

An Empirical Examination of the Association Between Alexithymia and Some Imaginal Characteristics: Theoretical and Methodological Considerations

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Abstract

Introduction: There is an ongoing debate among proponents of different alexithymia frameworks regarding whether impoverished imaginal processes constitute a core component of the alexithymia construct. The current study examined whether alexithymia was associated with fantasising for emotion regulation and a series of brief (day)dreaming indicators.

Material and methods: A total of 271 Polish participants recruited from social media platforms completed a series of measures assessing alexithymia (Toronto Alexithymia Scale-20), fantasising for emotion regulation, (day)dreaming characteristics, psychological distress and well-being. A set of correlational, exploratory and confirmatory factor analyses was used.

Results: The Polish TAS-20 is characterised by the intended 3-factor structure, with acceptable-to-excellent statistical fit indices. While alexithymia levels were weakly linked to dreaming characteristics, they were not associated with one-item measures of daydreaming frequency or daydream content. Higher levels of alexithymia were related to more frequent use of fantasising for emotion regulation. This type of fantasising, alexithymia and psychological distress were positively interrelated.

Conclusions: As a matter of clinical importance, we speculate that people high in alexithymia more frequently fantasise for emotion regulation, however, these attempts seem to be ineffective, highlighting their underlying deficits in imaginal processes. These findings ought to be considered in light of the study's limitations. Future research requires supplementing self-report alexithymia measures with other methods.

Keywords: alexithymia, daydreaming, fantasising, imaginal processes, Toronto Alexithymia Scale-20

Streszczenie

Wstęp: W badaniach nad aleksytymią trwa debata dotycząca tego, czy zubożone procesy wyobrażeniowe stanowią istotny element tego konstrukt. Celem badania było sprawdzenie, czy aleksytymia wiąże się z fantazjowaniem jako strategią regulacji emocji oraz z wybranymi wskaźnikami marzeń na jawie i marzeń sennych.

Materiał i metoda: W badaniu wzięło udział 271 osób z Polski, zrekrutowanych za pośrednictwem mediów społecznościowych. Uczestnicy wypełnili kwestionariusze dotyczące aleksytymii (Skalę aleksytymii Toronto-20), fantazjowania jako strategii regulacji emocji, marzeń na jawie i marzeń sennych, symptomów depresji i lęku oraz dobrostanu psychologicznego. Użyto analiz korelacyjnych oraz eksploracyjnej i konfirmacyjnej analizy czynnikowej.

Dyskusja: Polska wersja Skali aleksytymii Toronto-20 charakteryzowała się teoretycznie oczekiwaną 3-czynnikową strukturą oraz uzyskała akceptowalne do bardzo dobrych wskaźniki dopasowania modelu. Poziom aleksytymii był słabo związany z charakterystykami marzeń sennych, natomiast nie stwierdzono jego związku z częstotliwością ani treścią marzeń na jawie. Wyższy poziom aleksytymii wiązał się z częstszym wykorzystywaniem fantazjowania jako strategii regulacji emocji. Fantazjowanie tego typu, poziom aleksytymii oraz nasilenie symptomów depresji i lęku były ze sobą dodatnio związane.

Wnioski: Z perspektywy klinicznej można przypuszczać, że osoby o wysokim poziomie aleksytymii częściej wykorzystują fantazjowanie jako strategię regulacji emocji. Strategia ta wydaje się jednak nieskuteczna, co może odzwierciedlać deficyty w zakresie procesów wyobraźniowych. Uzyskane wyniki należy interpretować z uwzględnieniem ograniczeń badania. Dalsze badania powinny wykraczać poza samoopisowe miary aleksytymii.

Słowa kluczowe: aleksytymia, marzenie na jawie, fantazjowanie, procesy wyobraźniowe, Skala aleksytymii Toronto-20

1. Introduction

1.1. The alexithymia construct and its theoretical models

Alexithymia is a personality trait classically defined by a multicomponent constellation of interrelated features, including (1) difficulty identifying feelings (DIF), (2) difficulty describing feelings (DDF), (3) an externally oriented or stimulus-bound thinking style (EOT), and (4) impoverished imaginal processes/activity [1,2]. Although more than fifty years have passed since the alexithymia construct was first introduced primarily within the fields of psychiatry and psychosomatic medicine, over the subsequent years it has attracted increasing interest among researchers and clinicians in clinical and health psychology, as well as in cognitive and affective sciences [2]. Clinical observations, theoretical analyses, and empirical research have led to the development of multiple conceptualisations of alexithymia and its measurement models. While these frameworks share several core assumptions, they also differ in important ways that may not yet be fully recognised in research and clinical practice.

In the field of alexithymia, three major theoretical frameworks of the alexithymia construct can be distinguished: the original, affect-deficit model [3], the cognitive-affective model [4], and the attention-appraisal model [5]. While all models treat DIF, DDF, and EOT as core components of the construct, an impoverished fantasy life is regarded as a core component in two models: the affect-deficit model [6] and the cognitive-affective model [4]. An additional component — emotionalising or low emotional reactivity — was also included in the cognitive-affective model [4]. Although the significant body of current empirical evidence and theoretical debates suggest against including low emotional reactivity in the construct [5-8], the status of constricted imaginal processes has become increasingly debatable [6,7]. Although alexithymia was classically defined as including a paucity of fantasy [1,2], its current measurement models often focus on the other three facets of alexithymia (i.e., DIF, DDF and EOT; please see notes below about measuring constricted imaginal processes with EOT by proxy). Therefore, there is a pressing need for studies examining whether impoverished fantasy life can be treated as a salient component of the alexithymia construct.

1.2. Alexithymia and daydreaming

Constricted imaginal processes (i.e., a paucity of fantasy) are considered an essential part of the alexithymia construct in the affect-deficit model [6] and the cognitive-affective model [4]. This paucity of fantasies is mostly operationalised as infrequent daydreaming and imagination. Such characteristics are measured with items from the Toronto Structured Interview for Alexithymia (TSIA) and the Fantasising subscale of the Bermond-Vorst Alexithymia Questionnaire (BVAQ) [4]. The BVAQ statements (e.g., “I have few daydreams and fantasies”, “I like to think up unusual imaginative stories” or “I have little interest in fantasies and weird stories”) seem to assess the general tendency to fantasise, which is in the focus of measurement [4]. Similarly, the 26-item Toronto Alexithymia Scale (TAS-26) [9], which was subsequently revised into the TAS-20 [10], included items assessing the frequency and importance of daydreaming (e.g., “Daydreaming is a waste of time”, “I daydream rarely”, “I use my imagination a great deal” or “I often daydream about the future”) [9]. The TSIA contains questions about the participant’s degree or capacity of engagement in fantasies and other imaginal characteristics (i.e., vividness) or activities like being “absorbed in thinking about the characters in novels or movies, or in the reliving of past experiences” [11].

It is important to note that the term “constricted imaginal processes” is multifaceted, encompassing numerous interrelated characteristics [11]. Preece and Gross within the framework of the attention-appraisal model suggest that daydreaming seems to have two forms: adaptive daydreaming (e.g., creative, rich, and vivid fantasy experiences), which is associated with positive mental health outcomes, and maladaptive daydreaming (e.g., excessive mind-wandering), which is linked to negative outcomes [7]. Although recent work has articulated the variation in the definitions of fantasising features over time [11], some researchers have raised questions about whether or which specific constricted imaginal characteristics are indicative of alexithymia [7]. The original clinically based affect-deficit model posits that the depth, richness, symbolic elaboration, vividness and qualitative features of fantasy life are impaired in alexithymia [6,11], with such phenomena being difficult to capture using brief self-report methods.

1.3. Alexithymia and fantasising for emotion regulation

There is a close relationship between fantasies and emotions [6]. Although Taylor and colleagues never explicitly claimed that fantasising can be used for emotion regulation [6], such a presumption was made by Preece and colleagues [7]. The proponents of the attention-appraisal model [5,7,8] conducted a series of self-report studies, examining the links between emotionalising, fantasy characteristics, including use of fantasy for emotion regulation, and alexithymia. Their factor analytic studies supported their notion that alexithymia comprised three components (DIF, DDF, and EOT), without poor fantasy life and low emotional reactivity considered the fourth and fifth components in the respective competing models. In these studies, higher levels of alexithymia were associated with more frequent daydreams and more use of daydreaming to regulate emotions [7,8]. However, not all imaginal characteristics were associated with higher alexithymia. The higher levels of positive emotion daydreams (e.g., “My daydreams often leave me with a warm, happy feeling”) and daydream strangeness (e.g., “Most of my daydreams are about really unusual people or about events that could hardly ever happen”) were associated with lower levels of alexithymia when controlling for demographics and other fantasy and emotional reactivity characteristics [8]. In contrast, Preece and Gross reported bivariate correlation analysis that demonstrated positive associations between alexithymia scores (as measured by the TAS-20 and PAQ) and fantasising characteristics (i.e., fear, achievement, revenge, vividness, strangeness, guilt and sexual daydreams, as well as mind-wandering) [7]. As such, different types of analyses produce different patterns of correlations.

Overall, Preece and Gross concluded and implied that daydreaming acts as a form of effortful emotional avoidance, and fantasising was not a component of the alexithymia construct [7]. However, the affect-deficit model offers a different reading of the same finding: the fantasising captured by the Emotion Regulation Questionnaire-Fantasising may reflect superficial, stereotyped imaginal activity — the kind of banal fantasy (e.g., imagining oneself in a better time and place) that Taylor et al. consider characteristic of alexithymia, rather than the deep, symbolically elaborated imaginal life whose absence defines constricted imaginal processes [11]. It should be highlighted that Preece and colleagues’ concept of “fantasising for regulation” (or coping via “escape through fantasy”) is fundamentally different from the original concept of “imaginal capacity” (fantasising as a mental ability or richness) in the affect-deficit model

[6]. Importantly, Preece et al. [7,8] did not use mental health indicators in their studies assessing links between alexithymia and imaginal processing, and therefore, the (mal)adaptive role of different imaginal features in mental health in a common correlational space was not determined. Hence, even if one treats fantasising solely as a regulatory tool, it is not clear whether and which imaginal characteristics were adaptive or maladaptive for overall mental health. The lack of these data makes difficult our understanding of whether alexithymia is associated with constructive or dysfunctional fantasising.

1.4. An attempt to remove the imaginal activity component from the alexithymia construct

While Preece and Gross proposed a refinement of the alexithymia construct based on a small number of self-report correlational studies in online non-clinical samples [7], this body of evidence is insufficient to reconsider the construct, as indicated by Taylor et al. [6]. Preece and Gross used the argument that the proponents of the original affect-deficit model deleted the fantasy items from the TAS-26 suggesting that these items did not cohere statistically with the DIF, DDF or EOT items [7]. In this regard, two relevant notes should be elucidated. First, Taylor et al. highlighted that the construct of imaginal capacity is not well captured by self-report methodologies [6], nor even by structured interview methods [11]. Therefore, self-report measures may be poorly suited to capturing qualitative depth or symbolic elaboration so central to the original, affect-deficit model. The difference between a superficial or avoidant fantasy and creative or constructive imagination may not be captured adequately. As such, relying exclusively on self-report measures to suggest that the constricted imaginal processes are not part of the construct is of limited inference. Second, the TAS-20 is considered to assess a paucity of fantasies by proxy, without the need of a separate fantasy subscale. Thus, if a person’s thinking is “stimulus-bound” (i.e., expressed in a higher level of EOT) — focused entirely on the concrete, external world — then, logically the person does not (or cannot) engage in deep, internal fantasy [6,11,12].

The assessment of fantasising is complex and raises several methodological challenges. First, making an attempt at examining such fantasising experiences in a quantitative way is difficult to achieve. While the frequency of daydreaming seems to be easy to measure with self-report tools, other daydreaming features like the quality of fantasies are difficult to evaluate [11]. Secondly, when assessing the paucity of fantasies, the content of fantasies may be even more important than their frequency. For instance, Taylor et al. mentioned that poor, banal or mundane fantasies (e.g., winning the

lottery) are indicative of people with high EOT [11]. A lack of emotion in daydreams or a lack of creative content can be also treated as features of a poor inner life [11]. As for fantasising to regulate emotions, a simple imagination of oneself “in a better time and place”, without direct effort aimed at modifying emotional experiences, appears to be one of the simplest ways of using imagination. In terms of psychological depth, however, such efforts seem to be superficial and rather reflect an avoidant-type emotion regulation strategy than a way of creative work with one’s mind. Such fantasies can be effortlessly produced due to their banal, uncreative content and essentially mundane character. In contrast, deep, rich fantasies that require mental effort seem to be impaired in alexithymia. For instance, this notion was empirically demonstrated by Bagby et al. who indicated that when people high in alexithymia engage in daydreaming, “it is likely to be characterized by guilty or dysphoric fantasy, rather than by fantasies that are constructive, wishful, and fulfilling” [13, p. 32].

1.5. Alexithymia and dreaming

At the time of the origin of the alexithymia construct, rare dreaming and a striking absence of fantasy [14], as well as poor dream recall [9], were described as core characteristics of alexithymia. For instance, items on poor dream recall were included in the development pool when creating the TAS-26 [9]. Previous studies indicated that dreaming characteristics are slightly associated with alexithymia or not related to the overall alexithymia score, with alexithymia facets showing differential associations with dreaming variables [15-23].

While a range of dreaming characteristics have been assessed (e.g., frequency of dreaming, emotionality of dreams, dream recall, meaningfulness of dreams), the link between alexithymia and dreaming is still not clear. This is complicated by the fact that these variables were evaluated with different measures, study designs as well as statistical procedures. Moreover, many studies selectively reported total TAS-20 scores or subscale scores, making comparative analysis difficult to conduct. Accordingly, findings on the link between alexithymia and dreaming characteristics are not consistent. Despite these challenges, small effect size associations have been found between alexithymia and aspects indicative of imaginal activity (i.e., fantasising, dreaming and daydreaming) [15-23].

1.6. The present study

The present study was designed as a focused, self-report investigation of where a narrow set of fantasy-related and dreaming-related variables sits in relation to alexithymia in a non-clinical sample. Specifically, we

examined whether self-reported fantasising for emotion regulation and brief indicators of (day)dreaming are associated with TAS-20 total and facet scores. Thus, the study represents a modest attempt to clarify what can and cannot be inferred from brief self-report operationalisations when evaluating recent claims about the boundaries of the alexithymia construct. Importantly, the present work does not test imaginal capacity, or the qualitative richness of fantasy life as articulated in classical clinical formulations, but instead only examines how the specific operational definitions used in the research behave empirically in relation to TAS-20 alexithymia.

Consistent with prior work, alexithymia was assessed using the TAS-20 and examined in relation to fantasising for emotion regulation. Although this element of the design overlaps with earlier correlational studies in non-clinical samples, the present study is best viewed as a constrained, pragmatic examination of construct boundaries using a deliberately brief assessment approach. Considering the limits of past work, we included a set of negative and positive mental health indicators to determine the contribution of fantasising for emotion regulation to overall mental health, discovering its adaptive versus maladaptive role relative to alexithymia in a common analytic space.

To extend fantasy-related coverage beyond fantasising for emotion regulation, we also included a small set of simple questions assessing daydreaming and nocturnal dreaming. These indicators were selected as face-valid correlates frequently referenced in the literature, but they cannot capture qualitative aspects of imaginal processes such as symbolic elaboration, depth, or imaginative richness. Accordingly, the value of this design lies in clarifying what commonly used self-report operationalisations do and do not demonstrate in a convenient online sample, and in identifying measurement gaps that should be addressed in future studies using broader test batteries and multi-method approaches.

2. Materials and Methods

2.1. Procedure

This study was implemented according to the Declaration of Helsinki Ethical Principles, and the ethics approval was granted by the Ethics Committee of the Faculty of Psychology of the Kazimierz Wielki University (Reference: 4/10.06.2025). The study participants were recruited via Instagram and Facebook using posts featuring a link to an online anonymous survey hosted on the Google Forms platform. All participants provided written informed consent.

Our predefined inclusion criterion was Polish-speaking people aged 18 years or over, who signed

informed consent, whereas our predefined exclusion criteria were inattentive responding, and missing or incorrect data. To obtain high quality data, we used a series of attentive check questions in the form of an instructed response item [24], with at least one incorrect reply leading to the exclusion of the participant from the analyses. There were no missing data. Given that the questions in the demographic forms required short written answers (like indicating an age in years, etc.), we carefully inspected the data for inconsistencies. A total

of 288 respondents replied to the consent form, and after applying our eligibility criteria, 271 participants were qualified for our final analysis.

2.2. Participants

The study included 271 participants (165 females, 104 males, and 2 other gender categories) from the general population of Poles. The mean participants' age was 32.70 years ($SD = 12.75$), with a range from 18 to 72. Table 1 demonstrates an overview of all assessed demographic

Table 1. Demographic characteristics of the study sample

Characteristics	Categories	<i>n</i>	%
Gender	Females	165	60.89
	Males	104	38.38
	Other	2	0.74
Area of residence	Villages	61	22.51
	Small towns (up to 20000 inhabitants)	27	9.96
	Towns (from 20000 to 100000)	57	21.03
	Large cities (above 100000)	126	46.49
Education	Primary	8	2.95
	Vocational	5	1.85
	Secondary	136	50.18
	Higher	122	45.02
Relationship status	Single	120	44.28
	In relationships	151	55.72

characteristics.

2.3. Measures

2.3.1. Demographic form

We used a standard demographic form to collect data on gender, age, area of residence, education, and relationship status. After providing informed consent, the study participants completed this demographic form, along with a battery of self-report questionnaires and standalone questions. A total of 7 invalid replies (due to reporting imprecise numbers of nights [e.g., using the term "often" instead]) were obtained from participants in responses to a question on disturbing dreams (see Section 2.3.2). Therefore, a total of 264 valid responses on this question were analysed. Other questions had no invalid responses. The initial version of the study did not consist of the daydreaming form (see Section 2.3.3). After collecting 57 responses, this form was added to the study. As such, this form was presented only to 231 participants, with 219 responses being considered valid in accordance with the respective eligibility criteria.

2.3.2. Dreaming form

In order to assess several key characteristics of nocturnal dreaming, we used a slightly modified set of

questions on dreaming, originally developed by Lumley and Bazydło [18]. This set was modified in order to better adapt it linguistically to a Polish context; it comprised the following four questions (for direct comparisons between the original and our versions, refer to Lumley and Bazydło's study [18, p. 564]).

First, *nights with dreams* were explored by asking our respondents the following: "How often during a typical week do you dream at night?". Possible answers ranged from 0 (*never*) to 7 nights.

Secondly, *nights with dreams without details* were examined using a question "How often during a typical week do you feel that you dream at night, but cannot remember your dreams?". Possible answers ranged from 0 (*never*) to 7 nights.

Thirdly, *disturbing dreams* were assessed by asking our participants the following: "During the last 30 nights, how many times have you had a dream or dreams that were disturbing enough to wake you up?". Possible answers ranged from 0 to 30 nights.

Finally, *dream meaningfulness* was evaluated with a statement "I think that dreams are important in people's lives", which was rated on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

2.3.3. Daydreaming form

We were interested in assessing the frequency of daydreaming and its content. To examine these experiences, we used a set of three questions. The frequency of daydreaming was assessed by a question: “How often during a typical week do you daydream?”. Possible answers ranged from 0 (*never*) to 7 days.

To assess the content of daydreams (ordinary versus strange), our participants were asked the following “How often do you daydream about everyday and ordinary things?” and “How often do you daydream about unusual and unbelievable things?”. Possible answers for both questions ranged from 1 (*[almost] never*) to 5 (*[almost] always*).

2.3.4. The Toronto Alexithymia Scale (TAS-20)

The TAS-20 is a 20-item self-report measure of alexithymia [10]. The scale consists of three subscales: DIF (e.g., “I am often confused about what emotion I am feeling”), DDF (e.g., “It is difficult for me to find the right words for my feelings”), and EOT (e.g., “I prefer talking to people about their daily activities rather than their feelings”). Items are scored on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores indicating a higher level of alexithymia. The creators of the TAS-20 suggest computing only the total TAS-20 score [25], however, many researchers and the TAS-20 creators also calculate subscale scores [26]. Accordingly, for completeness and comparability reasons, we computed both subscale and total scores. The TAS-20 cut-off scores (i.e., ≤ 51 , 52–60, and ≥ 61) were used to determine the levels of alexithymia (i.e., low alexithymia, probable alexithymia or high alexithymia) [3] in the current sample. In this study, the Polish version of the TAS-20 was used [27].

2.3.5. The Emotion Regulation Questionnaire-Fantasing (ERQ-F)

The ERQ-F is a 6-item self-report measure of fantasising as an emotion regulation strategy [8]. Items (e.g., “When I want to feel less *negative* emotion (such as sadness or anger), I daydream or imagine myself in a better time and place”; “When I want to feel more *positive* emotion, I daydream about the perfect future”) are rated on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*), with higher scores indicating a higher level of strategy use. The original English version of the ERQ-F consists of a total score, representing the overall tendency to regulate both negative and positive emotions.

In the Polish ERQ-F [28], which was used in this study, along with the total ERQ-F score, two emotional valence-specific subscales can be calculated. These are negative-fantasising (i.e., fantasising to *decrease negative*

emotions) and positive-fantasising (i.e., fantasising to *increase positive* emotions) subscales, representing two emotion regulation strategies, with potentially less or more favourable mental health effects. The latter strategy seems to be related to worse mental health outcomes. In contrast, fantasising aimed at decreasing negative emotions seems to be associated with better mental health outcomes [28]. In the present study, we computed both subscale scores and the total score [28].

2.3.6. The Patient Health Questionnaire-4 (PHQ-4)

The PHQ-4 is a 4-item self-report measure of anxiety and depression symptoms over the previous two weeks [29]. The questionnaire consists of two subscales (i.e., anxiety and depression) as well as a total score, representing general psychological distress. Items (e.g., “Feeling nervous, anxious, or on edge”; “Little interest or pleasure in doing things”) are rated on a 4-point Likert scale from 0 (*not at all*) to 3 (*nearly every day*), with higher scores indicating higher levels of psychopathology symptoms. The Polish version of the PHQ-4 was used [30].

2.3.7. The World Health Organization-Five Well-Being Index (WHO-5)

The WHO-5 is a 5-item self-report measure of psychological well-being over the previous two weeks [31]. Items (e.g., “I have felt calm and relaxed”) are rated on a 6-point Likert scale from 0 (*at no time*) to 5 (*all of the time*), with higher scores indicating a higher level of well-being. A total WHO-5 score is calculated. The Polish version of the WHO-5 was used [32].

2.4. Analytic strategy

The data were prepared for analyses using *LibreOffice* 25.8.4.2, whereas main statistical analyses were carried out using *JASP* 0.19.3 [33]. We calculated descriptive statistics and assessed internal consistency reliability using McDonald’s omega and Cronbach’s alpha coefficients with their 95% confidence intervals (95% CIs). Values of these coefficients ≥ 0.70 were considered acceptable [34].

To assess the model fit of the TAS-20 in these data, we used confirmatory factor analysis, which was conducted in *R* 4.5.2 with the *lavaan* 0.6-21 package [35]. This analysis was based on the diagonally weighted least squares (DWLS) [36] estimator. We assessed the intended and well-validated 3-factor model of the TAS-20, consisting of DIF, DDF and EOT factors [37]. The model fit was evaluated based on the commonly used fit indices: comparative fit index (CFI) and Tucker–Lewis index (TLI), with their values of ≥ 0.90 indicating an acceptable fit and ≥ 0.95 suggesting an excellent fit, as well as root mean square error of approximation (RMSEA) and standardised root mean square residual (SRMR), with their values of ≤ 0.08 indicating an acceptable fit and ≤ 0.06 suggesting an

excellent fit [38]. Factor loadings of ≥ 0.40 were considered salient [39].

Pearson correlations were calculated to evaluate relationships between the questionnaire subscale variables. Spearman correlations were computed between the questionnaire variables and variables being measured with a single item. Correlation coefficients from 0.00 to 0.09 represent a trivial effect size; from 0.10 to 0.29 (a small effect size); from 0.30 to 0.49 (a medium effect size); and 0.50 and above (a large effect size) [40].

The aim was to examine the underlying structure, separability and interrelationships of the studied variables (i.e., alexithymia, fantasising for emotion regulation and mental health indicators). We conducted an exploratory factor analysis [41] of the TAS-20, ERQ-F, PHQ-4 and WHO-5 scores. The number of factors to extract was determined on the basis of parallel analysis established on the polychoric correlation matrix and factor eigenvalues. Other factor analysis parameters included the principal axis factoring method and promax rotation. The Kaiser-Meyer-Olkin (KMO) test and Bartlett’s test were used to assess the factorability of our data. The KMO value of > 0.50 and a significant Bartlett’s test with at least a p-value of < 0.05 were treated as indicators of appropriateness of the data used for factor analysis [42].

3. Results

3.1. Descriptive statistics and psychological characteristics of the study sample

Table 2 displays the descriptive statistics for the study

variables. Internal consistency reliability estimates were calculated for the questionnaires used. Questionnaire variables were relatively normally distributed (max. abs. skewness = 0.47). The reliability was acceptable for all questionnaire scores, except the EOT subscale, which had low reliability due to its multidimensional nature (for review, see [25,26]). The 3-factor TAS-20 model had a good fit to the data ($X^2(167) = 326.522$, CFI = 0.990, TLI = 0.988, RMSEA = 0.059 [90% CI: 0.050; 0.069], SRMR = 0.072). Standardised factor loadings for all TAS-20 items were salient (≥ 0.40), except for items 5 (0.31), 16 (0.28), and 20 (0.36), which were treated as marginally salient.

In terms of alexithymia distribution, the sample was diverse. A total of 157 people (57.93% of the entire sample) had no alexithymia (TAS-20 total scores ≤ 51), 52 participants (19.19%) had probable alexithymia (TAS-20 total scores from 52 to 60), and 62 respondents (22.88%) had alexithymia (TAS-20 total scores ≥ 61).

One-item questions from the (day)dreaming forms were also relatively normally distributed, except the disturbing dream variable (skewness = 3.38; kurtosis = 14.69). On average, participants experienced dreams 3.69 nights/per week; they did not remember details of dreams about 2.61 nights/per week. They rarely had disturbing dreams, with approximately 2 nights with nightmares/per 30 days. The participants deemed that dreams were rather important in people’s lives. Regarding daydreaming, on average, the participants daydreamed about 3.76 days/per week, with more frequent daydreams about ordinary things ($M = 3.11$) than unusual ones ($M = 2.76$).

Table 2. Descriptive statistics and internal consistency reliability estimates for the study variables

Variables	<i>n</i>	McDonald’s omega (95% CI)	Cronbach’s alpha (95% CI)	<i>M</i>	<i>SD</i>	Skewness	Kurtosis	Min.	Max.
One-item variables									
Nights with dreams	271	–	–	3.69	2.36	0.13	-1.34	0.00	7.00
Nights dreamed without details	271	–	–	2.61	2.04	0.75	-0.31	0.00	7.00
Disturbing dreams	264	–	–	2.43	4.22	3.38	14.69	0.00	30.00
Dream meaningfulness	271	–	–	3.71	1.07	-0.53	-0.37	1.00	5.00
Frequency of daydreaming	219	–	–	3.76	2.60	-0.01	-1.54	0.00	7.00
Daydreaming about ordinary things	219	–	–	3.11	1.25	-0.24	-0.95	1.00	5.00
Daydreaming about strange things	219	–	–	2.76	1.35	0.05	-1.26	1.00	5.00

Questionnaire variables									
TAS-20 Difficulty Identifying Feelings	271	0.89 (0.87; 0.91)	0.89 (0.87; 0.91)	18.32	7.00	0.22	-0.97	7.00	34.00
TAS-20 Difficulty Describing Feelings	271	0.80 (0.76; 0.84)	0.79 (0.75; 0.83)	13.85	4.80	0.27	-0.86	5.00	25.00
TAS-20 Externally- Oriented Thinking	271	0.55 (0.47; 0.63)	0.59 (0.52; 0.66)	17.30	4.38	0.06	-0.57	8.00	28.00
TAS-20 Total score	271	0.88 (0.86; 0.90)	0.87 (0.85; 0.89)	49.46	13.08	0.20	-0.78	20.00	78.00
ERQ-F Negative- fantasising	271	0.87 (0.84; 0.89)	0.86 (0.83; 0.90)	12.14	5.48	-0.08	-1.10	3.00	21.00
ERQ-F Positive- fantasising	271	0.85 (0.82; 0.88)	0.85 (0.82; 0.88)	12.00	5.36	-0.08	-1.04	3.00	21.00
ERQ-F Total score	271	0.92 (0.91; 0.94)	0.92 (0.91; 0.94)	24.14	10.44	-0.09	-0.99	6.00	42.00
PHQ-4 Anxiety	271	0.77 (0.70; 0.82)	0.77 (0.70; 0.82)	3.13	1.81	0.25	-1.11	0.00	6.00
PHQ-4 Depression	271	0.80 (0.75; 0.84)	0.80 (0.75; 0.84)	2.64	1.93	0.47	-0.96	0.00	6.00
PHQ-4 Total score	271	0.85 (0.82; 0.88)	0.85 (0.82; 0.88)	5.77	3.43	0.37	-0.97	0.00	12.00
WHO-5 Total score	271	0.85 (0.82; 0.88)	0.85 (0.82; 0.88)	9.32	4.77	0.40	-0.30	0.00	25.00

Note. For one-item variables, reliability estimates cannot be calculated.

3.2. Links between alexithymia and (day)dreaming

Spearman correlations between alexithymia and (day)dreaming were computed (see Table 3). We noted that the total TAS-20 score was positively related to nights with undetailed dreams and frequent disturbing dreams (nightmares) but was not correlated with any daydreaming variables. In terms of alexithymia facets, higher DIF and DDF were associated with more nights dreamed without details and more frequent disturbing dreams. Only the DIF facet was positively associated with the frequency of daydreaming, and the tendency to daydream about strange things. The EOT facet was negatively related to dream meaningfulness and to daydreaming about ordinary things.

Overall, alexithymia and its facets, as measured with the TAS-20, seemed to be positively related to unfavourable dreaming (i.e., dreams without details and disturbing dreams). In contrast, the TAS-20 total score demonstrated no significant links to daydreaming, but TAS-20 subscales did show significant associations, with the most prominent correlation between DIF and the frequency of daydreaming ($r_S = 0.18, p < 0.01$; see Table 3).

3.3. Links between alexithymia, fantasising and mental health correlates

We computed Pearson correlations between alexithymia and fantasising as an emotion regulation strategy, and other mental health correlates (see Table 4). We noted that alexithymia was positively related to fantasising for emotion regulation. As expected, alexithymia was strongly positively related to anxiety and depression symptoms, and moderately negatively associated with well-being.

3.4. Examining the latent structure of the constructs

The KMO test (0.68) and Bartlett's test ($X^2(28) = 1071.16, p < 0.001$) indicated that the data were suitable for our exploratory factor analysis. This analysis extracted three meaningful factors, explaining 66.79% of the total variance: Factor 1 "Psychological distress", Factor 2 "Fantasising for emotion regulation", and Factor 3 "Alexithymia" (see Table 5).

Factor 1 included the two PHQ-4 subscale scores (i.e., anxiety and depression symptoms) with strong positive factor loadings, and the well-being variable, with the

Table 3. Spearman correlations between alexithymia and (day)dreaming

Variables	TAS-20 Difficulty Identifying Feelings	TAS-20 Difficulty Describing Feelings	TAS-20 Externally-Oriented Thinking	TAS-20 Total score
Dreaming variables				
Nights with dreams ($n = 271$)	0.04	0.04	-0.04	0.02
Nights dreamed without details ($n = 271$)	0.18**	0.14*	0.02	0.16**
Disturbing dreams ($n = 264$)	0.19**	0.14*	0.01	0.16*
Dream meaningfulness ($n = 271$)	0.07	0.05	-0.17**	0.00
Daydreaming variables				
Frequency of daydreaming ($n = 219$)	0.18**	0.09	-0.08	0.09
Daydreaming about ordinary things ($n = 219$)	0.11	0.00	-0.14*	0.02
Daydreaming about strange things ($n = 219$)	0.15*	0.09	-0.05	0.08

Note. * $p < 0.05$; ** $p < 0.01$.

Table 4. Pearson correlations between alexithymia and its correlates ($n = 271$)

Variables	TAS-20 Difficulty Identifying Feelings	TAS-20 Difficulty Describing Feelings	TAS-20 Externally-Oriented Thinking	TAS-20 Total score
ERQ-F Negative-fantasising	0.26***	0.20***	-0.02	0.21***
ERQ-F Positive-fantasising	0.27***	0.24***	-0.00	0.23***
ERQ-F Total score	0.28***	0.23***	-0.01	0.23***
PHQ-4 Anxiety	0.42***	0.29***	0.04	0.34***
PHQ-4 Depression	0.46***	0.39***	0.08	0.42***
PHQ-4 Total score	0.48***	0.37***	0.06	0.42***
WHO-5 Total score	-0.31***	-0.28***	-0.04	-0.28***

Note. *** $p < 0.001$.

Table 5. The factor loadings from the exploratory factor analysis of subscale scores of the TAS-20, ERQ-F, PHQ-4, and the WHO-5 total score ($n = 271$)

Variables	Factor 1 "Psychological distress"	Factor 2 "Fantasising for emotion regulation"	Factor 3 "Alexithymia"
TAS-20 Difficulty Identifying Feelings	0.20	0.13	0.72
TAS-20 Difficulty Describing Feelings	0.06	0.08	0.86
TAS-20 Externally-Oriented Thinking	-0.07	-0.06	0.38
ERQ-F Negative-fantasising	-0.06	0.95	-0.02
ERQ-F Positive-fantasising	-0.02	0.92	-0.01
PHQ-4 Anxiety	0.74	0.12	-0.03
PHQ-4 Depression	0.96	-0.06	0.01
WHO-5 Total score	-0.70	0.11	0.01
Eigenvalues	3.21	1.73	1.25
The proportion of total variance for the rotated solution (%)	25.65	22.56	18.58

Note. Factor loadings ≥ 0.30 are in bold.

strong negative loading; therefore, we called this factor “psychological distress”. Each factor had strong factor loadings ≥ 0.40 , with a slightly lower loading for EOT in the “alexithymia” factor. None of the factors had cross-loadings. The correlation between Factor 1 “Psychological distress” and Factor 2 “Fantasising for emotion regulation” was 0.23; the correlation between Factor 1 “Psychological distress” and Factor 3 “Alexithymia” was 0.42; the correlation between Factor 2 “Fantasising for emotion regulation” and Factor 3 “Alexithymia” was 0.20.

4. Discussion

The purpose of this study was not to resolve the broader theoretical controversy concerning imaginal capacity in alexithymia, but to examine, in a transparent and constrained way, how a narrow set of self-report fantasy-related and dreaming-related indicators behave empirically in relation to TAS-20 alexithymia and brief indices of distress and well-being. Within the limits of this design, we asked whether fantasising for emotion regulation and brief (day)dreaming indicators function as correlates of alexithymia or show evidence of behaving like defining indicators of its latent structure when analysed alongside TAS-20 facets. Nocturnal dreaming variables were included because dream-related characteristics have historically been mentioned in discussions of imaginal functioning, but they are treated here as exploratory correlates rather than as tests of imaginal depth or qualitative richness.

4.1. Alexithymia and dreaming characteristics

While considered less common, differences in the content of nighttime dreams and the ability to recall such dreams have been treated as correlates or even essential features of constricted imaginal processes [9,14,43]. In the present study, we examined the strength of associations between nighttime dream-related features and alexithymia. The study results demonstrated that while overall alexithymia (the total TAS-20 score) was not associated with the number of nights with dreams and dream meaningfulness (or dream importance), it was linked to a higher number of nights with dreams without details and more disturbing dreams.

Interestingly, our results replicated the 25-year-old findings by Lumley and Bazydło [18], strengthening this evidence. Across the TAS-20 scores, only EOT was associated with the belief in dream meaningfulness; that is, people who paid less attention to emotions and were characterised by a pragmatic, operational style of thinking tended to believe that dreams were less important in people’s lives, supporting Lumley and Bazydło’s conclusions [18]. The alexithymia construct is best represented by the total TAS-20 score, being the

most reliable and valid indicator of alexithymia [25]. Accordingly, when interpreting results, the most robust evidence is obtained with the total TAS-20 score. In this regard, our patterns suggest that people with high alexithymia indeed tended to have more nights dreamed without details and more nightmares, highlighting the presence of disturbances of cognitive-affective processing of emotions in people high in alexithymia.

4.2. Alexithymia and daydreaming characteristics

The frequency of daydreaming has been emphasised by proponents of the attention-appraisal model as a prominent imaginal characteristic inversely related to alexithymia [7,8]. However, proponents of the original, affect-deficit model maintain that daydreaming frequency is less important than the qualitative richness and symbolic depth of imaginal life [6,11]. Our correlational analysis results indicated that the frequency of daydreaming and its content (fantasising about ordinary versus strange things) were not associated with alexithymia, as measured with the total TAS-20 score. Interestingly, while looking at TAS-20 subscales, individual facets of alexithymia (i.e., DIF and EOT) demonstrated weak, but both positive and negative links to daydreaming characteristics.

These results should be interpreted in light of the methodology used and its limitations. We used single-item indicators for the daydreaming construct rather than a broader battery of psychometric tools for measuring imaginal processes. For instance, we could not use the Daydreaming Frequency Scale [44], which was not available in Polish. We are currently working on its translation to use in future research. We were interested in asking simple questions about daydreaming frequency, with a clearly operationalised response scale measuring days with daydreaming experiences per week (rather than using an aggregated subscale score, containing heterogeneous content). While our one-item variables might be treated as simplistic, they were deemed appropriate for our preliminary examination. In general, our results demonstrated a high level of complexity of interrelationships between alexithymia facets and (day) dreaming variables. Consequently, future studies should use an expanded set of psychometric tools along with one-item variables where reasonable, with supplementation of interview or performance-based methods, to uncover the role of fantasising deficits in alexithymia.

4.3. Alexithymia and fantasising for emotion regulation

The central focus of this paper was to examine whether fantasising for emotion regulation was associated with alexithymia and mental health correlates in a common correlational space. We noted that fantasising

for emotion regulation was positively related to the total TAS-20 score ($r = 0.23, p < 0.001$), potentially suggesting that people with higher alexithymia tended to use more daydreaming as a strategy to regulate their emotions. This association between the TAS-20 and ERQ-F was examined in Preece and Gross's paper using the same methodology (i.e., Pearson correlations), with a very close magnitude of the correlation coefficient ($r = 0.26, p < 0.001$) [7]. Moreover, alexithymia facets demonstrated the same patterns of correlations with the ERQ-F in the current study and Preece and Gross's investigation [7]. As such, these findings replicate the direction and magnitude of correlations obtained with similar self-report methodology. Within the attention-appraisal model, these results are consistent with the view that people high in alexithymia use daydreaming as a form of emotional avoidance [7]. While this is a possible interpretation, the available cross-sectional evidence based on non-clinical samples does not allow to make definitive conclusions in this regard.

Given our interest in examining the latent structure of the constructs, we conducted an exploratory factor analysis of alexithymia, fantasising and mental health variables. Our analysis extracted three meaningful and pure factors — alexithymia, fantasising and psychological distress — with no cross-loadings between them. Such clustering of the constructs under their present operationalisation was expected. This distinction may reflect that the TAS-20 assesses stable deficits in processing affect (traits), whereas the ERQ-F measures the active, purposeful use of fantasy to manage mood (a process or strategy), and the PHQ-4 and WHO evaluate a current mental health condition (affective states). The factors of alexithymia, fantasising and distress were positively interrelated (correlations from 0.20 to 0.42).

These results are important from a clinical perspective. The fantasising factor was positively associated with alexithymia and distress, suggesting that individuals high in alexithymia attempt to regulate emotions (i.e., decrease negative and increase positive affect) through fantasising. However, these efforts appear to be inefficient, potentially leading to negative mental health outcomes. Prior work has indicated that people's efforts to increase positive emotions through the use of fantasising paradoxically may lead to higher levels of psychopathology symptoms [28], a pattern we have also observed in this study (i.e., the positive correlation between the distress and fantasising factors). At a descriptive level, these patterns can be interpreted in line with the attention-appraisal model, indicating that fantasising for emotion regulation acts as an avoidant-type coping strategy. However, the ERQ-F measures a regulatory strategy that is distinct from imaginative

richness. The use of this questionnaire in the present and previous studies could not determine the creativity and depth of the fantasies produced. Hence, any references to the original formulation of constricted imaginal processes or refutation of it, in relation to the alexithymia construct, which concerns the depth, richness and qualitative elaboration of imaginal life, cannot be inferred from the methodology and attendant results of this study.

Previous reports demonstrated both positive and negative links of alexithymia with daydreaming characteristics depending on the nature of fantasies (i.e., distress fantasies versus constructive fantasies) [6,8,13], and therefore, such associations should not be underestimated. Based on our review and the current results, we offer a broader clinical perspective. People with high levels of alexithymia appear to have difficulties with imaginal processes that span both theoretical frameworks, though the nature of these difficulties is conceptualised differently. From the perspective of the affect-deficit model, the core problem is upstream: an impoverished capacity to generate rich, symbolically elaborated mental content [6,11]. In contrast, in the attention-appraisal model, the issue lies in the deployment of fantasy as an ineffective regulatory strategy [7]. These perspectives are not necessarily contradictory — an impoverished imaginal capacity could plausibly manifest as superficial regulatory attempts that fail — but they identify different mechanisms, and the present data cannot adjudicate between them. Future research that assesses the qualitative features of fantasies (e.g., their depth, symbolic elaboration, and emotional richness) alongside regulatory outcomes would be needed to disentangle these accounts.

While the current self-report study adds some evidence to the issue through producing the base for a comprehensive review, the present research has addressed only a limited range of fantasy life aspects, but did not investigate any other daydreaming characteristics, including vividness of fantasies, lack of emotion in the daydreams or specificity of the daydream content (e.g., poor, banal fantasies), which are considered to be impaired among people high in alexithymia. Future studies should investigate how other fantasy characteristics are associated with alexithymia. To do so, we are currently translating a set of comprehensive psychometric tools of fantasy life [8,45] into Polish. We believe that moving forward in the imaginal processes debate requires examination of depth, banality, or symbolic elaboration of fantasy.

4.4. General strengths and limitations of the study

This study represents a useful, albeit modest, contribution. The sample came from a general population

of Poles, with a wide range of ages. However, the female subsample predominated over the male one. While this is a common situation in psychological research, it limits the generalisability of the current evidence. Although the sample was diverse in terms of demographics, the study was conducted using online recruitment methods, potentially introducing self-selection bias. Additionally, because the sample was drawn exclusively from a Polish cultural context, the extent to which the findings generalise to other cultural or linguistic populations remains uncertain.

The limitations of the sample and measurement battery also matter in this specific study's context. A convenience sample recruited via social media, combined with abbreviated scales and single-item indicators, provides limited leverage on a construct that originated in clinical and psychodynamic observation. Moreover, recruitment via social media platforms may introduce specific attentional biases relevant to the present content of the study. Frequent engagement with these platforms is often associated with fragmented attention or "mind-wandering", which participants may conflate with "daydreaming" on single-item frequency measures. Consequently, high scores on the frequency items may simply reflect distractibility rather than the deep, narrative absorptive capacity, which is central to the classical alexithymia formulation. These findings make these items less reliable as proxies for the "rich fantasy life" described by Taylor and colleagues [6,11]. While such a design may be suitable for descriptive or exploratory purposes, it cannot support strong claims about whether impoverished imaginal functioning is intrinsic to alexithymia as classically conceived. Null findings involving the brief daydreaming indicators must therefore be interpreted narrowly and should not be framed as evidence against broader imaginal-process hypotheses.

This investigation was based on self-report measures. However, a multi-measure, multi-method approach ideally should be used when assessing alexithymia [6,25]. Although we used the validated Polish version of the TAS-20 and supported its intended 3-factor model using confirmatory factor analysis, this was the only major alexithymia measure (i.e., the TAS-20) used in this study. While this was not a clinical sample, the distribution of key variables was broad, with participants of low, moderate and high levels of alexithymia as well as fantasising characteristics. This was cross-sectional research; therefore, the temporal order of alexithymia and fantasising variables cannot be established. However, the examined characteristics are considered stable, with alexithymia positioned as a trait [25,46]. Finally, the present research replicated several elements of the previous investigations by Lumley and Bazydło [18]

and Preece and Gross [7], providing a base for a further synthesis of the research findings. This paper serves as a springboard and motivates the more comprehensive work required to address the role of imaginal processes in alexithymia.

4.5. Future directions

There are several important ways in which this line of research can be improved. First, it would be useful to investigate the link between a wide range of imaginal characteristics and different alexithymia measures in non-clinical and clinical samples. Secondly, longitudinal research is required to examine the temporal links between alexithymia and other (day) dreaming characteristics. Since awareness of one's own emotions can be significantly impaired in people high in alexithymia, using a multi-measure, multi-method approach (e.g., structured interviews, informant versions or performance-based methods) is essential to move forward in understanding the alexithymia construct. Finally, future studies may benefit from designs that assess daydreaming and emotion regulation closer to the time of their occurrence (e.g., ecological momentary assessment) [47] rather than relying solely on retrospective self-reports. This may be particularly relevant in alexithymia, where difficulties in emotional awareness could bias global self-evaluations.

5. Conclusions

In this brief self-report study in an online non-clinical sample, alexithymia, as measured with the TAS-20, was associated with less favourable dreaming characteristics (i.e., more nights dreamed without details and more nightmares). In contrast, alexithymia was not significantly associated with daydreaming frequency or dream content (ordinary versus strange), as measured with abbreviated one-item indicators. However, alexithymia was associated with an avoidant-coping strategy in which fantasising is employed to psychologically escape rather than to emotionally regulate distress. This pattern is consistent with two non-mutually exclusive possibilities: that fantasy-based regulation is a misnomer but instead reflects an effortful but ineffective avoidant strategy (as proposed by the attention-appraisal model), or that the fantasies produced are qualitatively impoverished — lacking the depth, symbolic elaboration, and emotional richness that would be needed for effective self-regulation (as suggested by the affect-deficit model). Disentangling these accounts requires methods capable of assessing the qualitative features of imaginal life, which the present design could not provide. The limited scope of the self-report instruments used cannot capture the full range of qualitative features of imaginative life. The primary

contribution of this study is prospective and preliminary rather than adjudicative. However, by clarifying how brief self-report indicators behave, and where their limitations become most apparent, the findings underscore the need for future research that expands domain sampling of imaginal processes, incorporates multiple alexithymia measures, and moves beyond sole reliance on self-report methodology. In this sense, the present study serves as a potential springboard for more definitive investigations using larger samples, richer batteries of imaginal processes measures, and multi-method designs capable of addressing the theoretical issues that remain unresolved.

Conflict of interest

The authors have declared no conflict of interest.

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