



COUNSELING FRAMEWORK, SPECIFICALLY AIMED AT ALEXITHYMIA, AND TAILORED TO AFFECTIVE VALENCE: PRECISE ASSESSMENT AS A KEY

Tanya Dimitrova

Sofia University "St. Kliment Ohridski"
Sofia, 1504, 15 Tsar Osvoboditel Blvd., BULGARIA

tanqdimitrovavn@gmail.com

Abstract: *There are numerous studies regarding therapy for high alexithymia, however, they share two limitations: the interventions studied are usually not specifically targeting alexithymia and those mentioning the valence of the emotion are rare. This could be partially due to the lack of precise measurement and diagnostics procedure. This paper aims to fill this gap by focusing on diagnostics as a fundamental first step and building on it a counseling framework specifically aimed at alexithymia and tailored to the affective valence.*

This is the first research in Bulgaria that, through confirmatory factor analyses, studies two of the most widely used alexithymia self-reports – PAQ and TAS-20, comparing the psychometric properties of the Bulgarian translations and analyzing their applicability in terms of mental health and therapy.

The sample (N=360) filled PAQ, TAS-20, anxiousness, anhedonia, depression, and life satisfaction scales. Data suggest that PAQ and TAS-20 are valid and reliable instruments. Both may have wide application in screening and research, but as far as clinical decision making, PAQ seems to possess better psychometric properties. Furthermore PAQ's more differentiated assessment might be of higher contribution since it was found that affective valence is an independent predictor of anhedonia and depression. Life satisfaction was unrelated to PAQ and negatively correlated to TAS-20, suggesting that the widely accepted assumption that alexithymia is associated with lower life satisfaction might be due to measurement specifics.

Based on literature review and empirical data from this paper, counseling framework specifically aimed at alexithymia and tailored to the affective valence is proposed.

Keywords: alexithymia; assessment; counseling and therapy; Perth Alexithymia Questionnaire (PAQ); Toronto Alexithymia Scale (TAS-20).

The author have no funding to report.

The author have no support to report.

The author have declared that no competing interests exist.

THE ARTICLE CAN BE CITED AS FOLLOWS:

Dimitrova, T. (2023). Counseling Framework, Specifically Aimed at Alexithymia, and Tailored to Affective Valence: Precise Assessment as a Key. *Psychological Research (in the Balkans)*, Volume 26, Number 3, 187-202. ISSN 2815-4797 (Print), ISSN 2815-4800 (Online). DOI: <https://doi.org/10.7546/PsyRB.2023.26.03.02>

Submitted – 13 September 2023

Revised – 23 November 2023

Published – 30 December 2023

The author has read and approved the final manuscript.

INTRODUCTION

Alexithymia, as a construct relevant to mental and somatic health, has been of a scientific interest for decades. To date most researchers agree that alexithymia is a multidimensional personality trait with relative stability, consisting of three components: (1) difficulties in identifying feelings (DIF), (2) difficulties in verbalizing feelings (DDF) and (3) externally oriented thinking (EOT) (for detailed description see Bagby, Parker & Taylor, 1994; Bagby, Taylor & Parker, 1994; Preece et al., 2017). However, many discussions had occurred over the years in attempt to clarify the construct, e.g. its stability, etiology, nature. The debate about the latter is still open, focusing on whether daydreaming/fantasizing is a component of the EOT facet of alexithymia or it shall be analyzed as a separate construct. Empirical evidence so far supports the latter (Preece, Becerra, Robinson et al., 2020; Taylor & Bagby, 2021; Preece & Gross, in press).

The many discussions over the years and the uncertainty about what alexithymia is and what it is not have contributed to the lack of evidence-based psychological counseling¹ framework aimed specifically at it and tailored to the valence of the emotion. This is alarming considering the established links between this construct and almost any disorder. Often accompanying them, alexithymia, which in itself is not a clinical disorder, remains on the periphery of psychotherapeutic interventions, as they are primarily aimed at controlling the severity of the clinical symptoms. Numerous studies have already been conducted regarding therapy for high alexithymia, however, they share two limitations: 1) the interventions studied are usually not specifically targeting alexithymia (but rather disorders which it's associated with) (e.g., Yilmaz et al., 2019), and 2) interventions mentioning the valence of the emotion are rare (e.g., Lane et al., 2013). These are serious limitations since the former focuses on clinical symptoms without an eye toward prevention, and the latter limits therapy to only negative affect and distress reduction interventions. This paper aims to fill this gap by taking the first step towards formulation of a coun-

seling framework specifically aimed at alexithymia and tailored to the valence of the emotion. As with any psychological intervention, the first step is the precise assessment (i.e., diagnostics) in order to formulate a specific counseling plan that best meets the individual's needs.

Considering the precise assessment as a key for the effective psychological intervention, this paper aims to focus on it and to contribute by conducting the first study in Bulgarian sample using the Bulgarian translations of Perth Alexithymia Questionnaire (PAQ) and Toronto Alexithymia Scale (TAS-20), studying their factor structures by means of confirmatory factor analyses², and also their relations with anhedonia, depression, anxiousness and life satisfaction – constructs tightly related to both alexithymia and mental health, therefore a main focus in counseling process. A brief overview of the constructs of interest is presented below.

Alexithymia: Theoretical Models and Assessment

In their work together Nemiah and Sifneos (1970; Sifneos, 1973) used the word of Greek origin “alexithymia” to describe their clinical observations of patients suffering from the so-called “classic” psychosomatic disorders. The authors noted that these patients were characterized by (1) difficulties in identifying feelings and differentiating emotions from bodily sensations; (2) difficulties in verbalizing feelings; (3) undeveloped skills for fantasizing and daydreaming, and (4) externally oriented thinking, or the so-called “operational thinking”, characterized by pragmatism, concentration only on current events, and lack of imagination.

Over the decades numerous theoretical models have been created in attempt to describe, explain, and study alexithymia (for details see Preece et al., 2017). The two approaches (and the assessment instruments based on them) with highest empirical support to date are presented below:

TAS-20: The current version has two predecessors: TAS-26 and TAS-R. TAS-26 consisted of four scales, according to the components described by Sifneos. Additional research though reported that a

¹ The words “counseling”/“therapy”, “client”/“patient” are used interchangeably since the focus is not on differentiating psychological approaches into clinical/non-clinical, short-/long-term, etc., but on discussing the possibly effectiveness when working with high alexithymia in general

² The Bulgarian translations of TAS-20 and PAQ have already been studied through exploratory factor analyses (Popov et al., 2016, Dimitrova, 2022), but the obtained results did not fully correspond to the theoretically assumed models. Therefore, this paper aims to study whether the pre-established theoretical models will be confirmed for the Bulgarian translations

three-factor solution was a better fit, which led to the today's version of the instrument. However, the authors insist that although items directly measuring fantasizing skills are excluded from the questionnaire, imagination and fantasizing are significant components of alexithymia and are measured indirectly (Bagby, Taylor & Parker, 1994).

To date, TAS-20 is one of the most widely used alexithymia assessment instruments. There is abundant evidence of its psychometric properties. One of its main shortcomings, however, is the reliability of the Externally oriented thinking facet. One possible explanation for this (in addition to the five reversed scored items in this facet) could be precisely the fantasizing component. It's part of the "pensée opératoire" that EOT facet aims to measure. In this regard, Taylor and Bagby (2021) suggested the combination of TAS-20 with projective methods for assessing fantasy, such as the Rorschach Reality-Fantasy Index. Of course, it's important to emphasize that although analyzing alexithymia at facet level is standard practice today, TAS-20 was not designed for this purpose. The originally intended form of interpretation required analysis only of the overall alexithymia score (Preece, Becerra, Allan et al., 2020).

Another limitation of TAS-20 is that it assesses depressive and anxiousness tendencies and correlates with several instruments for negative affect and distress, which should be taken into account when interpreting TAS-20's results (Rosenberg et al., 2016; Preece, Becerra, Boyes et al., 2020).

Another serious limitation is that, although it was designed to measure an affective phenomenon, TAS-20 does not allow assessment of the valence of the affect. The authors commented that high alexithymia was related to decreased experience of positive affects (Taylor et al., 1997, p. 31), yet TAS-20 does not allow valence differentiation.

PAQ: Preece and his colleagues (Preece et al., 2017; Preece et al. 2018) created PAQ in attempt to overcome the limitations of the previous theoretical models and their corresponding psychometric instruments. Thus, PAQ is based on the Attention-Appraisal model according to which externally oriented thinking represents difficulty at the attention stage, and identifying and verbalizing feelings is associated with difficulty at the appraisal stage.

PAQ is a 24-item questionnaire with five subscales: Difficulty identifying feelings and Difficulty verbalizing feelings for positive and negative valence, and Externally oriented thinking. Together they form 5 composite scores and a total scale score (see Table 4). Hereby, PAQ provides more differentiated assessment. Furthermore, the high

reliability of the Externally oriented thinking facet is an improvement of particular importance. Another advantage of PAQ is its discriminant validity in regards to the distress construct (Preece, Becerra, Boyes et al., 2020), thus overcoming one of TAS-20's main limitations.

Still, PAQ has also its potential limitations, namely the assessment of the daydreaming/fantasizing activity. The Externally oriented thinking facet, as formulated in PAQ, does not directly nor indirectly measure fantasizing skills. According to Taylor & Bagby (2021) this is a serious shortcoming since it thus rejects a key component of alexithymia – the "pensée opératoire". However, the latest studies on alexithymia and imaginal processes consistently concluded that daydreaming/fantasizing is a construct separate from alexithymia (Preece, Becerra, Robinson et al., 2020; Preece & Gross, in press).

Discussions like this are necessary from both theoretical and practical perspectives, as they contribute to evidence-based decision-making by mental health professionals. Speaking of mental health, it's important to emphasize that alexithymia is not a stand-alone predictor of illness or disorder. Even on the contrary, according to some authors it can also have a protective function against distress and anxiety (Rosenberg et al., 2016), and could contribute to the enrollment in professions with high social significance (e.g. military and police special forces) (Dimitrova, 2021). Thus, it's important to consider alexithymia in a complex manner, examining its relations with constructs with both negative and positive links to mental health. For this reason, this paper focuses on constructs covering both aspects: negative (anhedonia, depression, anxiousness), and positive (life satisfaction) links to mental health.

Alexithymia: Relations with Mental Health Constructs

Anhedonia is a construct related to mental health and alexithymia. It has been reported that persons with high alexithymia are prone to more intense negative emotions and weaker positive ones (anhedonic tendencies) which appears to be a mediator of the alexithymia–mental health relationship (Dubey & Pandey, 2013). The relation between alexithymia and positive emotions should be considered as of key importance since positive affect is seen as a "buffer" against stress, thus anhedonic tendencies appear to be a risk factor for the development of psychological and physical symptoms (Bernard, 2014).

Depression is another construct tightly related to mental health and alexithymia. As the most common mental disorder (APA, n.d.) depression has been a main focus of a number of studies. Thus, it's not surprising that its relations with alexithymia have been widely reported (e.g., Yilmaz et al., 2019). Research is converging on the notion that these are two separate constructs with positive moderate correlation (Taylor et al., 1997).

Anxiousness as a personality trait is also related to both mental health and alexithymia. As forming part of the Negative affect domain according to the Personality Inventory for DSM-5 (PID-5), anxiousness could be seen as "general" risk factor for psychopathology (Paulus & Zvolensky, 2020). Its positive correlations with alexithymia were already reported (e.g. Rosenberg et al., 2016; Dimitrova, 2022).

Satisfaction with life has also been found as related to both alexithymia and mental health. It was reported that life satisfaction was a protective factor of psychopathological symptoms (e.g. Tamarit et al., 2022) and was related to reduced negative emotions (Veronese et al., 2019). Negative association was reported between life satisfaction and alexithymia, even when depression and other confounding factors were controlled for (Mattila et al., 2007).

Considering this data, the four construct mentioned above and their relations to alexithymia may play a significant role for mental health care practices.

Alexithymia: Counseling and Therapy

Analyzing mental health practices, it seems that despite the general agreement about the importance of alexithymia for the mental and somatic health, the conceptual framework for psychological interventions has not advanced significantly. This could be due on one hand to the lack of consistency as far as the construct itself (e.g. the fantasizing aspect). On the other hand, personality traits are known to be very difficult to modify, which is why, with the exception of borderline personality disorder, personality is not a major focus of psychological interventions (Lane, 2020). Given these factors, it is not surprising that despite the decades of research, little progress has been made for the building of conceptual framework specially aimed at alexithymia.

To the best of the authors knowledge, at the moment high alexithymia in psychotherapy is mainly

dealt with indirectly, i.e. by influencing other phenomena with which a connection has been found, for example, depression, eating disorder, etc. An exception is the adapted psychotherapy program for "normative male alexithymia" (Levant et al., 2009). Since this program is aimed solely at high alexithymia males from Western societies, its generalizability is questionable.

As far as psychological approaches effectiveness for high alexithymia in general, it has been consistently reported that interventions focused on training and psychoeducation are more effective than those focused on introspection and insight (Yilmaz et al., 2019). It has also been found that different approaches have different effectiveness on different facets of the construct. For example, cognitive-behavioral therapy reduces the difficulties in identifying and verbalizing feelings, but not the externally oriented thinking (EOT) (Rufer et al., 2010), while existential-humanistic approaches are effective on EOT, but not on the other two facets (Yilmaz et al., 2019). This data confirms the need of more detailed and precise facet assessment before intervention planning (see Dimitrova, 2021; Dimitrova, 2022). Furthermore, to the best of the author's knowledge no research is available regarding psychological interventions specifically targeting alexithymia and tailored to the valence of the emotion. This could be serious limitation since the valence has been found to be a significant aspect in the study of affective phenomena, including alexithymia (Panayiotou et al., 2018). Thus, research accounting for the valence, and studying also non-clinical samples is needed to build a conceptual counseling framework specifically aimed at alexithymia, and tailored to the valence of the emotion not solely for people with high alexithymia and clinical symptoms, but also as a prevention strategy for clinically healthy individuals with high alexithymia. Therefore, empirical research focused on alexithymia assessment and diagnostics is extremely important for counseling practice as a key first step for intervention planning.

PURPOSE OF THE STUDY

1. To study for a first time by means of confirmatory factor analysis the factor structures of the Bulgarian translations of PAQ and TAS-20. Considering the discrepancy between the theoretically assumed structures and the ones reported after exploratory factor analyses on the translated ver-

³ Reported two-factor solution: 1) Difficulties in identifying and describing feelings; 2) Externally oriented thinking

sions (TAS-20: Popov et al, 2016³; PAQ: Dimitrova, 2022⁴), the confirmatory factor analyses could answer the question to what extent the Bulgarian translations of these instruments are useful for mental health practice

- 1.1. To compare and analyze psychometric structures of Bulgarian translations
- 1.2. To study the relations between PAQ/TAS-20 and a number of key mental health constructs, namely anxiousness, anhedonia, depression and life satisfaction
2. To study the role of the valence of the emotion in alexithymia as predictor of anhedonia, depression and life satisfaction
3. To propose a conceptual counseling framework specifically aimed at alexithymia and tailored to the valence of the emotion, with focus on precise diagnostics as the first step

HYPOTHESES

1. The pre-established theoretical models of PAQ⁵ and TAS-20⁶, along with their reliability and validity will be confirmed for the Bulgarian translations
2. Different relations between PAQ/TAS-20 and anxiousness, anhedonia, depression and life satisfaction will be found⁷:
 - 1.1. Stronger positive correlations between TAS-20 and anxiousness, anhedonia, depression compared to PAQ
 - 1.2. Stronger negative correlation between TAS-20 and satisfaction with life compared to PAQ
3. The valence of the emotion in alexithymia will be predictor of anhedonia, depression and life satisfaction, being the positive emotions with higher predictive value than the negative emotions.⁸

PROCEDURE

The study received appropriate ethical review and clearance, thus meeting all ethical standards. It was approved by the Ethics Committee of the education-

al institution under which its conducted (№ 95-T-5/01.02.2022).

Participants were informed about the aim and duration of the study and gave their informed consent.

Statistical packages PSPP (version 1.4.1) and JASP (version 0.16.1.0.) were used to process the data.

METHODS

- PAQ – Perth Alexithymia Questionnaire (Preece et al., 2018) – 24 items, 7-point Likert scale. The Bulgarian translation by Dimitrova (2022) was used
- TAS-20 – Toronto Alexithymia Scale (Bagby, Parker & Taylor, 1994; Bagby, Taylor & Parker, 1994) – 20 items, 5-point Likert scale. The Bulgarian translation by Popov et al. (2016) was used
- PID-5 – The Personality Inventory for DSM-5—Adult (Krueger et al., 2013) – 220 items, 4-point Likert scale. The Bulgarian translation by Hancheva (in press) was used
 - o Only scales measuring Anhedonia and Anxiousness were used
- PHQ-9 – Severity Measure for Depression—Adult (adapted from the PHQ-9) (Kroenke et al., 2001) – 9 items, 4-point Likert scale. Bulgarian version downloaded from <https://www.phqscreeners.com/>
- SWL-3 – Abbreviated Three-Item Versions of the Satisfaction with Life Scale (Kjell & Diener, 2021) – assesses satisfaction with life in general (not domain specific). Bulgarian version downloaded from <https://eddiener.com/scales/7>
- Socio-demographic survey

RESPONDENTS

Adult general community sample (N=360) filled anonymously the instruments listed above. Table 1 presents the sociodemographic characteristics of the sample.

⁴ Reported three-factor solution: 1) Difficulty appraising positive feelings; 2) Difficulty appraising negative feelings; 3) Externally oriented thinking

⁵ Based on the vast number of studies confirming the five-factor solution (e.g., Bilge & Bilge, 2020; Asl et al., 2020; Becerra et al., 2021)

⁶ Based on previous research (Dimitrova, 2022)

⁷ Based on previous research (e.g., Rosenberg et al., 2016; Dimitrova, 2022)

⁸ Based on previous research (e.g., Dubey & Pandey, 2013; Bernard, 2014)

Table 1. Sociodemographic characteristics of the sample

Sex	Male – 147 (40.8%)	Female – 211 (58.6%)	Not indicated – 2 (0.6%)
Age	18-28 – 61 (16.9%) 40-50 – 111 (30.8%)	29-39 – 139 (38.6%) 51-60 – 34 (9.4%)	Above 60 – 9 (2.5%) Not indicated – 6 (1.7%)
Education	Primary education – 4 (1.1%) Higher education – 239 (66.4%)	Secondary education – 114 (31.7%) Not indicated – 3 (0.8%)	
Marital status	Married / Cohabitation – 223 (61.9%) Divorced – 34 (9.4%)	Not married / No cohabitation – 92 (25.6%) Widower – 5 (1.4%)	Not indicated – 6 (1.7%)
Employment position	Manager / Leadership position – 56 (15.6%) Employee / Subordinate – 244 (67.8%)	Of working age but unemployed – 30 (8.3%) Retiree – 6 (1.7%)	Not indicated – 24 (6.7%)

RESULTS

Descriptive Statistics

Confirmatory Factor Analyses – Hypothesis 1

Confirmatory factor analyses (CFA) were conducted in order to study the factor structures of PAQ and TAS-20 translated versions. Fit index values used in this study were: CFI, TLI, RMSEA, SRMR and AIC. As indicating acceptable fit were considered: CFI and TLI around ≥ 0.90 , RMSEA and SRMR around $\leq .08$; and lower AIC values indicating a better fit.

Following the original procedure of Preece and colleagues (Preece et al., 2018), 5 factor solutions were examined. As Table 2 presents, the 5th model is superior in fit statistics compared to the other 4 solutions and reflects the intended factor structure of the questionnaire.

Following theoretical and empirical data, three factor solutions were tested, including the one reported by the authors of the Bulgarian translation (see footnote 3). As Table 3 presents, the 3rd model is superior in fit statistics compared to the other 2 solutions and reflects the intended factor structure of the questionnaire. Although TLI doesn't reach

Table 2. Goodness-of-fit indices for the PAQ models (N = 233⁹)

Model	χ^2/df	CFI	TLI	RMSEA	SRMR	AIC
1-factor General alexithymia	999.380/252	0.740	0.716	0.116	0.084	17159.762
2-factor: GDAF – GEOT	769.526/251	0.820	0.802	0.097	0.065	16931.907
3-factor (no valence): GDIF-GDDF-GEOT	667.035/249	0.855	0.839	0.087	0.062	16833.416
3-factor (valence): NDAF-PDAF-GEOT	726.616/249	0.834	0.816	0.093	0.064	16892.998
5-factor: NDIF-PDIF-NDDF-PDDF-GEOT	540.522/230	0.892	0.870	0.078	0.053	16792.903

Note: GDAF (General difficulty appraising feelings); GEOT (General-Externally oriented thinking); GDIF (General difficulty identifying feelings); GDDF (General difficulty describing feelings); NDAF (Difficulty appraising negative feelings); PDAF (Difficulty appraising positive feelings); NDIF (Difficulty identifying negative feelings); PDIF (Difficulty identifying positive feelings); NDDF (Difficulty describing negative feelings); PDDF (Difficulty describing positive feelings)

Table 3. Goodness-of-fit indices for the TAS-20 models (N = 280)

Model	χ^2/df	CFI	TLI	RMSEA	SRMR	AIC
1-factor: General alexithymia	601.587/170	0.698	0.663	0.102	0.101	13831.755
2-factor: DIF&DDF - EOT	404.907/169	0.835	0.815	0.075	0.078	13613.373
3-factor: DIF-DDF-EOT	387.026/167	0.846	0.825	0.073	0.075	13580.434

Note: DIF (Difficulty identifying feelings); DDF (Difficulty describing feelings); EOT (Externally oriented thinking)

⁹ Since this paper is part of a larger study, questionnaires were randomly distributed to avoid fatigue and questionnaire sequence bias. Therefore, a different number of participants has filled each of the questionnaires

Table 4. Reliability analyses – Internal consistency for all questionnaires used and Test-Retest statistics on PAQ

Instruments and scales		Cronbach's α	Test-Retest
PAQ	Negative-Difficulty identifying feelings (N-DIF)	0.797	0.971***
	Positive-Difficulty identifying feelings (P-DIF)	0.844	0.977***
	Negative-Difficulty describing feelings (N-DDF)	0.791	0.972***
	Positive-Difficulty describing feelings (P-DDF)	0.826	0.983***
	General-Externally orientated thinking (G-EOT)	0.804	0.974***
	General-Difficulty identifying feelings (G-DIF)	0.892	0.983***
	General-Difficulty describing feelings (G-DDF)	0.887	0.980***
	Negative-Difficulty appraising feelings (N-DAF)	0.875	0.980***
	Positive-Difficulty appraising feelings (P-DAF)	0.889	0.981***
	General-Difficulty appraising feelings (G-DAF)	0.932	0.983***
	Alexithymia (total scale score)	0.928	0.979***
TAS-20	Difficulty identifying feelings (DIF)	0.824	
	Difficulty describing feelings (DDF)	0.758	
	Externally orientated thinking (EOT)	0.651	
	Alexithymia (total scale score)	0.799	
PID-5	Anhedonia scale	0.894	
	Anxiousness scale	0.913	
	PHQ-9 (Severity Measure for Depression)	0.867	
	SWL-3 (Satisfaction With Life Scale-3)	0.765	

* $p < 0,05$, ** $p < 0,01$, *** $p < 0,001$

the value of ≥ 0.90 , it's still close to it, which along with the values of the rest of the fit indices, allows the conclusion that the 3-factor model is the best and theoretically congruent solution in the current data set.

Reliability analyses

As presented in Table 4, all of the instruments had good or very good reliability. PAQ reliability was also confirmed by the test-retest (3 months later) analysis.

Attention shall be paid to alexithymia total scale score reliability, when assessed through TAS-20. Cronbach's α reaches 0.8 which is an acceptable value for research and screening purposes but is not recommendable for clinical decision making (Groth-Marnat, 2009). PAQ's total scale score however exceeds 0.9 which is an advantage over TAS-20 and suggests that PAQ may be better solution for diagnostics and clinical practice.

Correlation analyses – Hypotheses 1&2

To study the convergent, divergent and discriminant validity of the Bulgarian translations of the alexithymia instruments, correlation analyses were conducted (Tables 5-8). They confirm the validity

of PAQ and TAS-20, indicating also specific relations between alexithymia construct, and anhedonia, anxiousness, depression and life satisfaction, depending on which alexithymia assessment instrument was used.

As table 5 presents, stronger correlations are present between TAS-20's facets and their respective in PAQ, measuring negative affect. This is in compliance with previous studies (e.g. Dimitrova, 2022).

As presented in Table 6, there were weaker positive correlations between PAQ and anhedonia, anxiousness, and depression compared to TAS-20, and no statistically significant correlation with life satisfaction, unlike TAS-20 (negative correlation found). To explore this issue in detail, a facet-level correlation analyses were conducted.

As seen in Table 7, none of the PAQ scales correlated statistically significantly with life satisfaction.

As presented in Table 8, life satisfaction correlated negatively with TAS-20's DIF and DDF facets, which could be due to the focus of these facets to measure difficulties in processing emotional stimuli with negative valence only. TAS-20's tendency to assess negative affect and distress could be leading to the negative correlations found between alexithymia and life satisfaction.

Table 5. Correlation analysis – PAQ – TAS-20

	TAS-20_DIF	TAS-20_DDF	TAS-20_EOT	TAS-20_TOTAL
PAQ_N-DIF	0.547***	0.508***	0.254**	0.607***
PAQ_P-DIF	0.458***	0.422***	0.344***	0.570***
PAQ_N-DDF	0.442***	0.605***	0.409***	0.666***
PAQ_P-DDF	0.348***	0.487***	0.388***	0.581***
PAQ_G-EOT	0.163*	0.351***	0.436***	0.441***
PAQ_G-DIF	0.535***	0.490***	0.322***	0.626***
PAQ_G-DDF	0.442***	0.585***	0.419***	0.662***
PAQ_N-DAF	0.535***	0.608***	0.353***	0.686***
PAQ_P-DAF	0.441***	0.482***	0.387***	0.607***
PAQ_G-DAF	0.519***	0.582***	0.387***	0.684***
PAQ_TOTAL	0.438***	0.560***	0.447***	0.665***

* p<0,05, ** p<0,01, *** p<0,001

Table 6. Correlation analysis – Alexithymia: PAQ&TAS-20 (factor level), Anhedonia, Anxiousness, Depression and Life Satisfaction

	PID_5_Anhedonia	PID_5_Anxiousness	PHQ_9	SWL
PAQ	0.378***	0.289***	0.389***	-0.070
TAS-20	0.430***	0.509***	0.457***	-0.312***

* p<0,05, ** p<0,01, *** p<0,001

Table 7. Correlation analysis – Alexithymia: PAQ (facet level), Anhedonia, Anxiousness, Depression and Life Satisfaction

	PID_5_Anhedonia	PID_5_Anxiousness	PHQ_9	SWL
N-DIF	0.282**	0.284**	0.273**	-0.100
P-DIF	0.250*	0.348***	0.304**	-0.047
N-DDF	0.306**	0.233*	0.277**	-0.129
P-DDF	0.202	0.177	0.309**	-0.026
G-EOT	0.390***	0.182	0.359***	-0.007
G-DIF	0.291**	0.341***	0.312**	-0.082
G-DDF	0.279**	0.224*	0.316**	-0.088
N-DAF	0.320**	0.277**	0.298**	-0.126
P-DAF	0.253*	0.287**	0.348***	-0.040
G-DAF	0.310**	0.301**	0.343***	-0.093

* p<0,05, ** p<0,01, *** p<0,001

Table 8. Correlation analysis – Alexithymia: TAS-20 (facet level), Anhedonia, Anxiousness, Depression and Life Satisfaction

	PID_5_Anhedonia	PID_5_Anxiousness	PHQ_9	SWL
DIF	0.455***	0.525***	0.480***	-0.352***
DDF	0.384***	0.423***	0.436***	-0.203**
EOT	0.136	0.208**	0.122	-0.146

* p<0,05, ** p<0,01, *** p<0,001

Independent samples T-tests

It was studied also whether there was a difference in sociodemographics as far as alexithymia (measured through TAS-20 and PAQ). The data might be useful for building a conceptual counseling framework, specifically aimed at alexithymia.

It was found that sexes differ in EOT (according to both PAQ and TAS-20, men had higher scores than women) and in DIF, where the data were heterogeneous – according to TAS-20 women had higher scores, while according to PAQ there was a difference only in regards to the positive feelings (PDIF and PDAF scales), being the men with higher scores. In addition, males had higher scores also in general alexithymia, but only according to PAQ.

In relation to the age, a difference was found between individuals under 40- and over 40-years old (latter had higher scores) only on the TAS-20's EOT, but not on the PAQ, so this should be interpreted cautiously, given the conflicting data on TAS-20's

EOT facet reported in the literature¹⁰.

Regarding education, it was found that persons with up to secondary education had higher alexithymia levels than those with higher education.

With regard to marital status, differences were found on different alexithymia facets, with the most distinct differences on the DDF facets. As expected, the married/in cohabitation had lower scores. The EOT results were intriguing since data suggested that married/in cohabitation people had higher scores than the unmarried/not in cohabitation persons. However, this was found only for the TAS-20's EOT, therefore it should be interpreted with caution, given the specifics discussed above¹¹.

Regarding employment, no statistically significant differences were found. Detailed results are presented in Table 9.

Applications of the results presented in Table 9 for counseling practice will be discussed in the next section.

Table 9. Sociodemographic differences – Alexithymia (PAQ & TAS-20)

SEX	<i>TAS20_DIF</i> : ♂(M=13.12; SD=4.02), ♀(M=14.72; SD=4.46): $t(277)=3.10$, $p=0.002$, Cohen's $d=0.374$ <i>TAS20_EOT</i> : ♂(M=20.37; SD=4.26), ♀(M=17.32; SD=3.57): $t(278)=6.51$, $p<0.001$, Cohen's $d=0.784$ <i>PAQ_PDIF</i> : ♂(M=9.73; SD=4.59), ♀(M=8.53; SD=3.89): $t(227)=2.11$, $p=0.036$, Cohen's $d=0.279$ <i>PAQ_GEOT</i> : ♂(M=25.25; SD=8.12), ♀(M=21.75; SD=8.48): $t(227)=3.19$, $p=0.002$, Cohen's $d=0.422$ <i>PAQ_PDAF</i> : ♂(M=20.95; SD=9.01), ♀(M=18.53; SD=7.67): $t(226)=2.17$, $p=0.031$, Cohen's $d=0.288$ <i>PAQ_TOTAL</i> : ♂(M=67.20; SD=23.38), ♀(M=60.67; SD=21.23): $t(218)=2.17$, $p=0.031$, Cohen's $d=0.292$
AGE	<i>TAS20_EOT</i> : Up to 40- (M=18.11; SD=4.24), Above 40-years old (M=19.28; SD=3.96): $t(274)=2.33$, $p=0.021$, Cohen's $d=0.284$
EDUCATION	<i>TAS20_EOT</i> : Up to Sec.Educ.(M=19.96; SD=4.36), High.Educ.(M=18.02; SD=3.95): $t(276)=3.71$, $p<0.001$, Cohen's $d=0.475$ <i>TAS20_TOTAL</i> : Up to Sec.Educ.(M=45.97; SD=8.83), High.Educ.(M=42.58; SD=8.28): $t(274)=3.10$, $p=0.002$, Cohen's $d=0.400$ <i>PAQ_PDIF</i> : Up to Sec.Educ.(M=10.17; SD=4.43), High.Educ.(M=8.49; SD=4.10): $t(226)=2.92$, $p=0.004$, Cohen's $d=0.397$ <i>PAQ_PDDF</i> : Up to Sec.Educ.(M=11.71; SD=5.10), High.Educ.(M=9.94; SD=4.64): $t(227)=2.71$, $p=0.007$, Cohen's $d=0.368$ <i>PAQ_GEOT</i> : Up to Sec.Educ.(M=26.11; SD=9.37), High.Educ.(M=22.04; SD=7.48): $t(155)=3.44$, $p=0.001$, Cohen's $d=0.493$ <i>PAQ_GDIF</i> : Up to Sec.Educ.(M=20.46; SD=8.10), High.Educ.(M=17.81; SD=8.00): $t(225)=2.42$, $p=0.016$, Cohen's $d=0.330$ <i>PAQ_GDDF</i> : Up to Sec.Educ.(M=23.83; SD=9.66), High.Educ.(M=20.63; SD=9.02): $t(221)=2.51$, $p=0.013$, Cohen's $d=0.345$ <i>PAQ_PDAF</i> : Up to Sec.Educ.(M=21.91; SD=8.78), High.Educ.(M=18.43; SD=7.94): $t(225)=3.08$, $p=0.002$, Cohen's $d=0.421$ <i>PAQ_GDAF</i> : Up to Sec.Educ.(M=44.51; SD=16.94), High.Educ.(M=38.20; SD=15.71): $t(218)=2.80$, $p=0.006$, Cohen's $d=0.389$ <i>PAQ_TOTAL</i> : Up to Sec.Educ.(M=70.41; SD=24.16), High.Educ.(M=60.13; SD=20.60): $t(216)=3.34$, $p=0.001$, Cohen's $d=0.467$

¹⁰ Further analysis and discussion on TAS-20's EOT will be presented in the next section, see discussion on Hypothesis 1

¹¹ See footnote 10

MARITAL STATUS ¹²	<i>TAS20_DIF</i> : Married/Cohabitation (M=13.62; SD=4.31), Not married/No cohabitation (incl. divorced) (M=14.90; SD=4.34): $t(272)=2.35$, $p=0.020$, Cohen's $d=0.296$
	<i>TAS20_DDF</i> : Married/Cohab.(M=10.53; SD=3.15), Not married/No cohab.(incl. divorced) (M=11.90; SD=3.70): $t(271)=3.24$, $p=0.001$, Cohen's $d=0.408$
	<i>TAS20_EOT</i> : Married/Cohab.(M=18.96; SD=4.13), Not married/No cohab.(incl. divorced) (M=17.90; SD=4.09): $t(273)=2.05$, $p=0.041$, Cohen's $d=0.258$
	<i>PAQ_NDDF</i> : Married/Cohab.(M=10.71; SD=5.03), Not married/No cohab.(incl. divorced) (M=12.26; SD=5.26): $t(220)=2.15$, $p=0.033$, Cohen's $d=0.304$
	<i>PAQ_PDDF</i> : Married/Cohab.(M=10.12; SD=4.72), Not married/No cohab.(incl. divorced) (M=11.58; SD=5.18): $t(225)=2.14$, $p=0.033$, Cohen's $d=0.300$
	<i>PAQ_GDDF</i> : Married/Cohab.(M=20.72; SD=9.09), Not married/No cohab.(incl. divorced) (M=23.95; SD=9.76): $t(220)=2.45$, $p=0.015$, Cohen's $d=0.346$

Linear Regression Analyses - Hypothesis 3

Single linear regression analyses were conducted to examine whether affective valence alone (i.e. PAQ's NDAF and PDAF facets) could be predictor of anhedonia and depression¹³. It was found that the difficulties in appraising negative c feelings are stronger predictor of Anhedonia than the difficulties in appraising positive c feelings (Anhedonia: **NDAF**: $F(1,92)=10.52$, $p=0.002$, $R^2_{adj}=0.09$, $R=0.32$; **PDAF**: $F(1,92)=6.31$, $p=0.014$, $R^2_{adj}=0.05$, $R=0.25$), while the opposite was true for depression (**NDAF**: $F(1,92)=8.98$, $p=0.004$, $R^2_{adj}=0.08$, $R=0.30$; **PDAF**: $F(1,92)=12.66$, $p<0.001$, $R^2_{adj}=0.11$, $R=0.35$). Applications of these findings for counseling practice will be discussed in the next section.

DISCUSSION

Hypothesis 1 was confirmed. PAQ and TAS-20 demonstrated theoretically congruent factor structures with good reliability and validity. It's worth noting that TAS-20's DIF and DDF correlated stronger with PAQ's N-DIF, N-DDF and N-DAF than with the facets measuring positive affect. This is in compliance with the already discussed about TAS-20. As far as PAQ, it's 5-factor solution confirmed instrument's capacity to assess DIF and DDF across negative and positive affect, along with EOT (with higher reliability, compared to TAS-20's EOT). These are key advantages over TAS-20. Moreover, it's important to consider not only TAS-20's EOT reliability but also its theoretical basis. TAS-20's EOT seeks to measure fantasizing capacity (although indirectly) and as already discussed, fantasizing does

not appear to be a component of alexithymia. Thus, TAS-20's EOT data should be interpreted with caution, as it attempts to measure two different constructs: externally oriented thinking (which is part of alexithymia), and fantasizing (which is a separate construct, according to the empirical data so far, see Preece, Becerra, Robinson et al., 2020; Preece & Gross, in press).

Furthermore, PAQ's total scale reliability exceeds that required for a psychometric instrument to be accepted as reliable for clinical decision making (≥ 0.90 ; Groth-Marnat, 2009). This is not the case with TAS-20, which suggests that it's a reliable and valid screening and research tool, but for diagnostics, it's more appropriate to rely on PAQ. Thus, the Bulgarian translation of PAQ should be beneficial for more comprehensive cross-cultural study on alexithymia and its role for mental health.

Hypothesis 2 was confirmed. TAS-20 had stronger positive correlations with anxiousness, anhedonia, and depression than PAQ which is in compliance with the already discussed. It's crucial for practitioners to consider this specific of TAS-20 when interpreting the results, especially if used for clinical purposes and intervention planning. As far as life satisfaction, it was found that TAS-20 correlated negatively with it, while no significant correlations were found for PAQ (neither on factor nor on facet level). The difference may be explained by TAS-20's specifics (focuses solely on negative emotions and assesses distress). These results are informative for practice in that they challenge the widely held assumption that alexithymia is associated with lower life satisfaction. It's possible that such conclusions reported in previous research (e.g. Mattila et al.,

¹² The results were similar when considering three groups (Kruskal Wallis test): Married/In cohabitation – Unmarried/Not in cohabitation – Divorced

¹³ Since no correlations were found between PAQ and Life satisfaction, regression analyses for this dependent variable were not conducted

2007) were due to the specifics of the assessment instrument rather than the phenomena per se. Further analysis of alexithymia – satisfaction with life relation is needed.

Hypothesis 3: Hypothesis 3 was partially confirmed since it was found that valence was not related to levels of life satisfaction but it was a predictor of anhedonia and depression, with positive emotions being with higher predictive value than negatives as far as depression¹⁴ was concerned, while the opposite was true for the anhedonia. This data suggests that when counseling a person with high alexithymia along with high depression the focus should be on appraising *positive feelings*, while for a person with high alexithymia along with high anhedonia therapy focus should be on appraising *negative feelings*. As far as Life satisfaction, alexithymia, assessed through PAQ, is not related to this construct. Clearly, further research using different assessment tools (including non-self-reports) is needed. If confirmed that alexithymia is not linked to lower life satisfaction, it may turn out that positive psychotherapy would be particularly effective, since it focuses on the feeling of well-being, the positive aspects of the personality and their life, and through them, on developing personal qualities and skills. Furthermore, for individuals with high alexithymia, it's already known that distress is not a motivator for engaging in psychotherapy (Terock et al., 2017) thus approaches focused on reducing distress may result ineffective.

Having examined the relations between alexithymia and four of the key mental health constructs, it can be concluded that when assessing alexithymia it's crucial to consider the valence of the emotion and to use an assessment tool that is adequate to the needs of the measurement (screening vs diagnostic). Based on these findings, as well as on an extensive literature review, a counseling framework specifically targeting alexithymia is presented below, with a focus on precise diagnostics as a key.

Proposing a counseling framework, specifically aimed at alexithymia, and tailored to affective valence:

Before initiating any counseling approach, aimed at alexithymia reduction, it's extremely important that the mental health specialist is convinced that such is present. Thus precise assessment is needed:

Step 1. General alexithymia assessment

Step 2. Facet level alexithymia assessment

Step 3. Assessing the valence of the emotion

The importance of alexithymia assessment at the very beginning of the therapy has already been emphasized (e.g., Rufer et al., 2010). When applying a self-report instrument for screening or for research purposes in Bulgarian, both TAS-20 and PAQ are suitable. As far as diagnostics and clinical decision-making, PAQ is the more optimal solution. It's important to emphasize that drawing a conclusion about the presence of high alexithymia, based only on the values of one of the facets, is not advisable. Furthermore, it's recommended high alexithymia to be assumed only when there is at least 1SD from the mean on all facets – something that the total scale score does not warrant (Lumley et al., 2007). Given these arguments, it's advisable to analyze the overall scale score along with each of the facets, and the affective valence.

Step 4. Accounting for socio-demographic characteristics

As seen in Table 9 socio-demographic characteristics have their important place when assessing alexithymia. However, different research report different data (e.g., Panayiotou, 2018; Ogrodniczuk et al., 2012), which suggests that therapists should be familiar with the normative data for the translated and adapted version of the instrument they're using for the specific language and cultural community.

In this sample it was found that men have higher total scale score alexithymia, higher externally oriented thinking, and difficulties in appraising positive affect. A number of studies have found similar results (e.g., Dimitrova, 2022). This indicates that it's important for therapists to consider these sex specifics and to make it the goal of the counseling process to help clients come closer not to the normative data in general, but to these for the respective sex.

It was also found that older age, lower education and not being married were related to higher alexithymia, i.e., it would be useful for mental health care practitioners to have the normative data not only on sex but on age, education, and family status as well, and then to take an evidence-based decision about presence or not of high alexithymia.

¹⁴ Similar results are reported recently in a study with the Russian translation of the PAQ – Larionow et al., in press.

Step 5. Planning the therapy process

In case that following steps 1 to 4 high alexithymia was found and precise information on facets and valence is gathered¹⁵, then therapy process might be planned. When doing so it's important to consider patient's individuality and, depending on the specific needs, to apply an integrative approach that can best meet them. It has been found, for example, that different approaches have different effectiveness on different facets of the construct.

High DIF values

For people with the most pronounced difficulties in identifying feelings, an intervention aimed at self-observation, recognizing bodily sensations and learning to differentiate them from the feeling may be an effective intervention (Tominaga et al., 2013). Cognitive-behavioral therapy has proven as effective in reducing DIF levels (Rufer et al., 2010). However, it hasn't been tested whether is as effective across both valences. The process can be supported by including biofeedback (Taylor et al., 1997) and neurofeedback (Kolev & Deinovich-Velichkov, 2016) as they could be very helpful not only in reducing DIF values but also in teaching the person to differentiate between positive and negative emotions and distinguish them from bodily sensations.

High DDF values

For people with the most pronounced difficulties in verbalizing feelings, it would be effective to focus on enhancing communication skills (Tominaga et al., 2013). Cognitive-behavioral therapy has proven as effective in reducing DDF levels (Rufer et al., 2010), again, it hasn't been tested if its effectiveness is maintained across both valences. Also, it's often recommended to combine individual and group therapy, since the former allows a detailed and individually modeled approach, and the latter allows practice (Taylor et al., 1997; Yilmaz et al., 2019).

Interesting data was reported regarding the potential influence of oxytocin. It has been found that oxytocin enhances socioemotional communication and is linked to sociocognitive processes that are hampered in people with high alexithymia (Samur et al., 2013). Since intranasal oxytocin intake does not lead to enhanced communication in general, but only to increased sharing of painful emotions (Lane et al., 2013), this might be of special interest as far as ver-

balizing negative affect is concerned. Thus, pharmacological stimulation is also a possibility, as long as its done only in laboratory context, at least for now.

High EOT values

For persons with the most pronounced facet value on the externally oriented thinking, an approach that supports directing attention to the emotional reaction is needed. It may include enhancing the understand that somatic reactions may be related to internal experiences, and also train the person in techniques aimed at identifying the source of the problem (Tominaga et al., 2013). Useful in this regard are third- and fourth-generation cognitive-behavioral therapies (Lumley et al., 2007), as well as the existential-humanistic approach (Yilmaz et al., 2019). Externally oriented thinking, however, can also be seen as a protective factor in certain emotionally intensive situations because it protects against excessive introspection. Therefore, there may be adverse consequences if the person is trained only to observe their inner experience without having the ability to understand and accept it (Norman et al., 2021).

CONCLUSION

The Bulgarian translations of PAQ and TAS-20 are valid and reliable instruments. Both may have wide application in screening and research, but as far as clinical decision making, PAQ is the better self-report solution. Furthermore, PAQ's more differentiated assessment might be of higher contribution for counseling planning since affective valence was confirmed to be a significant aspect in the study of alexithymia (in compliance with previous research, e.g. Panayiotou et al., 2018). Moreover, PAQ provides the opportunity to reexamine some widely accepted assumptions, like the one that alexithymia is associated with lower life satisfaction. In this way, PAQ allows a new approach to the study of alexithymia, and hence to the therapy planning.

As far as the latter, this paper provides guidance on how to carry out precise diagnostics as a crucial first step. Once diagnostic is completed, if high alexithymia is found, therapy should follow a course tailored to the facet and valence values found. A proposition was made for a counseling framework specifically aimed at alexithymia and tailored to the affective valence.

¹⁵ The psychodiagnostic interview is also a valuable tool that should not be neglected. It's recommendable to use it along with the psychometric instruments

This paper, as far as the author's knowledge, is the first attempt such framework to be formulated, thus the steps described are not intended to exhaust the variety of possible approaches. Additional research is needed. Once the framework is formulated, its effectiveness shall be evaluated to ensure that it's aimed at the transdiagnostic phenomenon of alexithymia rather than the specific symptoms of a given diagnosis (White et al., 2011).

LIMITATIONS AND SUGGESTIONS FOR FURTHER STUDIES

The sample size and characteristics don't allow generalization of the conclusions. Further research with larger samples (incl. clinical ones) is needed. Of particular interest would be the alexithymia-life satisfaction relation, studied through different types of alexithymia assessment instrument (not only self-reports – which is another limitation of this study). It's important for future research also to examine the effectiveness of different valence-tailored therapeutic approaches. This paper reviewed such potentially effective ones, however testing across heterogeneous designs and samples is needed.

REFERENCES

1. **American Psychological Association** (n.d.). *Psychology Topics*. Retrieved from <https://www.apa.org/topics/depression>
2. **Asl, E., Mahaki, B., Khanjani, S. & Mohammadian, Y.** (2020). The assessment of alexithymia across positive and negative emotions: The psychometric properties of the Iranian version of the Perth Alexithymia Questionnaire. *Iranian Journal of Psychiatry and Behavioral Sciences*, 14(4):e102317. <https://doi.org/10.5812/ijpbs.102317>
3. **Bagby, R., Parker, J. & Taylor, G.** (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)
4. **Bagby, R., Taylor, G. & Parker, J.** (1994). The twenty-item Toronto alexithymia scale-II. Convergent, discriminant, and concurrent validity. *Journal of Psychosomatic Research*, 38(1), 33-40. [https://doi.org/10.1016/0022-3999\(94\)90006-X](https://doi.org/10.1016/0022-3999(94)90006-X)
5. **Becerra, R., Baeza, C., Fernandez, A. & Preece, D.** (2021). Assessing alexithymia: Psychometric properties of the Perth Alexithymia Questionnaire in a Spanish-speaking sample. *Frontiers in Psychiatry*, 12. <https://doi.org/10.3389/fpsy.2021.710398>
6. **Bernard, J.** (2014). *Coping strategies mediate the relationship between alexithymia and health* (doctoral dissertation). Retrieved from https://digitalrepository.unm.edu/psy_etds/10
7. **Bilge, Y. & Bilge, Y.** (2020). The measurement of Attention-appraisal model of alexithymia: Psychometric properties of the Perth Alexithymia Questionnaire in Turkish. *Anadolu Psikiyatri Dergisi*, 2(2), 71-79. doi: 10.5455/apd.133183
8. **Dimitrova, T.** (2021). Alexithymia and high-risk professions – psychological care and counseling practices. *Yearbook of Sofia University "St. Kliment Ohridski". Faculty of Philosophy. Psychology*, 111, 75-123. https://research.uni-sofia.bg/bitstream/10506/2471/1/Annual_Psychology_T-111-2021.pdf
9. **Dimitrova, T.** (2022). Alexithymia: Accurate measurement and specialized interventions. Perth alexithymia questionnaire in Bulgarian sample. *Proceedings of the National School for Doctoral Students and Young Researchers in the Social Sciences*, 3, 43-54. <https://www.iphs.eu/n/images/journals/SBOR-DOKL3-FF.pdf>
10. **Dubey, A. & Pandey, R.** (2013). Mental health problems in alexithymia: Role of positive and negative emotional experiences. *Journal of Projective Psychology & Mental Health*, 20(2), 128-136. Retrieved from https://rpandeybhu.webs.com/Publications/Alx_PANAS.pdf
11. **Farhoumandi, N., Mollaey, S., Heysicattalab, S., Zarean, M. & Eyvazpour, R.** (2021). Facial emotion recognition predicts alexithymia using machine learning. *Hindawi: Computational Intelligence and Neuroscience*, Article 2053795. <https://doi.org/10.1155/2021/2053795>
12. **Groth-Marnat, G.** (2009). *Handbook of psychological assessment*. John Wiley & Sons.
13. **Hancheva, C.** (in press). Bulgarian adaptation of the DSM-5 Personality Inventory, full version for adults, normative sample. *Yearbook of Sofia University. Psychology book*, 2023
14. **Kjell, O. & Diener, E.** (2021). Abbreviated three-item versions of the satisfaction with life scale and the harmony in life scale yield as strong psychometric properties as the original scales. *Journal of Personality Assessment*, 103(2), 183-194. <https://doi.org/10.1080/00223891.2020.1737093>
15. **Kolev, D. & Deinovich-Velichkov, A.** (2016). Diagnostic and therapeutic possibilities of neuro-biofeedback therapy in the neurosciences [Abstract]. Second International Congress of Clinical Psychology. Retrieved from <https://www.native4native.com/images/files/33-66-1583398253.pdf>
16. **Kroenke, K., Spitzer, R. & Williams, J.** (2001). The PHQ-9. Validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16, 606-613. <https://doi.org/10.1046/j.1525-1497.2001.016009606.x>
17. **Krueger, R., Derringer, J., Markon, K., Watson, D. & Skodol, A.** (2013). The personality in-

- ventory for DSM-5 (PID-5)-Adult. *American Psychiatric Association*. Retrieved from https://www.psychiatry.org/File%20Library/Psychiatrists/Practice/DSM/APA_DSM5_The-Personality-Inventory-For-DSM-5-Full-Version-Adult.pdf
18. Lane, A., Luminet, O., Rimé, B., Gross, J., de Timary, P. & Mikolajczak, M. (2013). Oxytocin increases willingness to socially share one's emotions. *International Journal of Psychology*, 48(4), 676-81. doi: 10.1080/00207594.2012.677540
19. Lane, R. (2020). Alexithymia 3.0: Reimagining alexithymia from a medical perspective. *BioPsycho-Social Med* 14, Article 21. <https://doi.org/10.1186/s13030-020-00191-x>
20. Larionow, P., Preece, D., Khokhlova, O. & Iakovleva, M. (in press). Assessing alexithymia: Psychometric properties of the Russian version of the Perth alexithymia questionnaire. *Clinical Psychology and Special Education*, 12(1).
21. Levant, R., Halter, M., Hayden, E. & Williams, C. (2009). The efficacy of alexithymia reduction treatment: A pilot study. *The Journal of Men's Studies* 17(1), 75–84. Retrieved from <https://www.thefreelibrary.com/The+efficacy+of+Alexithymia+Reduction+Treatment%3A+a+pilot+study.-a0197410463>
22. Lumley, M., Neely, L. & Burger, A. (2007). The assessment of alexithymia in medical settings: Implications for understanding and treating health problems. *Journal of Personality Assessment*, 89(3), 230-246. doi:10.1080/00223890701629698
23. Mattila, A., Poutanen, O., Koivisto, A., Salokangas, R. & Joukamaa, M. (2007). Alexithymia and life satisfaction in primary healthcare patients. *Psychosomatics*, 48(6), 523-9. <https://doi.org/10.1176/appi.psy.48.6.523>
24. Nemiah, J. & Sifneos, P. (1970). Psychosomatic illness: A problem in communication. *Psychotherapy and Psychosomatics*, 18(1), 154–60. <https://doi.org/10.1159/000286074>
25. Norman, H., Marzano, L., Oskis, A. & Coulson, M. (2021). The relationship between alexithymia and self-harm: The mediating role of mindfulness. *Current Psychology*, 1-13. doi: 10.1007/s12144-021-01553-6.
26. Ogrodniczuk, J., Sochting, I., Piper, W. & Joyce, A. (2012). A naturalistic study of alexithymia among psychiatric outpatients treated in an integrated group therapy program. *Psychology and Psychotherapy: Theory, Research and Practice*, 85, 278–291. doi:10.1111/j.2044-8341.2011.02032.x
27. Panayiotou, G. (2018). Alexithymia as a core trait in psychosomatic and other psychological disorders. In C. Charis & G. Panayiotou (Eds.), *Somatoform and other psychosomatic disorders* (pp. 89-106). Springer International Publishing AG. https://doi.org/10.1007/978-3-319-89360-0_5
28. Panayiotou, G., Panteli, M. & Vlemincx, E. (2018). Processing emotions in alexithymia: A systematic review of physiological markers. In O. Luminet, R. M. Bagby, & G. J. Taylor (Eds.), *Alexithymia: Advances in research, theory, and clinical practice* (pp. 291-320). Cambridge University Press. doi:10.1017/9781108241595.018
29. Paulus, D. & Zvolensky, M. (2020). Negative Affectivity. In: V. Zeigler-Hill, & T. K. Shackelford (Eds.), *Encyclopedia of Personality and Individual Differences* (pp. 3146–3152). Springer. https://doi.org/10.1007/978-3-319-24612-3_1255
30. Popov, V., Psederska, E., Peneva, E., Bozgunov, K., Vasilev, G., Nedelchev, D. & Vasileva, J. (2016). Psychometric properties of the Bulgarian version of the Toronto alexithymia self-report scale (TAS-20). *Psychological Research*, 19(2), 25-42. Retrieved from <https://journalofpsychology.org/index.php/1/issue/view/18/59>
31. Preece, D., Becerra, R., Allan, A., Robinson, K., Chen, W., Hasking, P. & Gross, J. (2020). Assessing alexithymia: Psychometric properties of the Perth alexithymia questionnaire and 20-item Toronto alexithymia scale in United States adults. *Personality and Individual Differences*, 166, Article 110138, <https://doi.org/10.1016/j.paid.2020.110138>
32. Preece, D., Becerra, R., Allan, A., Robinson, K. & Dandy, J. (2017). Establishing the theoretical components of alexithymia via factor analysis: Introduction and validation of the attention-appraisal model of alexithymia. *Personality and Individual Differences*, 119, 341-352. <https://doi.org/10.1016/j.paid.2017.08.003>
33. Preece, D., Becerra, R., Boyes, M., Northcott, C., McGillivray, L. & Hasking, P. (2020). Do self-report measures of alexithymia measure alexithymia or general psychological distress? A factor analytic examination across five samples. *Personality and Individual Differences*, 155, Article 109721. <https://doi.org/10.1016/j.paid.2019.109721>
34. Preece, D., Becerra, R., Robinson, K., Allan, A., Boyes, M., Chen, W., ... Gross, J. (2020). What is alexithymia? Using factor analysis to establish its latent structure and relationship with fantasizing and emotional reactivity. *Journal of Personality*, 88(6), 1162-1176. <https://doi.org/10.1111/jopy.12563>
35. Preece, D., Becerra, R., Robinson, K., Dandy, J. & Allan, A. (2018). The psychometric assessment of alexithymia: Development and validation of the Perth Alexithymia Questionnaire. *Personality and Individual Differences*, 132, 32-44. <https://doi.org/10.1016/j.paid.2018.05.011>
36. Preece, D. & Gross, J. (in press). Conceptualizing alexithymia. *Personality and Individual Differences*. Retrieved from https://www.researchgate.net/publication/373101551_Conceptualizing_Alexithymia
37. Rosenberg, N., Rufer, M., Lichev, V., Ihme, K., Grabe, H-J., Kugel, H., ... Suslow, T. (2016). Ob-

- server-rated alexithymia and its relationship with the five-factor-model of personality. *Psychologica Belgica*, 56(2), 118-134. <http://dx.doi.org/10.5334/pb.302>
38. Rufer, M., Albrecht, R., Zaum, J., Schnyder, U., Mueller-Pfeiffer, Ch., Hand, I. & Schmidt, O. (2010). Impact of alexithymia on treatment outcome: A naturalistic study of short-term cognitive-behavioral group therapy for panic disorder. *Psychopathology*, 43, 170-179. doi: 10.1159/000288639
 39. Samur, D., Tops, M., Schlinkert, C., Quirin, M., Cuijpers, P. & Koole, S. (2013). Four decades of research on alexithymia: Moving toward clinical applications. *Frontiers in Psychology*, 4, 861. <https://doi.org/10.3389/fpsyg.2013.00861>
 40. Sifneos, P. (1973). The prevalence of 'alexithymic' characteristics in psychosomatic patients. *Psychotherapy and Psychosomatics*, 22(2), 255-62. <https://doi.org/10.1159/000286529>
 41. Tamarit, A., De la Barrera, U., Schoeps, K., Castro-Calvo, J., & Montoya-Castilla, I. (2022). Analyzing the role of resilience and life satisfaction as mediators of the impact of COVID-19 worries on mental health. *Journal of Community Psychology*, 51(1), 234-250. <https://doi.org/10.1002/jcop.22900>
 42. Taylor, G. & Bagby, R. (2021). Examining proposed changes to the conceptualization of the alexithymia construct: The way forward tilts to the past. *Psychotherapy and Psychosomatics*, 90, 145-155. <https://doi.org/10.1159/000511988>
 43. Taylor, G., Bagby, R. & Parker, J. (1997). *Disorders of Affect Regulation. Alexithymia in Medical and Psychiatric Illness*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511526831>
 44. Terock, J., Janowitz D., Grabe, H., Freyberger, H., Schneider, W. & Klauer, T. (2017). Alexithymia and psychotherapeutic treatment motivation: Main and interactional effects on treatment outcome. *Psychotherapy and Psychosomatics*, 86, 185-186. <https://doi.org/10.1159/000457961>
 45. Tominaga, T., Choi, H., Nagoshi, Y., Wada, Y. & Fukui, K. (2013). Relationship between alexithymia and coping strategies in patients with somatoform disorder. *Neuropsychiatric Disease and Treatment*, 10, 55-62. doi: 10.2147/NDT.S55956
 46. Veronese, G., Pepe, A., Cavazzoni, F., Obaid, H. & Perez, J. (2019). Agency via life satisfaction as a protective factor from cumulative trauma and emotional distress among Bedouin children in Palestine. *Frontiers in Psychology*, 10, Article 1674. <https://doi.org/10.3389/fpsyg.2019.01674>
 47. White, K., McDonnell, C. & Gervino, E. (2011). Alexithymia and anxiety sensitivity in patients with non-cardiac chest pain. *Journal of Behavior Therapy and Experimental Psychiatry*, 42(4), 432-439. <https://doi.org/10.1016/j.jbtep.2011.04.001>
 48. Yılmaz, O., Mirçık, A., Kunduz, M., Çombaş, M., Öztürk, A., Deveci, E. & Kırpınar, I. (2019). Does psychotherapy improve alexithymia? A comparison study among patients with mild or moderate depression. *Revista de Psihiatria Clínica* 46(6), 156-164. <https://doi.org/10.1590/0101-60830000000217>

Tanya Dimitrova - Possess a bachelor's degree in Psychology from Sofia University „St. Kliment Ohridski“ and a master's degree in Clinical and Counseling Psychology from Sofia University „St. Kliment Ohridski“. Currently a Doctoral student in Counseling psychology, Sofia University „St. Kliment Ohridski“.