

## Depression in Tunisian University Residences and Its Links with Context, Metacognitive Beliefs and Alexithymia

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### Abstract

Student life is full of transitions and challenges, it requires a combination of motivation and adaptation skills, otherwise it may lead to depression, which is the most observed psychological trouble among students in several countries. Knowing the "contagious" aspect of vulnerability to depression, one wonders how alarming the issue is in university residences. Our study aims to see how the student's interpretations of their own skills can be related to depression? Does the ability to express and understand his own emotions help to prevent depression? How might lifestyle and environment be related to depression in this context? Explicitly the objective is to explore the links between depression, metacognitive beliefs, alexithymia and student environment. We conducted a cross-sectional study on 79 students aged between 19 and 26 years from 07 university residences, depression was assessed through the Beck depression inventory, metacognitive beliefs through the metacognitions questionnaire and alexithymia through the Toronto alexithymia scale. We developed a 15-item socio-demographic questionnaire that explores the student's lifestyle and environment. As results, 46.9% of students suffer from moderate to severe depression; 49.4% of them experience's alexithymic disorders. Correlation analysis reveals that depression is significantly correlated to alexithymia and metacognitive beliefs. It is also significantly related to gender, sports and leisure activities. This study presents the (TAS-20) as a possible prognostic tool for depression in university residences. It can inspire future research related to depression in this context hoping to improve student wellness which is often reduced to summary and non-specific awareness campaigns

**Keywords:** alexithymia, depression, metacognitive beliefs, student, university residence.

### 1. Introduction

At university residences, students live in a context characterized by several stressful variables. By moving away from the family they deal with new social rules and new life rhythm (Véron et al., 2019). At the same time, they face their own thoughts about the future, about their relations in the group. These variables and others, as diverse as they are, induces considerable psychological distress and can lead to impaired judgment, decreased concentration, loss of self-

esteem, increased anxiety and depression (Gisele, 2002). It is no coincidence that depression is the most observed psychological suffering among students in several countries; a meta-analysis through 167 cross-sectional studies and 16 longitudinal studies analyzed from 43 different countries estimate at 27% the overall prevalence of depression or depressive symptoms to be (Rosenstein et al., 2016).

According to W. Glauser (2017), 15% of postsecondary students in Ontario, Canada are receiving treatment or have been diagnosed with depression. At the University of Lyon 1 7.4% of students are vulnerable to severe depression (Estingoy et al., 2013). In Iran the prevalence of depression among students is 33%7, it is 35.7% among Kenyan students and 32.2% among Nigerian students. In Ethiopia it is (21.6%) for students at Adama University and (23.6%) for students at Awassa University (Dagnew, Dagne, & Andualem, 2020).

Faced with these alarming data, we have little information's about Tunisian students and their relationship to depression, even less in their university residence environment. This study has two objectives: First one is to determine the prevalence of depression in Tunisian university residences and second one is to identify the factors (external and internal) related to depression. By external factors we mean: type of education, level of study, room layout (single to two or more), frequency of physical or cultural activity, frequency of activity on the telephone and computer; gender, age; sibling rank, subsequent experience of being away from the family, living conditions before the home, field of study. We tried to touch on as many factors as possible that may be related to depression.

The internal factors concern two variables: first one is the evaluation and the interpretations that the student has on his own knowledge (metacognitive knowledge) and the second one concern the ability of the student to identify and understand his and other's emotion (alexithymia).

In fact, the choice of metacognitive knowledge and alexithymia as internal factors is based on cognitive theories explaining depression.

Beck's cognitive theory underlines that the way people interpret an event determines subsequent mood and behavior. Negative automatic thoughts and distortions in interpretations are linked to emotional disorders such as depression (Beck, 1976; Kovacs & Beck, 1978).

Subsequently John Flavell distinguishes two types of metacognitive knowledge: First one is declarative, which includes our knowledge about ourselves and awareness about it: our cognitive style, skills and challenges. For example: "I know that I have a good memory for dates". Second one is procedural: which includes the knowing-how of knowledge: the ability to take stock in real time of the progress of a given procedure and the ability to anticipate from an evaluation of the situation. As example: "I know how and I have the procedure to overcome such situation before it's finished", (Flavell et al., 1985). In our study, we are interested in declarative knowledge which is much more accessible for assessment.

Moreover, there is no lack of research on the link between depression and metacognitive beliefs; metacognitive theories stipulate that the subject's dysfunctional ideas and beliefs about his

cognition are at the root of the development and maintenance of the psychological disorders observed (Wells & Matthews, 1994; Wells, 2000).

Since 2008, Adrian Wells has been developing metacognitive therapy for depression and anxiety, based on Beck's studies and cognitive behavioral therapy, he suggests that people are trapped in emotional disorders because their metacognitive knowledge causes a particular pattern of response to inner experiences. Thus negative emotions and ideas (thoughts and beliefs) are maintained (Wells et al., 2008).

In fact, emotional disorder can take many forms, but we focus on alexithymia which literally means a lack of words for emotions, (a) (lexi) (thymia) (Hemming, Haddock, Shaw & Pratt, 2019).

Focusing on a meta-analysis done on 3572 subjects from clinical samples and the general population across 19 studies, the results show that alexithymia, as assessed by the TAS-20 is related to depression (Li et al., 2015). Indeed, research to date suggests that alexithymia and depression are distinct, yet closely related constructs (Gilanifar & Delavar, 2016).

Our study is situated within the integrative approach that links cognition (metacognitive beliefs) and emotion (depression, alexithymia) to understand student behavior in the context of the university residence (Luminet, 2002; Naceur, 2008, 2010). Its objective is to measure the prevalence of depression first, then to explore the links between depression, metacognitive beliefs, alexithymia and student environment. Some of those factors can be used further as predictors of depression in this context, which is important in the early cases detection.

## **2. Method**

### *2.1 Population*

In this cross-sectional study, our sample involved 79 Tunisian students (23 boys (29.1%) and 56 girls (70.9%) aged between 18 and 26 years. The average age is 19 years 4 months and the standard deviation is 1.332. The students who participated in this study were living in 7 state university homes in the governorate of Ben Arous and Tunis. The sampling of this population was a non-probability quota sampling. Students with a neurological or psychiatric history, having sensory or motor deficits, regularly taking psychotropic drugs or alcohol were excluded from this research.

### *2.2 Material*

#### Beck Depression Inventory (BDI2)

Because of its psychometric value, (BDI2) is used all over the world as a reliable assessment for depression for more than 25 years, the average alpha coefficient of this test is 0.86 in psychiatric populations and 0.81 in non-psychiatric populations (Beck, Steer, & Garbin, 1988).

BDI2 provides a quantitative estimation of the depression intensity. It contains 21 items that assess the affective, cognitive, behavioural, somatic and motivational aspects of depressive symptoms as well as suicidal wishes, the items are rated on a 4-point Likert-type scale. The total score corresponds to the sum of the different items. It allows the diagnosis of depression to be

retained and the intensity of this depression to be judged: < 10, no depression; between 10 and 18, mild depression; between 19 and 29: moderate depression; > 30, severe depression.

#### The Metacognition Questionnaire-30 (MCQ-30)

The Metacognitions Questionnaire-30 (MCQ-30), developed by Wells and Cartwright-Hatton (2004), is a multidimensional measurement scale of metacognitive factors involved in the development and persistence of mental disorders. It is a 30-item self-report scale, which measures the following five individual metacognitive spheres: 1- Positive beliefs about worry, 2- Negative beliefs about worry that are related to uncontrollability and danger, 3- Low cognitive confidence, 4- Need to control thoughts, and 5- Cognitive self-awareness. The questions were designed on a Likert scale ranging from 1=disagree to 4=strongly agree. The Alpha Cronbach coefficients of the subscales ranged from 0.72 to 0.93.

#### The Toronto Alexithymia Scale (TAS20)

The TAS 20, developed by Taylor's Canadian team (1994), is a self-report scale containing 20 items. It is the scale with the best psychometric qualities across several countries, which attests to its good cross-cultural validity (James et al., 2003). The TAS 20 is divided into 3 subscales: 1- Difficulty identifying feelings, 2- Difficulty describing feelings to others, 3- Operative thinking or outward thinking. Each item is scored on a 5-point Likert-type scale (1 = strongly disagree; 5 = strongly agree), and five of the items are scored in reverse. Total scores can range from 20 to 100, with higher scores indicating greater impairment. The translation, adaptation and validation of the TAS-20 into French was carried out by Loas (1995) (Guilbaud et al., 2002).

#### Sociodemographic questionnaire (SDQ)

We developed this self-administered questionnaire, written in simplified Arabic, containing 15 items that explore the following variables: gender, age ,number of brothers and sisters, rank in the sibling group ,income category, type of study, level of study, room layout (single, double or more), frequency and type of physical or cultural activity, frequency and type of activity on the telephone and laptop, subsequent experience of moving away from the family and living conditions before living in university homes. The choice of these items is based on literature review and also it takes origin from the 8-year experience as a psychologist on several Tunisian university residences. We tried to have as much information as possible about the student's external context in order to target the factors likely to be related to depression.

#### *2.3 General procedure*

Before the tests are administered, we started with an interview with each student to check his consent and to familiarize him with the whole procedure. The tests were administered individually. The order of administration followed a Latin square plan: first student starts with the (QSD), for the next student (QSD) will be second test, (see Table 1). We hope to reduce the bias of attentional resources that are optimal for the first test and minimal for the last one. The overall duration will vary between 35 and 45 minutes.

Student Rank	Passing order			
	First test	Second one	Third one	Last one
1st student	(QSD)	(BDI)	(MCQ-30)	(TAS-20)
2nd student	(TAS-20)	(QSD)	(BDI)	(MCQ-30)
3rd student	(MCQ-30)	(TAS-20)	(QSD)	(BDI)
4th student	(BDI)	(MCQ-30)	(TAS-20)	(QSD)
5th student	(QSD)	(BDI)	(MCQ-30)	(TAS-20)

**Table 1: Order of testing**

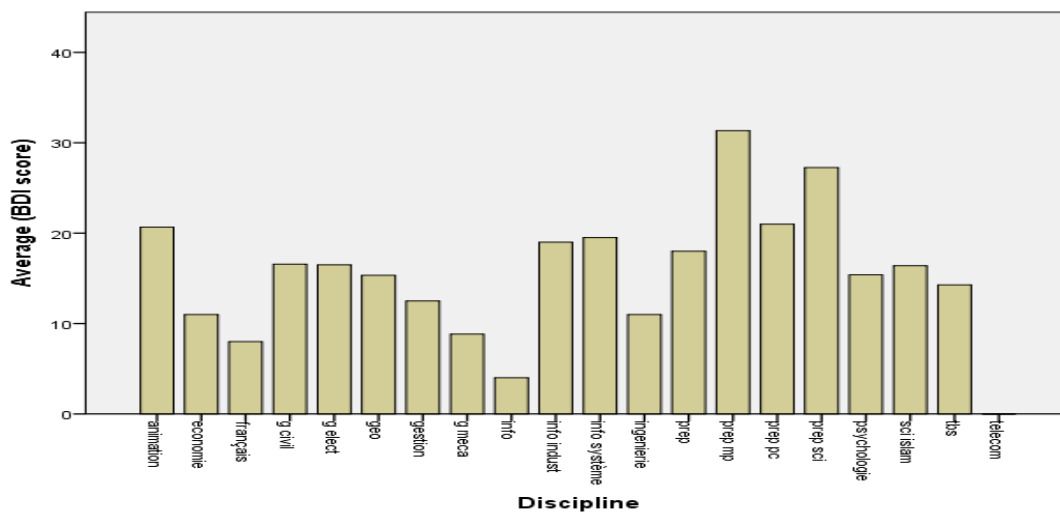
*2.4 Statistical tools*

We used Pearson's coefficient (r) to study the possible correlations between the different variables examined as well as post hoc analysis to refine and specify the type of significant correlation relationships obtained between variables. The threshold of significance is set at .05. The statistical analysis of the results will be carried out using the SPSS software (Statistical Package for the Social Science of IBM version 20).

**3. Results**

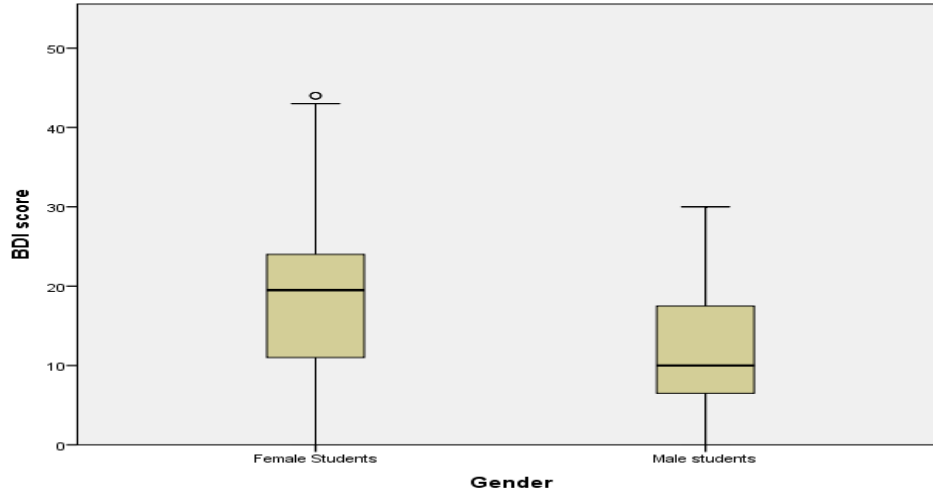
The descriptive analysis reveals: 74.7% of students do not participate in sports activities; 58.2% do not participate in leisure activities; 77.2% of the population use their phones for more than 2 hours per day, 46.9% of students suffer from moderate to severe depression (with 12.7% severe depression) 49.4% of student’s experience alexithymic disorders.

Out of 20 disciplines classified, the disciplines most affected by depression are the preparatory schools (MP, Scientific then PC), then the school of cultural animation and mediation, their depression scores are on average in the moderate depression category (between 20 and 30) (see Figure1).



**Figure 1. Average BDI scores by discipline**

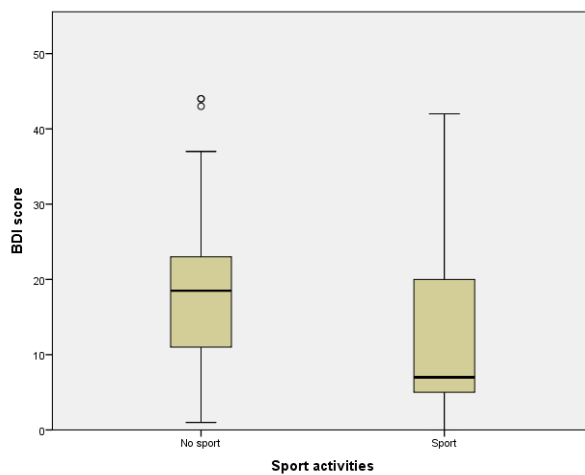
With regard to the gender effect, half of the girls suffer from moderate to severe depression while half of the boys fall into the minor depression category. (See Figure 2)



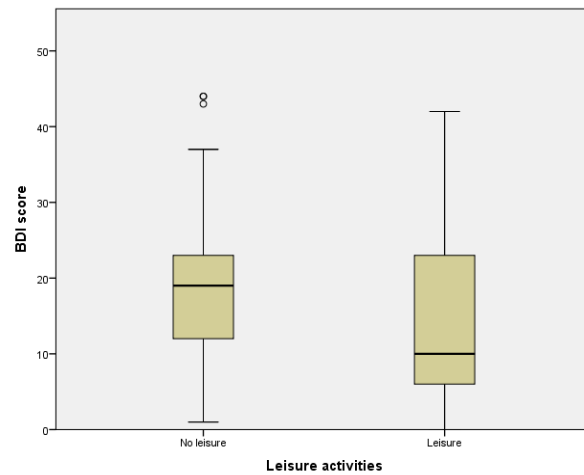
**Figure 2. Dispersion of BDI scores by gender**

The external variables that seem to be most related to depression are leisure activities and sports activity, with a significant correlation  $p < .05$ .

Half of the non-participants in sports and leisure activities suffer from moderate to severe depression, whereas only 25% of the population of sports and leisure activities participants suffer from moderate to severe depression (see figures 3 and 4).



**Figure 3: Dispersion of BDI scores according to sport activities**



**Figure 4: Dispersion of BDI scores according to leisure activities**

Concerning the internal variables related to depression, the partial correlation was used by eliminating the effect of sex and discipline, which were found to be the most significantly correlated with depression. In fact, the partial correlation is the total correlation coefficient between variables A and B when their best linear explanation in terms of C is removed (Lesty,2008); it allows us to know the value of the correlation between two variables (A and B) for example depression and metacognitive beliefs, if the variable (C) effect of sex and discipline had remained constant for the series of observations considered. The results are as follows:

For the total scores, the BDI total score is correlated to the order of .01 with the TAS-20 total score and the MCQ-30 total score.

For the subtests of the MCQ30: they are as follows MCQ-1: positive beliefs.MCQ-2: beliefs about uncontrollability and danger.MCQ-3: cognitive confidence.MCQ-4: beliefs related to superstition, punishment and responsibility.MCQ-5: cognitive self-awareness. Three of the five subtests are correlated, to be more precise MCQ2 and 4 are correlated at the .01 level with the BDI total score see (Table 2).

Variables de contrôle	variables	BDI score	MCQ- score t	MCQ- 1	MCQ- 2	MCQ- 3	MCQ- 4	MCQ- 5	
sexe bin & Discip grp	BDI score	Corrélation	1.000	.477**	-.057	.569**	.269*	.451**	.019
		Signification (bilatérale)	.	.000	.621	.000	.018	.000	.869
		ddl	0	75	75	75	75	75	75

Table 2. Partial correlations between BDI score and MCQ-30 subtests

For the subtests of the Tas20 they are the following: TAS-1: Difficulty in identifying feelings, TAS-2: Difficulty in describing feelings to others, TAS-3: Operative thinking or externally oriented thinking. All three subtests are correlated to the total BDI score, when we focus on detail we found that Tas 1 and Tas 2 are correlated at the order of 0.001 (see Table 3).

Variables de contrôle	variables	BDI score	TAS20-Tot	TAS-1	TAS-2	TAS-3	
sexe bin & Discip grp	BDI score	Corrélation	1.000	.582**	.391**	.588**	.271*
		Signification (bilatérale)	.	.000	.000	.000	.017
		ddl	0	75	75	75	75

Table 3. Partial correlations between BDI score and Tas-20 subtests

#### 4. Discussion

The present study tried to outline the prevalence of depression among students in Tunisian university residences. It also tried to study the internal and external factors related to depression in this context.



In our sample, only 26% of the students do not present depressive symptoms, the remaining part oscillate from minor to severe category of depression which cover 12.7% of the students, our results are in concomitance with the scientific literature; 15% of the Ontario postsecondary students indicated that they had received treatment or had already been diagnosed with depression (Glauser et al., 2017), our prevalence is even higher than the general students population compared to the metanalysis from 43 different countries witch estimate at 27% the overall prevalence of depressive symptoms (Rosenstein et al., 2016).

These results can be explained by the fact that (73%) of students do not participate in any sports activities, neither leisure activities (58%), while these two variables are the most negatively correlated to depression. Also girls are much more affected by depression than boys, similarly in line with the scientific literature. The study category most affected by depression is the preparatory schools, a discipline characterized by a population of bright students who experience a heavy study rhythm and very selective final exams, with similar criteria we find the medical schools that suffer the same destiny: medical students in the United States and Canada have higher anxiety and depressive disorders than the general student population. (Dyrbye et al., 2006).

With regard to internal factors: negative metacognitive beliefs, specifically beliefs about uncontrollability and danger (MCQ-2); cognitive confidence (MCQ-3) and beliefs related to superstition, punishment and responsibility (MCA-4) are strongly correlated with depression, which is fully in line with the scientific literature and joins the metacognitive theory of depression (Wells, 2000; Wells & Matthews, 1994) which states that the subject's dysfunctional ideas and beliefs about his or her cognition motivate the development and maintenance of the depressive disorders observed.

On the other hand, all the subtests of the TAS-20 correlate to the order of .001 with depression, consolidating the scientific literature which suggests that alexithymia and depression are distinct, but closely related constructs (Gilanifar & Delavar, 2016).

This study opens up prospects for using the TAS-20 as a prognostic tool for depression given that the majority of studies conclude that alexithymia predisposes to depression (Hemming. L & all 2019). In this sense a prospective study shows that a high TAS-20 score at baseline was a significant predictor of depression at follow-up (Günther et al. 2016).

### **Conclusion**

The prevalence of depression is high among Tunisian students living in university residences. In this context most correlated variables to this prevalence are alexithymia, metacognitive beliefs, study category, sports and leisure activities; acting on them could prevent from depressive symptoms. Also, this paper suggests the Tas-20 as a prognostic tool for depression. It could help in early cases detection. Nevertheless, there are some limitations in this study: the BDI-2 is not exhaustive and cannot measure all aspects of depression, a qualitative study of depression (e.g. content analysis) could be required, and the sample size could have been larger with more study



category and more residences from all over Tunisia. This motivates further development of future studies in this perspective.

**Conflict of Interest Disclosures**

The authors declare that they have no conflict of interests.

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