3	3.7%
Arab	2	2.4%
Any Other Ethnic Group	18	22.0%

**Table 2** Descriptive statistics of questionnaires

Measure	Mean (SD)
TAS – 20	48.84 (12.71)
SWLS – 5	23.83 (6.33)
HADS – anxiety	7.48 (3.90)
HADS - Depression	15.23 (2.50)

Pearson correlations between the independent variables (SWLS, HADS – anxiety and HADS – Depression) and the criterion variable (TAS – 20) are presented in Table 3. These correlations suggest that SWLS (Life Satisfaction) and HADS – Anxiety are associated with TAS-20. Due to the small sample size, Table 3 should be considered.

### Multiple regression

#### Assumption testing

The assumptions for running the multiple regression were met. There was a linear relationship between the criterion variable (TAS – 20) and the association variables (SWLS-5, HADS Anxiety, HADS – depression). There were homoscedasticity, no multicollinearity (Tolerance/VIF values in range), no significant outliers and the residuals were normally distributed by observing a histogram.

#### Report

The analysis of variance produced a significant *p* value ( $p < 0.001$ ). As a result of a non-significant analysis of variance, we can interpret the model. A multiple regression analysis was conducted to analyse hypotheses 1, 2 and 3. Essentially, to explore whether anxiety (HADS – anxiety), depression (HADS – depression) and life satisfaction (SWLS – 5) is associated with alexithymia (TAS – 20). The association between the criterion and the predictor variable is moderately strong (multiple  $R = .632$ ). Together, depression, anxiety and life satisfaction accounted for 38% of the variation in alexithymia (Adjusted  $R^2 = 0.4$ ). Life satisfaction was negative related to alexithymia. The regression coefficient for life satisfaction was  $-0.613$  (95% CI =  $-1.105 - -0.121$ ). The population regression coefficients for life satisfaction

**Table 3** Bivariate correlations among all variables

Measure	1	2	3	4
1. TAS – 20	-	-0.570	0.578	-0.356
2. SWLS – 5	-0.570	-	-0.689	0.396
3. HADS – anxiety	0.578	-0.689	-	-0.409
4. HADS - Depression	-0.356	0.396	-0.409	-

are statistically significant ( $t = -2.482, p = .015$ ). The higher alexithymia score the lower life satisfaction reported. Anxiety was positively related to alexithymia. The regression coefficient for anxiety was 1.063 (95% CI = 0.260–1.866). The population regression coefficient for anxiety are statistically significant ( $t = 2.635, p = .01$ ). The higher the score of anxiety, the higher the score of alexithymia.

### Gender differences

An analysis of variance was conducted to investigate the differences in alexithymia scores between males ( $M = 51.88, SD = 13.02$ ) and females ( $M = 46.80, SD = 12.21$ ). The results showed no statistical difference ( $F = 3.240, p = .076$ ).

## Discussion

The current study investigated the association between alexithymia levels with anxiety, depression, and life satisfaction in a sample of ethnic minorities. The null hypothesis for hypotheses 1 and 2 were rejected thus accepting the hypotheses. Higher alexithymia scores are associated in high levels of anxiety and low scores of life satisfaction. The null hypothesis for hypotheses 3 and 4 were accepted. There were no associations of depression with alexithymia and there were no gender differences in the BME sample represented in this study. The discussion will seek to compare findings with previous research.

Those that had high scores of alexithymia reported low scores of life satisfaction. Similar results were found by Mattila et al. (2007) who found that when alexithymia increased, participants were less content with their life. Le et al. (2002) showed life satisfaction was linked to alexithymia in a group of European and Asian Americans. Despite most of the study population being in the low alexithymia group, 23.2% population indicated being severely or slightly dissatisfied with life. The current study suggests previous research linking high levels of alexithymia to mental disorders including anxiety and depression (Hosseinzadeh et al., 2014) specific to ethnic minorities. Diener et al. (1999) claim that personality is a powerful and reliable predictor of subjective well-being. For morale, life satisfaction and hope, Costa and McCrae (1980) suggest a balance of positive and negative effects is essential. A reason for the association between alexithymia and anxiety could be attributed to participants interpretation of the questionnaire based on cultural norms and life satisfaction evaluations.

An association between alexithymia and anxiety was found. The findings of this study support earlier studies (Taylor et al., 1997a, b; Fava et al., 2001) linking high increase alexithymia levels to a range of anxiety disorders. Alexithymia is linked to poor cognitive processing and

emotion control in anxiety disorders, as Taylor et al., (1997a, b) argued. According to De Berardis et al. (2007), different dimensions of alexithymia may contribute to the development of anxiety disorders, such as panic disorders, PTSD, social phobia, and generalised anxiety disorder. Ahrens and Deffner (1986), alexithymia is a state-dependent phenomenon connected with psychological discomfort that reduces after an anxiety episode and returns to a personality trait without intervention could be substantiated with its findings. With all kinds of anxiety (Leweke et al., 2012), there was an increase in alexithymia, but with depression as a confounding factor, there appeared to be no difference. The result is based on mean differences in alexithymia anxiety, rather than cross-sectional studies that identified significant negative links between alexithymia and anxiety, depression, and life satisfaction. Females were more anxious and had more alexithymia than men, showing that they were better at detecting and distinguishing sensations, as well as cognitive processing and emotional control. It is not clear whether anxiety causes people to have emotion recognition and expression issues or whether alexithymia causes anxiety when measured in the general public. Research suggests that anxiety may result from difficulty expressing emotions that are primarily caused by anxiety disorders (Ogłodek et al., 2016). Contrastingly, there are also studies that suggest that alexithymia causes anxiety due to the inability to recognise emotions of others in social settings (Nekouei et al., 2014). It is possible that the feeling of constant emotional activation could lead to alexithymics inability to feel emotions resulting in their failure to recognise different experiences as it is state-dependent (De Barardis et al., 2007).

Results showed no association between depression scores and alexithymia. The findings support Saarijärvi et al., (2001) study which observed no significant change in alexithymia mean scores, but a decrease in depression linked with disorders. According to the present study's findings, those with a formal diagnosis of depression had greater alexithymia scores than healthy patients (Honkalampi et al., 2001; Zhang et al., 2017). The result showed that 98.8% of the study group had depressive symptoms, despite highlighting no formal depressive symptoms diagnosis to participate. The non-significant association may be explained by differences in study demographics (e.g., age, gender, education level, or participants understanding of questionnaires). The existence of comorbid mental diseases and alexithymia have been linked with depressive disorders (Kim et al., 2008). It appears that a formal diagnosis is not required to represent the alexithymia personality trait as the study showed (Honkalampi et al., 2001; Leweke, 2012; Marchesi et al., 2005), which contradicts earlier findings. The lack of association identified might also be due to undiagnosed symptoms which would explain the difficulty expressing and identifying feelings subscale (DDF). The current study was different

in terms of methodology compared to majority of previous studies conducted cross-sectional investigations (Li et al., 2015; Leweke et al., 2012; Honkalampi et al., 2001, 1999) and mediation studies (Haviland & Shaw, 1991). This study investigated ethnic minority groups. Determining whether there was a gender difference in mean depression scores, with males scoring higher in the high alexithymia group than females (Honkalampi et al., 2000; Levant et al., 2009), was also challenged by the current findings, which agreed with Giuseppe et al. (2014) that there was no gender difference in mean depression scores.

There are a number of limitations to consider when interpreting the results which, as a result, should be interpreted with caution. The first is that the sample size was low, which could explain discrepancies in results of alexithymia, depression, and gender (Fraley & Vazire, 2014). Future research should use a larger sample size to provide reliable results and validate the approach despite some of the study findings were consistent with previous research. Secondly, the data were collected during and after the COVID-19 pandemic measures. As stated by Huremovic (2019) and Brooks et al. (2020), quarantine has been shown to exacerbate mental health conditions such as anxiety, depression and hopelessness. Although it was unclear if quarantine had impacted the results, it was evident that some of the sample group suffered from anxiety and despair, indicating a lack of life satisfaction.

Thirdly, an open-ended question was also utilised to collect demographic data on the ethnic minority. Human errors may have happened during data processing prior to statistical analysis. Future research could conduct mediation studies investigate whether alexithymia is mediating factors for anxiety, depression, and life satisfaction. It would also be beneficial to investigate self-esteem. Fourthly, the TAS-20, HADS, and SWL-5 are psychometric measures designed for the general white population. For ethnic minorities, language and cultural differences may result in non-response and misinterpretation of the questionnaire. Future research should compare culturally customised measures. Considering people only self-reported once, follow-up research was not possible. Due to this study's self-selection bias, a large amount of incomplete data was eliminated. Another possible limitation is that this research is based on self-reported assessment of an ethnic minority and the tests that are used are assumed to be culture-free but we know that emotional systems are based on specific cultural dimensions. Future research could also assess the use of these questionnaires on different cultures to assess their construct validity.

Finally, there are unique obstacles have been associated with online research (Andrews et al., 2003; Howard et al., 2001). Participant repetition or non-response might have led to incomplete data and a reduced sample size. Also, the community group already study demonstrates a lack

of mental health participation (Memon, 2016), so perhaps there was reluctance to be honest in the study. Despite the study's informed sample, the internet usage for research may not have been fully responsive. The turnout was lower than planned due to unanswered or disregarded invitations. Future research might target specific categories of people using both paper surveys and online self-reporting.

## Conclusion

The present study is the first to evaluate the impact of alexithymia levels on anxiety, depressive, and life satisfaction symptoms among ethnic minority populations in the UK. The results suggest that high anxiety and low life satisfaction is associated with high alexithymia scores. The study also showed that there were no gender differences in BME community and their experiences of alexithymia. The study used valid and reliable measurements, which resulted in noteworthy findings and recommendations for future research. Furthermore, the new information on alexithymia personality trait is significant important for psychotherapy from a cultural perspective. Future study should examine the intricacies of Alexithymia state dependences and its usefulness in supporting people from diverse backgrounds better understand this personality trait to enhance their mental health and life satisfaction in psychotherapy and psychotherapeutic contexts.

There is currently a plethora of literature highlighting the fact that alexithymic people present a challenge in the therapeutic process for the very skills that form the foundation of psychotherapy: the ability to differentiate, verbalise, and discuss subjective experiences and feelings (Kleinberg, 1996; Taylor, 1984). It appears appropriate to state that clients with high levels of alexithymia frequently know they are not feeling well but are unable to verbalise or describe their feelings. While previous research has focused on the relationship between alexithymia, anxiety, and depression, this study focused on alexithymia as a personality trait and discovered a difference in alexithymia levels in those who may present with anxiety and depression, as well as the effect on life satisfaction and well-being. The findings encourage further discussion on the topic of common mental illness treatment in BME communities, and the fact that alexithymia is linked to a variety of other conditions and personality traits suggests that flexibility is essential with alexithymic individuals, as interventions will need to be modified to meet the client's emotional tolerance and cognitive abilities.

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**Data availability** The datasets generated during and/or analysed during the current study are not publicly available due to not given ethical approval by committee but are available from the corresponding author on reasonable request.

## Declarations

**Conflict of interest** The authors acknowledge that there is not conflict of interest.

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## References

- Ahrens, S., & Deffner, G. (1986). Empirical study of alexithymia: Methodology and Results. *American Journal of Psychotherapy*, *40*(3), 430–447. <https://doi.org/10.1176/appi.psychotherapy.1986.40.3.430>
- Andrews, D., Nonnecke, B., & Preece, J. (2003). Electronic survey methodology: A case study in reaching hard-to-involve internet users. *International Journal of Human-Computer Interaction*, *16*(2), 185–210. [https://doi.org/10.1207/s15327590ijhc1602\\_04](https://doi.org/10.1207/s15327590ijhc1602_04)
- Bagby, R. M., & Taylor, G. J. (2018). In O. Luminet, R. M. Bagby, & G. J. Taylor (Eds.), *Alexithymia*. Cambridge University Press. <https://doi.org/10.1017/9781108241595>
- Bagby, R. M., Parker, J. D. A., & Taylor, G. J. (1994). The twenty-item Toronto Alexithymia scale—I. Item selection and cross-validation of the factor structure. *Journal of Psychosomatic Research*, *38*(1), 23–32. [https://doi.org/10.1016/0022-3999\(94\)90005-1](https://doi.org/10.1016/0022-3999(94)90005-1)
- Bagby, R. M., Taylor, G. J., Parker, J. D. A., & Dickens, S. E. (2006). The development of the Toronto structured interview for alexithymia: Item selection, factor structure, reliability and concurrent validity. *Psychotherapy and Psychosomatics*, *75*(1), 25–39. <https://doi.org/10.1159/000089224>
- Baker, C. (2021, December 13). Mental health statistics for England: Prevalence, services and funding. Parliament.uk. <https://researchbriefings.files.parliament.uk/documents/SN06988/SN06988.pdf>. Accessed 10 Mar 2022.
- Bignall, T., Jeraj, S., Helsby, E., & Butt, J. (2019). Racial disparities in mental health: Literature and evidence review. <https://raceequalityfoundation.org.uk/wp-content/uploads/2020/03/mental-health-report-v5-2.pdf>. Accessed 15 Apr 2022.
- Bojner Horwitz, E., Lennartsson, A. K., Theorell, T. P. G., & Ullén, F. (2015). Engagement in dance is associated with emotional competence in interplay with others. *Frontiers in Psychology*, *6*. <https://doi.org/10.3389/fpsyg.2015.01096>
- Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *SSRN Electronic Journal*, *395*(10227), 912–920. <https://doi.org/10.2139/ssrn.3532534>
- Bucci, W. (1997). Symptoms and symbols: A multiple code theory of Somatization. *Psychoanalytic Inquiry*, *17*(2), 151–172. <https://doi.org/10.1080/07351699709534117>
- Bucci, W. (2001). Pathways of Emotional Communication. *Psychoanalytic Inquiry*, *21*(1), 40–70. <https://doi.org/10.1080/07351692109348923>
- Chapman, Z., Shuttleworth, C. M. J., & Huber, J. W. (2014). High levels of anxiety and depression in diabetic patients with Charcot foot. *Journal of Foot and Ankle Research*, *7*(1). <https://doi.org/10.1186/1757-1146-7-22>
- Costa, P. T., & McCrae, R. R. (1980). Influence of extraversion and neuroticism on subjective well-being: Happy and unhappy people. *Journal of Personality and Social Psychology*, *38*(4), 668–678. <https://doi.org/10.1037/0022-3514.38.4.668>
- Dalbudak, E., Evren, C., Aldemir, S., Coskun, K. S., Yıldıırım, F. G., & Ugurlu, H. (2013). Alexithymia and personality in relation to social anxiety among university students. *Psychiatry Research*, *209*(2), 167–172. <https://doi.org/10.1016/j.psychres.2012.11.027>
- De Berardis, D., Campanella, D., Gambi, F., La Rovere, R., Sepede, G., Core, L., Canfora, G., Santilli, E., Valchera, A., Mancini, E., Salerno, R. M., Moschetta, F. S., & Ferro, F. M. (2007). Alexithymia, fear of bodily sensations, and somatosensory amplification in young outpatients with panic disorder. *Psychosomatics*, *48*(3), 239–246. <https://doi.org/10.1176/appi.psy.48.3.239>
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, *49*(1), 71–75. [https://doi.org/10.1207/s15327752jpa4901\\_13](https://doi.org/10.1207/s15327752jpa4901_13)
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, *125*(2), 276–302. <https://doi.org/10.1037/0033-2909.125.2.276>
- Dion, K. L. (1996). Ethnolinguistic correlates of alexithymia: Toward a cultural perspective. *Journal of Psychosomatic Research*, *41*(6), 531–539. [https://doi.org/10.1016/s0022-3999\(96\)00295-4](https://doi.org/10.1016/s0022-3999(96)00295-4)
- Fava, G. A., Mangelli, L., & Ruini, C. (2001). Assessment of psychological distress in the setting of medical disease. *Psychotherapy and Psychosomatics*, *70*(4), 171–175. <https://doi.org/10.1159/000056249>
- Fraley, R. C., & Vazire, S. (2014). The N-Pact factor: Evaluating the quality of empirical journals with respect to sample size and statistical power. *PLoS ONE*, *9*(10), e109019. <https://doi.org/10.1371/journal.pone.0109019>
- Fukunishi, I., Norris, P., Fahrion, S., Baer, C., & Porter, R. (1992). A comparison of alexithymia in American and Japanese dialysis patients. *Psychotherapy and Psychosomatics*, *57*(1–2), 75–80. <https://doi.org/10.1159/000288577>
- Fukunishi, I., Kikuchi, M., Wogan, J., & Takubo, M. (1997). Secondary alexithymia as a state reaction in panic disorder and social phobia. *Comprehensive Psychiatry*, *38*(3), 166–170. [https://doi.org/10.1016/s0010-440x\(97\)90070-5](https://doi.org/10.1016/s0010-440x(97)90070-5)
- Fukunishi, I., Wogan, J., Berger, D., & Kuboki, T. (1999). Alexithymic traits as predictors of difficulties with adjustment in an outpatient cohort of expatriates in Tokyo. *Psychological Reports*, *85*(1), 67–77. <https://doi.org/10.2466/pr0.1999.85.1.67>
- Giuseppe, S., Bruno, A., Cava, L., Pandolfo, G., Muscatello, M. R. A., & Zoccali, R. (2014). The relationship between alexithymia, anxiety, depression, and internet addiction severity in a sample of Italian high school students. *The Scientific World Journal*, *2014*, 1–8. <https://doi.org/10.1155/2014/504376>
- Haviland, M. G., Hendryx, M. S., Shaw, D. G., & Henry, J. P. (1994). Alexithymia in women and men hospitalized for psychoactive substance dependence. *Comprehensive Psychiatry*, *35*(2), 124–128. [https://doi.org/10.1016/0010-440x\(94\)90056-n](https://doi.org/10.1016/0010-440x(94)90056-n)
- Heesacker, M., Wester, S. R., Vogel, D. L., Wentzel, J. T., Mejia-Millan, C. M., & Goodholm, C. R., Jr. (1999). Gender-based



- emotional stereotyping. *Journal of Counseling Psychology*, 46(4), 483–495. <https://doi.org/10.1037/0022-0167.46.4.483>
- Hendryx, M. S., Haviland, M. G., & Shaw, D. G. (1991). Dimensions of alexithymia and their relationships to anxiety and depression. *Journal of Personality Assessment*, 56(2), 227–237. [https://doi.org/10.1207/s15327752jpa5602\\_4](https://doi.org/10.1207/s15327752jpa5602_4)
- Honkalampi, K., Saarinen, P., Hintikka, J., Virtanen, V., & Viinamäki, H. (1999). Factors associated with alexithymia in patients suffering from depression. *Psychotherapy and Psychosomatics*, 68(5), 270–275. <https://doi.org/10.1159/000012343>
- Honkalampi, K., Hintikka, J., Tanskanen, A., Lehtonen, J., & Viinamäki, H. (2000). Depression is strongly associated with alexithymia in the general population. *Journal of Psychosomatic Research*, 48(1), 99–104. [https://doi.org/10.1016/s0022-3999\(99\)00083-5](https://doi.org/10.1016/s0022-3999(99)00083-5)
- Honkalampi, K., Hintikka, J., Laukkanen, E., & Viinamäki, J. L. H. (2001). Alexithymia and depression: A prospective study of patients with major depressive disorder. *Psychosomatics*, 42(3), 229–234. <https://doi.org/10.1176/appi.psy.42.3.229>
- Honkalampi, K., Koivumaa-Honkanen, H., Hintikka, J., Antikainen, R., Haatainen, K., Tanskanen, A., & Viinamäki, H. (2004). Do stressful life-events or sociodemographic variables associate with depression and alexithymia among a general population?—a 3-year follow-up study. *Comprehensive Psychiatry*, 45(4), 254–260. <https://doi.org/10.1016/j.comppsy.2004.03.014>
- Horton, P. C., Gewirtz, H., & Kreutter, K. J. (1992). Alexithymia – state and trait. *Psychotherapy and Psychosomatics*, 58(2), 91–96. <https://doi.org/10.1159/000288615>
- Hosseinzadeh, A., Tavakoli, H., Aghaee, F., & Azizi, M. (2014). Relationship between alexithymia and life satisfaction: The mediating role of emotional intelligence. *Journal of Applied Environmental and Biological Sciences*, 4(5), 115–119.
- Howard, P. E. N., Rainie, L., & Jones, S. (2001). Days and nights on the internet: The impact of a diffusing technology. *American Behavioral Scientist*, 45(3), 383–404. <https://doi.org/10.1177/00027640121957259>
- Huremović, D. (2020). *Psychiatry of pandemics: A mental health response to Infection outbreak*. Springer International Publishing 2019; 185 pages; ISBN978-3-030-15346-5 (e-book), ISBN978-3-030-15345-8 (softcover). *Croatian Medical Journal*, 61(3), 306–306. <https://doi.org/10.3325/cmj.2020.61.306>
- Izci, F., Gultekin, B. K., Saglam, S., Iris Koc, M. S., Zincir, B. S., & Atmaca, M. (2014). Temperament, character traits, and alexithymia in patients with panic disorder. *Neuropsychiatric Disease and Treatment*, 879. <https://doi.org/10.2147/ndt.s62647>
- Kennedy-Moore, E., & Watson, J. C. (1999). *Expressing emotion*. Guilford Press.
- Kessler, R. C., Sampson, N. A., Berglund, P., Gruber, M. J., Al-Hamzawi, A., Andrade, L., Bunting, B., Demyttenaere, K., Florescu, S., de Girolamo, G., Gureje, O., He, Y., Hu, C., Huang, Y., Karam, E., Kovess-Masfety, V., Lee, S., Levinson, D., Mora, M., & Moskalewicz, J. (2015). Anxious and non-anxious major depressive disorder in the World Health Organization World Mental Health Surveys. *Epidemiology and Psychiatric Sciences*, 24(3), 210–226. <https://doi.org/10.1017/s2045796015000189>
- Khunti, K., Singh, A. K., Pareek, M., & Hanif, W. (2020). Is ethnicity linked to incidence or outcomes of Covid-19? *BMJ*, 369(8243). <https://doi.org/10.1136/bmj.m1548>
- Kim, J. H., Lee, S. J., Rim, H. D., Kim, H. W., Bae, G. Y., & Chang, S. M. (2008). The relationship between alexithymia and general symptoms of patients with depressive disorders. *Psychiatry Investigation*, 5(3), 179. <https://doi.org/10.4306/pi.2008.5.3.179>
- Kleinberg, J. L. (1996). Treating work inhibition in group psychotherapy. *Group*, 20(4), 287–302. <https://doi.org/10.1007/bf02108587>
- Kojima, M. (2012). Alexithymia as a prognostic risk factor for health problems: A brief review of epidemiological studies. *BioPsycho-Social Medicine*, 6(1), 21. <https://doi.org/10.1186/1751-0759-6-21>
- Le, H. N., Berenbaum, H., & Raghavan, C. (2002). Culture and alexithymia: Mean levels, correlates and the role of parental socialization of emotions. *Emotion*, 2(4), 341–360. <https://doi.org/10.1037/1528-3542.2.4.341>
- Levant, R. F. (1998). Desperately seeking language: Understanding, assessing, and treating normative male alexithymia.
- Levant, R. F., Good, G. E., Cook, S. W., O'Neil, J. M., Smalley, K. B., Owen, K., & Richmond, K. (2007). “The normative male alexithymia scale: Measurement of a gender-linked syndrome”: Correction to Levant et al. (2006). *Psychology of Men & Masculinity*, 8(3), 199–200. <https://doi.org/10.1037/1524-9220.8.3.199>
- Levant, R. F., Hall, R. J., Williams, C. M., & Hasan, N. T. (2009). Gender differences in alexithymia. *Psychology of Men & Masculinity*, 10(3), 190–203. <https://doi.org/10.1037/a0015652>
- Leweke, F., Leichsenring, F., Kruse, J., & Hermes, S. (2012). Is Alexithymia associated with specific mental disorders? *Psychopathology*, 45(1), 22–28. <https://doi.org/10.1159/000325170>
- Li, S., Zhang, B., Guo, Y., & Zhang, J. (2015). The association between alexithymia as assessed by the 20-item Toronto Alexithymia scale and depression: A meta-analysis. *Psychiatry Research*, 227(1), 1–9. <https://doi.org/10.1016/j.psychres.2015.02.006>
- Lo, C. (2014). Cultural values and Alexithymia. *SAGE Open*, 4(4), 215824401455511. <https://doi.org/10.1177/2158244014555117>
- Luminet, O., Bagby, R. M., & Taylor, G. J. (2001). An evaluation of the absolute and relative stability of Alexithymia in patients with major depression. *Psychotherapy and Psychosomatics*, 70(5), 254–260. <https://doi.org/10.1159/000056263>
- Marchesi, C., Fontò, S., Balista, C., Cimmino, C., & Maggini, C. (2005). Relationship between Alexithymia and panic disorder: A longitudinal study to answer an open question. *Psychotherapy and Psychosomatics*, 74(1), 56–60. <https://doi.org/10.1159/000082028>
- Martínez-Sánchez, F., Ato-García, M., & Ortiz-Soria, B. (2003). Alexithymia — state or trait? *The Spanish Journal of Psychology*, 6(1), 51–59. <https://doi.org/10.1017/s1138741600005205>
- Mattila, A. K., Poutanen, O., Koivisto, A.-M., Salokangas, R. K. R., & Joukamaa, M. (2007). Alexithymia and life satisfaction in primary healthcare patients. *Psychosomatics*, 48(6), 523–529. <https://doi.org/10.1176/appi.psy.48.6.523>
- Memon, A., Taylor, K., Mohebbi, L. M., Sundin, J., Cooper, M., Scanlon, T., & de Visser, R. (2016). Perceived barriers to accessing mental health services among black and minority ethnic (BME) communities: A qualitative study in Southeast England. *British Medical Journal Open*, 6(11), e012337. <https://doi.org/10.1136/bmjopen-2016-012337>
- Murphy, S. M., Maskit, B., & Bucci, W. (2015). Putting feelings into words: Cross-linguistic markers of the referential process. *Computation Linguistics and Clinical Psychology*, 80–88. <https://doi.org/10.3115/v1/w15-1210>
- Nekouei, Z. K., Doost, H. T. N., Yousefy, A., Manshaee, G., & Sadeghei, M. (2014). The relationship of Alexithymia with anxiety-depression-stress, quality of life, and social support in Coronary heart disease (a psychological model). *Journal of Education and Health Promotion*, 3. <https://doi.org/10.4103/2F2277-9531.134816>
- Nemiah, J. C., Freyberger, H., & Sifneos, P. E. (1976). Alexithymia a view of the psychosomatic process. In O. W. Hill (Ed.), *Modern trends in psychosomatic medicine* (Vol. 3; pp. 430–439). London Butterworths. - References - Scientific Research Publishing. (n.d.). [www.scirp.org](https://www.scirp.org). Retrieved April 8, 2022, from [https://www.scirp.org/\(S\(i43dyn45teexjx455qlt3d2q\)\)/reference/ReferencesPapers.aspx?ReferenceID=408080](https://www.scirp.org/(S(i43dyn45teexjx455qlt3d2q))/reference/ReferencesPapers.aspx?ReferenceID=408080). Accessed 8 Apr 2022.

- Office for National Statistics. (2011). *Coronavirus and depression in adults, Great Britain - Office for National Statistics*. <https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/articles/coronavirusanddepressioninadultsgreatbritain/januarytomarch2021>
- Ogłodek, E. A., Szota, A. M., Just, M. J., Araszkievicz, A., & Szromek, A. R. (2016). Sense of alexithymia in patients with anxiety disorders comorbid with recurrent urticaria. *Neuropsychiatric Disease and Treatment*, 995–1004. <https://doi.org/10.2147/NDT.S94600>
- Ogrodniczuk, J. S., Kealy, D., Hadjipavlou, G., & Cameron, K. (2018). *Therapeutic issues* (pp. 190–206). Cambridge University Press eBooks. 190–206. <https://doi.org/10.1017/9781108241595.014>
- Palmer, B., Donaldson, C., & Stough, C. (2002). Emotional intelligence and life satisfaction. *Personality and Individual Differences*, 33(7), 1091–1100. [https://doi.org/10.1016/s0191-8869\(01\)00215-x](https://doi.org/10.1016/s0191-8869(01)00215-x)
- Parker, J. D. A., Taylor, G. J., & Bagby, R. M. (1997). Alexithymia: Relationship with ego defense and coping styles. *Comprehensive Psychiatry*, 39(2), 91–98. [https://doi.org/10.1016/s0010-440x\(98\)90084-0](https://doi.org/10.1016/s0010-440x(98)90084-0)
- Pavot, W., & Diener, E. (1993). Review of the satisfaction with life scale. *Psychological Assessment*, 5(2), 164–172. <https://doi.org/10.1037/1040-3590.5.2.164>
- Porcelli, P., Leoci, C., Guerra, V., Taylor, G. J., & Bagby, R. M. (1996). A longitudinal study of alexithymia and psychological distress in inflammatory bowel disease. *Journal of Psychosomatic Research*, 41(6), 569–573. [https://doi.org/10.1016/s0022-3999\(96\)00221-8](https://doi.org/10.1016/s0022-3999(96)00221-8)
- Saariaho, A., Saariaho, T., Mattila, A. K., Karukivi, M., & Joukamaa, M. (2013). Alexithymia and depression in a chronic pain patient sample. *General Hospital Psychiatry*, 35(3), 239–245. <https://doi.org/10.1016/j.genhosppsych.2012.11.011>
- Saarijärvi, S., Salminen, J. K., & Toikka, T. B. (2001). Alexithymia and depression. *Journal of Psychosomatic Research*, 51(6), 729–733. [https://doi.org/10.1016/s0022-3999\(01\)00257-4](https://doi.org/10.1016/s0022-3999(01)00257-4)
- Shibata, M., Ninomiya, T., Jensen, M. P., Anno, K., Yonemoto, K., Makino, S., Iwaki, R., Yamashiro, K., Yoshida, T., Imada, Y., Kubo, C., Kiyohara, Y., Sudo, N., & Hosoi, M. (2014). Alexithymia is associated with greater risk of chronic pain and negative affect and with lower life satisfaction in a general population: The Hisayama Study. *PLoS ONE*, 9(3), e90984. <https://doi.org/10.1371/journal.pone.0090984>
- Stern, A. F. (2014). *The hospital anxiety and depression scale*. Occupational medicine (Oxford, England), 64(5), 393–394. <https://doi.org/10.1093/occmed/kqu024>
- Taylor, G. J. (1984). Alexithymia: Concept, measurement, and implications for treatment. *The American Journal of Psychiatry*, 141(6), 725–732. <https://doi.org/10.1176/ajp.141.6.725>
- Taylor, G. J., & Bagby, R. M. (2000). Assessment of alexithymia: Self-report and observer-rated measures. In J. D. A. Parker, & R. Bar-On (Eds.), (pp. 301–319). Jossey Bass.
- Taylor, G. J., & Bagby, R. M. (2020). Examining proposed changes to the conceptualization of the alexithymia construct: The way forward tilts to the past. *Psychotherapy and Psychosomatics*, 1–11. <https://doi.org/10.1159/000511988>
- Taylor, G. J., Bagby, R. M., & Parker, J. D. A. (1997a). Disorders of affect regulation: Alexithymia in medical and psychiatric illness. In *Google Books*. <https://books.google.co.uk/bookshl=en&lr=&id=DV6IZrQ6dqUC&oi=fnd&pg=PR11&dq=Disorders+of+Affect+Regulation.+alexithymia+in+medical+and+Psychiatric+illness>
- Taylor, G. J., Michael Bagby, R., Parker, J. D. A., & Grotstein, J. (1997b). *Disorders of affect regulation Alexithymia in medical and psychiatric illness*. Cambridge University Press.
- Taylor, G. J., Bagby, R. M., & Parker, J. D. A. (2016). What's in the name alexithymia? A commentary on affective agnosia: Expansion of the alexithymia construct and a new opportunity to integrate and extend Freud's legacy. *Neuroscience & Biobehavioral Reviews*, 68, 1006–1020. <https://doi.org/10.1016/j.neubiorev.2016.05.025>
- United Nations. (2016). Mental health and development | United nations enable. Un.org. <https://www.un.org/development/desa/disabilities/issues/mental-health-and-development.html>
- Weich, S., Nazroo, J., Sproston, K., McManus, S., Blanchard, M., Erens, B., Karlsen, S., King, M., Lloyd, K., Stansfeld, S., & Tyrer, P. (2004). Common mental disorders and ethnicity in England: The EMPIRIC Study. *Psychological Medicine*, 34(8), 1543–1551. <https://doi.org/10.1017/s0033291704002715>
- Wester, S. R., Vogel, D. L., Pressly, P. K., & Heesacker, M. (2002). Sex differences in emotion. *The Counseling Psychologist*, 30(4), 630–652. <https://doi.org/10.1177/00100002030004008>
- Zhang, H., Fan, Q., Sun, Y., Qiu, J., & Song, L. (2017). A study of the characteristics of Alexithymia and emotion regulation in patients with depression. *Shanghai Archives of Psychiatry*, 29(2), 95–103. <https://doi.org/10.11919/j.issn.1002-0829.216098>
- Zigmond, A., & Snaith, R. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica*, 67, 361–370.

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