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Alexithymia in the Relationship between Nomophobia and Social Phobia among Learning Difficulties Students

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Abstract

This study delves into the intricate relationship between alexithymia, nomophobia (no mobile phobia), and social phobia among higher education students facing learning difficulties. The researcher employed a descriptive correlational approach to validate a proposed causal model that elucidates the dynamics of this relationship. The study sample comprises 36 male and female students enrolled in higher education. Data collection involves the Toronto Alexithymia Scale (TAS-20), the Nomophobia Scale, and the Social Phobia Scale. The results indicate statistically significant positive correlations between social phobia and alexithymia ($p < 0.01$), social phobia and nomophobia ($p < 0.05$), and between alexithymia and nomophobia ($p < 0.05$). Moreover, the study sheds light on the similarity of these relationships across genders. An interesting finding is that isolating alexithymia weakens the relationship between nomophobia and social phobia, suggesting a complex interplay among these variables. The study's implications extend to the understanding of these relationships among individuals with learning difficulties in university settings. It suggests that predicting the levels of social phobia and nomophobia may be feasible by assessing the level of alexithymia. Additionally, the study highlights the potential for improving both social phobia and nomophobia by addressing their interrelationship. In conclusion, this study emphasizes the significance of alexithymia and its association with various mental disorders, indicating the need for tailored interventions for individuals with learning difficulties in higher education.

Keywords: *Alexithymia, Nomophobia (no mobile phobia), Social phobia, learning difficulties,university study.*

Introduction

Several studies indicated that Alexithymia is high among people with learning difficulties (Koulemarze & Amini, 2013; Mellor & Dagnan, 2005; Partidge, 2000). Situations in a social context, they take a longer time to identify emotions. They suffer from difficulties in emotional communication with their ordinary peers, and this affects their self-esteem in a way that makes it develop in a negative direction, reflecting negatively on their personal and social compatibility and their psychological health in general (Khattab,2019).

Students with learning difficulties (LD) make up the largest group of students with special educational needs in inclusive classrooms (Clark & Artiles, 2000). Therefore, specific learning

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difficulties occupied the interest of researchers, mainly in childhood, and the study of their variouseffects on academic performance. Increasingly, researchers recognized their lifelong effects and the need to follow a developmental approach to understand these effects outside educational environments. Learning difficulties directly cause many academic problems that disappear at the secondary level, reappear during the undergraduate level, express themselves in one or more academic fields, and cause many problems arising from the frustration and tension caused by the difficult educational conditions. Many undergraduate students acquire different patterns of academic learning difficulties even though their IQ is above average. Hence, this group of university youth faces a serious challenge, which necessitates that society, in all its educational bodies and institutions, assumes this responsibility so that the energies of its youth are not wasted.Believing in the seriousness of learning difficulties in adults, we find a stream of trends and studiesin the last few years that have combined their efforts and agreed in trying to identify the characteristics and needs of adults with learning difficulties. (Ibrahim, 2015)

Students with learning difficulties develop behavioral patterns that often distinguish themfrom others and may reflect theirSocialand emotional problems . Parents, teachers, and peers often notice examples of these problems in children and adolescents. indicated that they suffer from anxiety and lack of awareness. Feelings and poor control of their impulses and they are less fit and cooperative with their brothers (Ghassan Al-Saleh, 2003, 22)

Youssef and Suleiman Abdel Wahed (2015) highlighted that learning difficulties not only affect academic achievement but are also associated with various social and emotional disorders. Among them is alexithymia, which is characterized by difficulties in emotional perception, and has been consistently linked to learning difficulties in many studies. Al-Beheiri (2009) considered it a personality trait among people with learning difficulties. Hussein (2017) also confirmed the existence of a correlation between alexithymia and psychological adjustment among people with learning difficulties. Moreover, it has been confirmed that alexithymia can be predicted for individuals with learning disabilities based on their psychological adjustment.

There is a substantial body of research supporting the notion that individuals with learning difficulties face challenges in recognizing emotions (Rojahn et al., 1995). Mellor and Dagnan (2005) found that individuals with learning difficulties have greater difficulty in interpreting the emotional states of others and demonstrate less proficiency in interpreting facial expressions of emotion compared to those without learning difficulties. Various studies have corroborated this finding (e.g., Holder and Kirkpatrick, 1991; McAlpine et al., 1991; Nabuzoka & Smith, 1995; Rojahn and Warren, 1997).

In addition, Abbasi (2017) mentioned other studies that have linked alexithymia with an inability to cope with stress (Martin & Pihl, 1985), poor bonding with others (Sifneos, 1987; 1996),and higher levels of anxiety, depression, and reduced self-awareness (Bagby et al., 1994). Taylor(1984) also confirms the correlation between alexithymia, somatic disorders, substance abuse, andpost-traumatic stress disorder.

These findings collectively highlight the challenges faced by individuals with learning difficulties in emotional recognition and the association of alexithymia with various psychologicalfactors, indicating the far-reaching impact of these difficulties on their overall well-being.

According to Clark's articles (2000), the term "alexithymia" was introduced by Sifneos (1975) following studies on the cognitive and emotional styles of individuals with psychosomatic

problems. Alexithymia is not considered a separate diagnosis but rather a cluster of coexisting cognitive and emotional symptoms commonly observed. It is defined as follows: (1) difficulty identifying and differentiating between cognitive and physical experiences of emotional arousal, (2) difficulty expressing feelings to others, and (3) a cognitive style that is externally focused and often associated with limited imagination (Bar-On & Parker, 2000).

While additional characteristics of alexithymia have been proposed, they are not considered essential components of the construct. These characteristics include difficulties in recognizing emotions through facial expressions (Parker et al., 1993), difficulties empathizing with others' emotional states (Krystal, 1979), and limited facial expressions (Troisi et al., 1996).

The prevalence rates of alexithymia are indeed noteworthy. For instance, research has shown that approximately 8.2 percent of male undergraduates and 1.8 percent of female undergraduates exhibit alexithymia traits (Todarello et al., 1995). Moreover, alexithymia is prevalent in 55 percent of individuals with hypertension, 46.7 percent of individuals with panic disorder, and 12.5 percent of individuals with simple phobias (Parker et al., 1993). Among individuals with eating disorders, the prevalence of alexithymia ranges from 40 to 61 percent in those with bulimia nervosa and from 56 to 77 percent in those with anorexia nervosa (Burke et al., 1992) (Mellor & Dagnan, 2005, p. 230).

Rostami et al. (2014) confirmed that individuals with learning difficulties not only struggle academically, particularly in reading and arithmetic, but they also experience difficulties in social cognition, social anxiety, emotional functioning, social interactions, and depression. Students with learning difficulties often face the additional challenge of social phobia alongside their academic struggles.

Indeed, research indicates that individuals with learning difficulties are often described by their peers as antisocial, anxious, tense, angry, and depressed. In one study, it was found that students with learning difficulties exhibit higher levels of generalized anxiety and depression (ranging from 14% to 36%), as well as increased aggressiveness, interpersonal difficulties, and lower levels of social competence compared to their peers. Many individuals with learning difficulties struggle with low self-concept, experience shyness in various social situations, and feel rejected and socially isolated. Teachers often observe these emotional, academic, and behavioral challenges among students with learning difficulties (Hallahan et al., 2007).

These findings highlight the significant social and emotional difficulties that individuals with learning difficulties often face, which can have a profound impact on their overall well-being and academic performance.

Social phobia is one of the forms of suffering that people with learning difficulties suffer from, because of the negative social experiences they are exposed to during their different academic stages within the family and school, which in turn negatively affects the academic and psychological aspects, which predicts more academic problems.

Also, with the developments of technology, the use of the phone has become indispensable in our daily lives. Rather, the effect of its use - due to excessive use - extended to all aspects of life and behavior and negatively affected social aspects until it became one of the modern forms of addiction that many studies dealt with under the name nomophobia (no mobile phobia). Especially at the undergraduate level. Kairouan (2021) stated that it is defined as a state of anxiety or fear that afflicts a person when his mobile phone is not near him or far from his sight, a phenomenon that was considered by the British newspaper (Daily Mail) in research I published on May 6, 2014, by Eddie Maureen It is the biggest phobia in the world. King et al.

(2014) indicate that nomophobia (no mobile phobia) is associated with fear, especially in patients with social phobia, and they indicate that nomophobia (no mobile phobia) may be associated with separation anxiety (Anxiety, Separation). Nomophobia (no mobile phobia) was also used to express social phobia when smartphones were used to support interactions. Virtual social (using social media on the Internet such as Facebook, Twitter, etc.) as a form of self-protection, gaining more sense of security or reducing anxiety-related symptoms. and due to the confirmation of many studies on the correlations between the study variables (Alexithymia - Nomophobia (no mobile phobia) - Social phobia) (e.g. Holder and Kirkpatrick, 1991; McAlpine et al., 1991; Nabuzoka & Smith, 1995; Rojahn &Warren, 1997. Rostami et al. 2014). The main aim of this study is to investigate the role of alexithymia as a mediating variable in the relationship between nomophobia (no mobile phobia) and social phobia among individuals with learning difficulties. The objectives of the study include:

- Identifying and explaining the variables of the study, namely alexithymia, nomophobia, and social phobia, to provide a comprehensive understanding of these constructs in the context of individuals with learning difficulties.
- Examining the correlation between alexithymia, nomophobia, and social phobia to determine the nature and strength of the relationships between these variables.
- Investigating the role of alexithymia as a mediator in the relationship between nomophobia and social phobia. This analysis will help clarify the underlying mechanisms through which these variables are related.
- Determining if isolating the alexithymia variable affects the relationship between nomophobia and social phobia. This analysis will provide insights into the unique contribution of alexithymia to the relationship between these two variables.
- Examining the correlation between gender (males and females) and each of the three variables (alexithymia, nomophobia, and social phobia) to understand if there are gender differences in the experience of these constructs among individuals with learning difficulties.

By addressing these objectives, this study aims to contribute to the understanding of the complex interplay between alexithymia, nomophobia, and social phobia in individuals with learning difficulties, and to provide insights that may inform the development of targeted interventions for this population.

Methods

Sample and Procedures

The researcher employed a descriptive correlational approach in the current study, with the study population comprising individuals with learning difficulties enrolled in university studies.The experimental research sample consisted of 36 university students who were specifically categorized as students with learning difficulties enrolled in university studies. The psychometric characteristics of the research tools were verified by applying them to the participants.

The basic study sample consisted of 36 male and female students with learning difficulties enrolled in university studies. Among them, there were 20 males and 16 females, distributed across different grades. The age range of the participants was between 19 and 22, with a standard deviation of 1.22. The researcher utilized a purposive sampling method to select the sample. To achieve the research objectives, a set of tools was used. Due to the nature of the sample, the researcher used three different methods (interviews - questionnaires -

Communication with guardians), and the study tools (Nomophobia scale- Toronto Scale (TAS-20) – social phobia scale) were applied during the period from August to December 2022.

- Individual interviews: These interviews were conducted with students who have difficulties with reading and writing. The researcher personally interviewed these students to gather relevant data from the students who frequent the university's resource rooms. Each interview lasted between 45 to 60 minutes.
- Online questionnaire administration: A link to the measurement tools was sent to students who were able to respond independently. They were provided with the questionnaire through an online platform or survey tool.
- Communication with guardians: In cases where students required assistance in answering the questionnaire due to their learning difficulties, the researcher reached out to their guardians with the consent of the students. The guardians were involved in helping the students complete the questionnaires.

The collected data were analyzed using appropriate statistical techniques, such as correlation analysis, to examine the relationships between the variables and to fulfill the research objectives.

Hypotheses

H1- *There is a statistically significant correlation between alexithymia, nomophobia (fear of being without a mobile phone), and social phobia among university students with learning difficulties.*

H2- *the form of the correlation between each of the alexithymia, nomophobia (no mobile phobia), and social phobia does not differ according to gender (male–female).*

H3- *There is a statistically significant correlation between the isolation of the alexithymia variable and the strength of the relationship between nomophobia (no mobile phobia) and social phobia. Or does isolating the alexithymia variable from the relationship between nomophobia (no mobile phobia) and social phobia affect (strength or weakness) the relationship between them in the study sample?*

H4- *A model can be found that explains the role of alexithymia as a mediating variable between nomophobia (no mobile phobia) and social phobia among people with learning difficulties who are enrolled in university studies.*

Scales

i. Nomophobia Scale (No Mobile Phobia Scale, Yildirim and Correia (2015), Translated by Abdulaziz Muhammad Abdulaziz (2020)

The scale consists of (20) items represented in four dimensions as follows:

- The first dimension is the inability to communicate. includes the phrases (1, 5, 9, 13, 17) This dimension means the individual's feeling of losing immediate contact with people, and the inability to use services that allow instant communication. The phrases contained in this topic are related to the individual's feeling of losing his ability to communicate with others or his connection with them.
- The second dimension: Loss of communication. It includes the phrases (2, 6, 10, 14, 18) This dimension means the individual's feeling of losing contact over the phone everywhere and the feeling resulting from the disconnection from the personal or borrowed identity on the Internet.
- The third dimension: is the inability to access information: including the phrases (4, 8, 12, 16, and 20) which means the annoyance of losing the ability to permanently access information through phones, and the inability to retrieve and search for information.

- The fourth dimension: Giving up the comforts: It includes the phrases (3, 7, 11, 15, 19) Relates to feelings of giving up the comfort provided by the phone and reflects the desire to take advantage of the comfort it provides. Regarding the psychometric properties.

1. Evaluation of Validity of Statements

To find out the extent to which each statement of the scale affects the value of the stability coefficient, whether it is high or low, a series of Cronbach's alpha coefficients have been extracted so that each coefficient represents the value of the stability of the scale after deleting its items. The variation of each item of the scale after deleting one of the items and Table No. (1) that follows shows these values.

Table (1): Mean, Variance, Corrected Correlation Coefficient, and Alpha Coefficient After Deleting the Expression Score.

Paragraph	mean	variance	corrected correlation	Alpha coefficient	Paragraph	mean	variance	corrected correlation	alpha coefficient
1	56.03	103.423	0.398	0.745	11	55.82	107.543	0.276	0.754
2	56.07	106.737	0.261	0.756	12	56.15	104.371	0.426	0.744
3	55.85	112.705	0.107	0.764	13	55.94	104.148	0.362	0.748
4	56.09	107.871	0.309	0.752	14	55.72	105.237	0.345	0.749
5	55.76	109.882	0.149	0.764	15	55.90	104.640	0.378	0.747
6	55.88	114.410	0.031	0.768	16	55.45	101.281	0.486	0.738
7	55.97	112.363	0.092	0.766	17	56.03	106.332	0.332	0.750
8	55.78	106.449	0.326	0.750	18	55.42	103.005	0.447	0.741
9	56.37	105.692	0.366	0.748	19	55.81	102.462	0.458	0.740
10	55.48	103.071	0.422	0.743	20	55.81	103.159	0.412	0.744
The alpha coefficient for the scale as a whole							0.760		

From Table (1), it is evident that the mean and variance values for each item, both before and after deleting its score, are very similar. The range of these values is also narrow, indicating that all items are highly consistent in measuring their intended construct. Additionally, all corrected correlation coefficients between each item and the total score of the scale, after removing the item, are statistically significant. This indicates that all items demonstrate an acceptable level of reliability when compared to the rest of the items.

Furthermore, Cronbach's alpha stability coefficients for the test remain unchanged after removing any item, indicating appropriate internal consistency of the scale. To assess internal consistency further, Pearson coefficients were calculated between each item of the questionnaire and the total score of the dimension to which it belongs, as well as between the score of each dimension and the total score of the questionnaire. The results are presented in Table (2) below.

Table (2): Correlation Coefficients between the Score of Each Item and the Total Score of the Dimension to Which It Belongs N = (30).

Inability to com	Correlation	Loss of com...	Correlation	Inability to access	Correlation	Forgoam enities	Correlation
1	.756**	1	.782**	1	.722**	1	.788**
2	.718**	2	.720**	2	.794**	2	.765**
3	.718**	3	.736**	3	.773**	3	.706**
4	.774**	4	.735**	4	.779**	4	.703**
5	.746**	5	.760**	5	.791**	5	.740**
Corrélation Coefficient of the questionnaire dimension	.778**	Corrélation Coefficient of the questionnaire dimension	.830**	Corrélation Coefficient of the questionnaire dimension	.818**	Corrélation Coefficient of the questionnaire dimension	.750**

** Significance Level at (0.01).

The preceding Table 2 illustrates that the scale items exhibit strong and statistically significant correlation coefficients ($p < 0.01$) with the total score of their respective dimensions. Furthermore, each dimension demonstrates a strong and statistically significant correlation ($p < 0.01$) with the total score of the scale. These findings suggest that the questionnaire, along with its items, displays high internal consistency.

2. Stability Assessment Using Getman Coefficients Alpha, Omega, Coefficients Table (3)

coefficients	Inability to communicate	Loss of connection	Inability to access information	Forgo amenities	Total
Alpha	0.85	0.75	0.78	0.84	0.76
Getman (6)	0.81	0.73	0.77	0.83	0.80

From the preceding Table 3, it is evident that the stability values exhibit high levels in various aspects, all exceeding 0.7. These findings indicate that the scale possesses good psychometric properties.

ii. Toronto Scale (TAS-20) Aladdin Kafafi and Fouad Al-Dawash, (2011)

The Toronto Scale for Alexithymia consists of (20) items distributed in three dimensions. The firstdimension includes (7) items that measure the difficulty of identifying feelings, such as "I am oftenconfused about what I feel." The second dimension includes (5) items that measure the difficulty of describing feelings or expressions. About it with words such as "It is difficult for me to find theappropriate words to describe my feelings." The third dimension includes (8) paragraphs that measure the external orientation in thinking, which means the prior readiness to focus on externalevents instead of focusing on the internal and individual experiences of the individual, such as "I prefer talking to people about their daily routine instead of talking about their feelings. The scale is a self-report, the subject responds to its paragraphs on a five-point scale that ranges between fully applicable and given (5) degrees and not applicable at all and given one degree, for the positive paragraphs, and the degrees are reflected on the negative paragraphs. The total score on the scale ranges between (20-100) degrees. A higher score indicates a higher level of alexithymia.In its original form, the scale has an appropriate level of constructive validity, discriminatory validity, and approximate validity.

Psychometric Properties of the Scale in the Current Study: To verify the internal consistency, the Pearson coefficient was calculated between each item of the scale and the total score of the scale, to know the extent of the correlation and consistency of the scale items. The following table (4) shows these results:

Table (4): Correlation Coefficients Between the Score of Each Item and the Total Score of the Dimension to Which It Belongs N = (30).

Difficulty describing emotions	Correlation coefficient	Difficulty defining	Correlation coefficient	external orientation in thinking	Correlation coefficient
1	.801**	1	.731**	1	.789**
2	.786**	2	.747**	2	.795**
3	.785**	3	.718**	3	.811**
4	.743**	4	.695**	4	.794**
5	.711**	5	.683**	5	.760**
		6	.770**	6	.767**
		7	.752**	7	.784**
				8	.715**

** Significance Level at (0.01).

Table (5): Correlation Coefficients Between Dimensions and the Total Score of the Scale (N = (30).

	Difficulty describingemotions	Difficultydefining emotions	external orientation in thinking
Correlation coefficient	.778**	.830**	.818**

** Significance Level at (0.01).

It is clear from the previous two tables (4), and (5) that the items of the scale have strong correlation coefficients and are statistically significant at the level of (0.01) with the total score of the dimension to which they belong, and the correlation of each dimension with the total score of thescale is strong and statistically significant at the level of (0.01). It indicates that the scale with its items has a high internal consistency.

- Stability by Alpha and Getman coefficients (6)

Table (6): Alpha, Omega, and Getman Coefficients (6).

Factor coefficient	Difficultydescribing emotions	Difficultydefining emotions	external orientation in thinking	Total
Alpha	0.95	0.93	0.9	0.96
Getman (6)	0.95	0.94	0.95	0.98

It is clear from the previous table (6) that the stability values are high in diverse ways, andall these values were greater than (0.7). From the foregoing, the Toronto Alexithymia Scale has good psychometric properties.

iii. Social Phobia Scale

This scale was prepared by Rollin and Wee (1994) to measure social phobia and shortcomings in relationships. The scale consists of (36) phrases, and in front of each phrase there are two choices: "yes" and "no." The male or female subject is asked to choose one of them that is consistent with his feelings and behavior in life situations This scale is suitable for application to individuals starting from the age of (12) years, and it was translated into Arabic by "Magdy Al-Desouki"(2004), and simple instructions have been set for the scale that includes that the subject responds to each item with one answer from two options They are "yes" and "no." The male or female subject is given one mark if the answer is "yes" and zero if the answer is "no," noting that the phrases bearing the numbers (3, 7, 14, 16, 17, 27, 28, 33)) is corrected in the reverse direction, and algebraic addition is used in calculating the total score obtained by the subject on the scale, and the high score indicates that the individual suffers from social phobia and vice versa. Psychometric properties of the scale in the current study to verify the internal consistency, the Pearson coefficient was calculated between each item of the scale and the total score of the scale, to know the extent of the correlation and consistency of the scale items.

The following table (7) shows these results.

Table (7): Correlation Coefficients Between the Score of Each Item and the Total Score of the Dimension to which it Belongs N = (30).

Item	Correlation coefficient	Item	Correlation coefficient	Item	Correlation coefficient	Item	Correlation coefficient
1	.829**	10	.724**	19	.853**	28	.761**
2	.864**	11	.749**	20	.789**	29	.796**
3	.905**	12	.844**	21	.856**	30	.771**
4	.896**	13	.870**	22	.798**	31	.789**
5	.852**	14	.816**	23	.750**	32	.787**
6	.724**	15	.817**	24	.859**	33	.828**
7	.789**	16	.789**	25	.865**	34	.770**
8	.856**	17	.811**	26	.807**	35	.798**
9	.798**	18	.728**	27	.749**	36	.779**

** Significance Level at (0.01).

It is clear from the previous table (7) that the items of the scale have strong correlation coefficients greater than (0.7) and are statistically significant at the level of (0.01) with the total score of the scale, and this indicates that the scale with its items enjoys high internal consistency.

Scale Stability

The researcher made sure of the stability of the scale by using Cronbach's alpha coefficient,and the stability coefficient, respectively, was (0.780), which is a high stability coefficient greater than (0.7), which indicates the stability of the scale.

3. Statistical Treatment

Data analysis was performed with the R statistical analysis program using statistical packages (R Core Team, 2020), psych (Revelle, 2020), lavaan (Rosseel, 2012), semTools (Jorgensen et al., 2021), Simplot (Epskamp, 2019), Also, the statistical package program in educational and social sciences, known as SPSS (26), was used, and the following methods were used (Mean-Std standard deviation. Deviation- Person correlation coefficient- Cronbach's alpha coefficient-Path analysis)

Results

- **To Verify the First Hypothesis,** which states that "there is a statistically significant correlation between alexithymia, nomophobia (no mobile phobia), and social phobia for people with learning difficulties enrolled in university studies," the researcher used Pearson's correlation coefficient, and its results are as shown in the following table (8):

Table (8): Pearson's Correlation Coefficients Between Alexithymia, Nomophobia (No Mobile Phobia), and Social Phobia.

variable	Social phobia	alexithymia	Nomophobia (no mobile phobia)
Social phobia	1		
alexithymia	.659**	1	
Nomophobia (no mobile phobia)	.402*	.418*	1

** Significance Level at (0.01).

It is clear from the previous table (8) that: There is a positive correlation statistically significantat the level of significance (0.01) between social phobia and **alexithymia**, where the correlation coefficient was (0.658). There is a positive correlation statistically significant at the level of significance (0.05) between social phobia and nomophobia (no mobile phobia), where the correlation coefficient was (0.402). There is a positive correlation statistically significant at the level of significance (0.05) between **alexithymia** and nomophobia (no mobile phobia), where thecorrelation coefficient was (0.418).

- **To Verify the Second Hypothesis**, which states that "the form of the correlation between each of **alexithymia**, nomophobia (no mobile phobia), and social phobia does not differ according to the gender (male-female)". the researcher used the Pearson correlation coefficient, and its results were as shown in the following table (9):

Table (9): Pearson's Correlation Coefficients Between Alexithymia, Nomophobia (No Mobile Phobia), and Social Phobia.

Variable	Male			Female		
	Social phobia	alexithymia	Nomophobia (no mobile phobia)	Social phobia	alexithymia	Nomophobia (no mobile phobia)
Social phobia	1			1		
alexithymia	.527*	1		.851**	1	
Nomophobia (no mobile phobia)	.529*	0.402	1	0.403	0.421	1

** Significance Level at (0.01).

It is clear from the previous table (9) that There is a positive correlation statistically significant at the level of significance (0.01) between social phobia and alexithymia, where the correlation coefficient reached (0.851) for females, while for males the relationship was significantat (0.05), as the correlation coefficient reached (0.527). There is a positive correlation statistically significant at the level of significance (0.05) between social phobia and nomophobia (no mobile phobia), where the correlation coefficient reached (0.529), and the relationship was not significantfor females, as the correlation coefficient reached (0.403). The lack of significance may be due tothe small size of the female sample. This correlation is considered a medium correlation (more than 0.4). There is no statistically significant correlation at the level of significance (0.05) betweenalexithymia and nomophobia (no mobile phobia) for males and females. The lack of significancemay be due to the small size of the samples. It is clear from the foregoing the similarity of the correlations between alexithymia, nomophobia (no mobile phobia), and social phobia for males and females.

- **To Verify the Third Hypothesis**, which states: There is a statistically significant correlation between the isolation of the alexithymia variable and the strength of the relationship between nomophobia (no mobile phobia) and social phobia. Or does isolating the alexithymia variable from the relationship between nomophobia (no mobile phobia) and social phobia affect (strength or weakness) the relationship between them in the study sample? The researcher used the partial correlation coefficient, that is, the relationship between nomophobia (no mobile phobia) and social phobia after isolating alexithymia.
- **To Verify the Fourth Hypothesis, which States**: A model can be found that explains the role of alexithymia as a mediating variable between nomophobia (no mobile phobia) and social phobia among people with learning difficulties who are enrolled in university studies. To test the validity of this hypothesis, the researcher used path analysis using R packages, psych (Revelle, 2020), and lavaan (Rosseel, 2012), the researcher used the weighted least squares method for meanand variance (WLSMV) with strong standard errors in path analysis, which are most appropriate when dealing with categorical and ordinal data. The researcher relied on both the matching statistics of the general model, and the statistical significance tests of the specific paths to examine the direct association between nomophobia (no mobile phobia) and alexithymia, between alexithymia and social phobia, and the indirect association between nomophobia (no mobile phobia) and social phobia through the mediation of alexithymia. After assessing several models,
- The path analysis model shown in Figure (1) achieved the best matching quality indicators, whichis evident in Table (10).

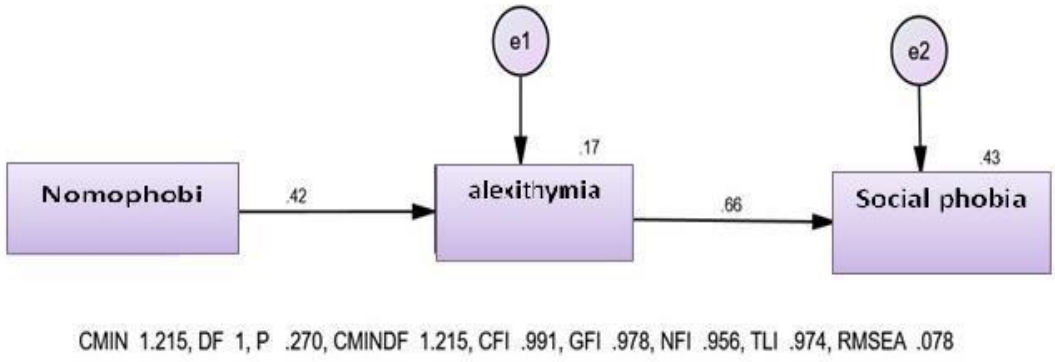

Figure (1): Path Analysis Model That Shows the Correlations Between Alexithymia, Nomophobia (No Mobile Phobia), and Social Phobia.

Table (10): Indicators of Conformity Quality to the Path Analysis Form.

Good fit index Indicator	Indicator value	Indicator threshold	Interpretation	indicator bezel		
				Bad	Acceptable	excellent
CMIN ka square value	1.215	--	--			
DF degrees of freedom	1	--	--			
CMIN/DF The standard Kasquare	1.215	1: 3	excellent	> 5	> 3	> 1
CFI	0.991	>0.95	excellent	<0.90	<0.95	>0.95
SRMR	0.073	<0.08	Acceptable	>0.10	>0.08	<0.08
RMSEA root of the mean Square approach error	0.078	<0.06	Acceptable	>0.08	>0.06	<0.06
P-Close	0.291	>0.05	excellent	<0.01	<0.05	>0.05
GFI	0.98	>0.95	excellent	<0.90	<0.95	>0.95
NFI	0.96	>0.95	excellent	<0.90	<0.95	>0.95
TLI Indicator	0.97	>0.95	excellent	<0.90	<0.95	>0.95

Table (11): Summary of the Path Analysis of the Relationships Between Alexithymia, Nomophobia (No Mobile Phobia), and Social Phobia.

direct effects of independent variables	dependent variable	Standard estimates	The error	critical value	Significance level	Minimum confidence interval	upper limit of the confidence interval
Nomophobia (no mobile phobia)	alexithymia	0.418	0.131	3.181	0.01	0.16	0.676
alexithymia	Socialphobia	0.659	0.094	7.025	0.01	0.475	0.843
Indirect effects of independent variables							
Nomophobia (no mobile phobia)	Socialphobia	0.276	0.099	2.776	0.01	0.081	0.47

It is Clear from the Previous Table (11) that: There is a direct, positive, statistically significant effectat the level of significance (0.01) for nomophobia (no mobile phobia) on alexithymia, the path coefficient for it was (0.418), and the t-value was (3.181). There is a direct, positive, statistically significant effect at the level of significance (0.01) for alexithymia on social phobia, and the pathcoefficient for it was (0.659), and the value of (T) was (7.025). There is a statistically significant positive indirect effect at the level of significance (0.01) for nomophobia (no mobile phobia) onsocial phobia through alexithymia. The path coefficient for it reached (0.976), and the t-value was(2.776). Previous results show that alexithymia plays a mediating role in the relationship between nomophobia (no mobile phobia) and social phobia.

Discussions

This study aimed to identify the correlational relationships between relatively recent variables (Alexithymia - Nomophobia - Social Anxiety). It was the first study to investigate these variables in individuals with learning difficulties. The results confirmed positive correlations between Alexithymia and Social Anxiety (0.658), Social Anxiety and Nomophobia (0.402), and Alexithymia and Nomophobia (0.418). These findings are consistent with previous studies (e.g., Holder and Kirkpatrick, 1991; McAlpine et al., 1991; Nabuzoka and Smith, 1995; Rojahn and Warren, 1997; Rostami, M., Veisi, N., Jafarian Dehkordi, F., & Alkasir, E., 2014; Parker et al., 1993; King et al., 2014; BAGBY et al., 1994).

The study also examined the correlation between the study variables according to gender (males and females). Positive correlations were found between Social Anxiety and Alexithymia for both females (0.851) and males (0.05). Additionally, a positive correlation was found between Social Anxiety and Nomophobia for males (0.529), while the correlation was non-significant for females with a correlation coefficient of (0.403). The lack of significance in the female sample may be due to the small sample size, as this correlation is considered moderate (greater than 0.4). The results also confirmed no significant correlation between Alexithymia and Nomophobia for both males and females.

The results also indicated that isolating the Alexithymia variable weakens the relationship between Nomophobia and Social Anxiety, emphasizing its role as a mediator in the relationship between Nomophobia and Social Anxiety. This can be explained by the direct impact of Alexithymia on psychological and social aspects, as supported by previous studies (e.g., Chen et al., 2011), where difficulty in identifying emotions on the Toronto Alexithymia Scale (20TAS) could be a diagnostic indicator of adaptation disorders. There is a high degree of comorbidity between Alexithymia and other psychological disorders, particularly those related to a lack of empathy. Studies such as Reschke, A. M. H., & Schuetz, S. (2010) have pointed to the relationship between Alexithymia and personal problems with others, while Loas, G., et al. (2015) emphasized the link between Alexithymia and avoidant personality disorders. A study by Na, K. S. (2013) also indicated the direct and indirect impact of Alexithymia on suicide attempts in individuals with adjustment disorders.

Conclusion

The current study contributes to highlighting the importance of the relationship between three variables among people with learning difficulties who are enrolled in university studies, and it will help us predict the level of both social phobia and nomophobia (no mobile phobia) if we determine the level of Alexithymia they have. Improve both nomophobia (no mobile phobia)

and social phobia according to the correlation between them. The study also showed the seriousness of Alexithymia and its relationship with many mental disorders and social problems, which helps in improving levels if Alexithymia is reduced. This suggests that individuals with learning difficulties may experience a complex interplay of these factors that could impact their emotional and social well-being.

The study's results support the notion that Alexithymia may mediate the relationship between Nomophobia and Social Anxiety. This suggests that individuals with learning difficulties who struggle with emotional expression and awareness may be more susceptible to the negative impacts of excessive mobile phone use and social anxiety.

These findings have implications for both the assessment and intervention strategies used in supporting individuals with learning difficulties in managing their emotional and social well-being. Further research in this area may provide additional insights and lead to more effective interventions for this population.

Recommendations

Based on the findings of the current study, the following recommendations can be made

To address the psychological challenges faced by individuals with learning difficulties comprehensively, a multifaceted approach is proposed. Firstly, conducting further research to examine the relationship between alexithymia and various mental health variables can yield a deeper understanding of these challenges and inform intervention strategies. Expanding the sample size and age range of participants is crucial for the generalizability of findings. Utilizing research outcomes and designing counseling and therapeutic programs aimed at reducing alexithymia can enhance emotional and communicative skills, consequently alleviating issues like social phobia and nomophobia. Specialized treatment programs for nomophobia and social phobia among university students with learning difficulties, integrating evidence-based strategies, are essential for fostering healthier phone usage habits, managing phone-related anxiety, and improving overall psychological well-being and social interactions. Collaboration with experts is advisable to ensure the ethical and effective implementation of these initiatives.

By implementing these recommendations, researchers and practitioners can contribute to the development of effective interventions and support systems for individuals with learning difficulties, promoting their mental health and overall well-being.

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Participant Consent and Ethics Approval

This study received Informed consent was obtained from all participants, and data confidentiality was maintained by avoiding the collection or processing of any personal data.

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