

Cognitive Dissonance and Neurotic Perfectionism among University Students

-A Field Study of Female Psychology Students at Batna 1 University (Algeria)-

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Abstract :

This study aimed to examine the level of cognitive dissonance and neurotic perfectionism among third-year psychology students at Batna 1 University (Algeria) and to explore the relationship between the two constructs. A descriptive approach was applied to a stratified random sample of 132 female students. Instruments included the Cognitive Dissonance Scale (Hassanein, 2017) and the Neurotic Perfectionism Scale (El-Quraity et al., 2015). Results indicated a moderate level of cognitive dissonance and a low degree of neurotic perfectionism. No significant differences were found by specialization. However, a statistically significant positive correlation was observed between cognitive dissonance and neurotic perfectionism

($r = 0.685$, $p < .01^{**}$). These findings highlight the relevance of cognitive dissonance theory in understanding maladaptive perfectionism among university students, suggesting the need for counselling interventions that address irrational beliefs and self-critical tendencies.

Keywords: cognitive dissonance ; neurotic perfectionism ; university students.

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Introduction:

Human life involves a continuous learning process that is reinforced across the different educational stages an individual goes through, with each stage characterized by unique features. Among these stages, university education stands out as a preparatory phase, equipping individuals for a new life that requires transforming basic knowledge into a deep and precise understanding of concepts. During this phase, students face challenges such as academic advising and major selection, which is closely linked to satisfaction with their studies (Habbaza, 2024). These choices may stem from personal desires or external pressures and may sometimes lead to feelings of psychological stress and cognitive dissonance between internal desires and societal demands, resulting in conflicting thoughts and behaviors (Festinger, 1957).

However, during their decision-making, students often experience contradictions and cognitive conflicts, highlighting the importance of the concept of cognitive dissonance. Developed by Leon Festinger, it is a fundamental concept in social psychology describing the mental discomfort experienced when holding two contradictory beliefs or ideas simultaneously. In the context of university education, cognitive dissonance arises when students encounter situations conflicting with their beliefs or desires, such as choosing an undesired major. This dissonance motivates the need to adapt to the situation, potentially leading to attitude changes or new decisions to restore internal consistency (Festinger, 1957).

In addition to cognitive dissonance, university students often experience "neurotic perfectionism." Studies indicate that students striving for perfection may experience high levels of anxiety and psychological distress. Neurotic perfectionism is characterised by setting excessively high and unrealistic standards, which leads to persistent internal conflict and heightened feelings of failure. This type of perfectionism can have detrimental effects on personal and academic performance, as students tend to focus on their mistakes rather than their achievements, thereby reinforcing feelings of self-dissatisfaction (Burns, 2009; Hewitt et al, 1991).

Studying the relationship between cognitive dissonance and neurotic perfectionism among university students is an important area of research. Cognitive dissonance reflects the challenges students face when making significant decisions, such as choosing a major, while neurotic perfectionism impacts their ability to cope with academic and social pressures. Research suggests that students experiencing cognitive dissonance may also exhibit neurotic perfectionism, striving to achieve high and unrealistic goals despite facing challenges. This interplay between cognitive dissonance and neurotic perfectionism requires further investigation to understand its impact on university students' behavior and its subsequent effects on their personal and academic lives (Ashby & Brumer, 2015; Barakat, 2021).

The significance of this study lies in exploring cognitive dissonance (a key factor influencing decision-making, particularly for university students) and neurotic perfectionism (a topic relatively under-researched in Arabic literature, where international studies often focus more on adaptive perfectionism). The present study uniquely integrates both cognitive dissonance and neurotic perfectionism, an approach largely absent in prior research. Furthermore, the study aims to assess the levels of these two variables among psychology students at the University of Batna 1(Algeria), identify any potential differences between them according to specialisation, examine the relationship between them, and investigate the impact of cognitive dissonance on the manifestation of neurotic perfectionism. This will be addressed by answering the following research question: Is there a statistically significant correlation between cognitive dissonance and neurotic perfectionism, and does cognitive dissonance have a statistically significant effect on neurotic perfectionism among third-year psychology students at the University of Batna 1?

Study Hypotheses:

- The level of cognitive dissonance among third-year psychology students is high.
- The level of neurotic perfectionism among third-year psychology students is high.
- There is a statistically significant correlation between cognitive dissonance and neurotic perfectionism among third-year psychology students.
- There is a statistically significant effect of cognitive dissonance on neurotic perfectionism among third-year psychology students.

1. Theoretical Background:**1.1. Cognitive Dissonance**

Cognitive dissonance (Festinger, 1957) refers to the psychological discomfort arising from contradictions between beliefs, values, and behaviors. It appears in contexts such as decision-making, confronting new information, acting against values, or justifying effort. Studies show its relevance in learning and behavior change: Liem et al. (2019) highlight its role in conceptual change in science learning; Tsai et al. (2022) confirm its effect in active learning outcomes; and McHugh et al. (2020) use it to promote healthy habits in adolescents. Operationally, it is defined as the contradiction between beliefs and behaviors, measured by scores on the Cognitive Dissonance Scale.

1.2. Neurotic Perfectionism

Neurotic perfectionism (Hamachek, 1978) is an unhealthy form of perfectionism driven by fear of failure, criticism, and conditional self-worth. It involves setting unrealistic standards, excessive self-criticism, and “all-or-nothing” thinking. Its educational impact includes anxiety, procrastination, avoidance of challenges, burnout, difficulty coping with mistakes, and impaired performance. Stoeber et al. (2020) confirm its link with procrastination and poor achievement, while Flett et al. (2018) identify it as a major risk factor for burnout. Operationally, it is defined as striving for unrealistic goals with harsh self-criticism when performance falls short, measured by scores on the Neurotic Perfectionism Scale.

2. Methodology:**2.1. Research Design:**

The current study aims to investigate the relationship between its variables and determine if there are differences within the study sample regarding these variables based on specialisation. A Descriptive-correlational research design was employed.

2.2. Sample:

The sample consisted of 132 female students out of a total population of 200 female students from the third year of Psychology, across all its specialisations (Clinical Psychology, School Psychology, Organisational and Work Psychology). The sample was selected using the stratified random sampling method. Table 1 illustrates the distribution of the sample by specialisation.

Table (01): Distribution of the Study Sample According to the Specialisation Variable

Specialization	Number of Students (Population)	Percentage %	Sample Size
Clinical Psychology	124	62.12 %	82
School Psychology	49	24.24 %	32
Organisational & Work Psychology	27	13.63 %	18
Study Population	200	100 %	132

2.3. Study Tools:

To test the study hypotheses, the researchers used the following tools:

2.3.1. Cognitive Dissonance Scale

This scale was developed by Hassanein (2017). It is a scale composed of 29 items distributed across two dimensions:

- **Emotional Dimension:** Refers to the individual's feelings and psychological emotions, including their degree of comfort or discomfort when evaluating matters and the decisions they have made, and their annoyance, dissatisfaction, or psychological comfort before and after performing a task. (Geoffrey & Jillian, 2003). Its items are (1-13).
- **Cognitive-Behavioral Dimension:** Refers to the variation in the individual's assessment of their beliefs about the decisions made and their soundness. It addresses the extent to which the individual questions and experiences conflicting thoughts and decisions when making a specific choice, as well as the dissonance in evaluation processes after performing a task or making a purchase, and the variation in their assessment of the decision's soundness (Thomas & Monika, 2010). Its items are (17-29).

The scale uses a five-point Likert scale, scored as follows: "Always: 05", "Often: 04", "Sometimes: 03", "Rarely: 02", and "Never: 01". The items were scored in one direction, except for items (11) and (18), which are negatively worded (reverse-scored items), meaning they measure the opposite of the intended construct (cognitive dissonance).

Table (02): Distribution of Items across the Dimensions of the Cognitive Dissonance Scale

Dimension	Items
Emotional Dimension	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Cognitive-Behavioral Dimension	14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29

Scoring Method:

To establish the score ranges corresponding to different levels of cognitive dissonance, the interval width was calculated using the following formula: (Highest score alternative - Lowest score alternative) / (Number of levels) i.e.: $(5 - 1) / 3 = 1.33$

The three levels based on the mean score were as follows:

Table (03): Levels of the Cognitive Dissonance Scale Based on the Mean Score

Mean Score	Level
1.00 - 2.33	Low
2.34 - 3.67	Medium
3.68 - 5.00	High

2.3.2. Neurotic Perfectionism Scale

This scale was developed by (El-Quraiti et al., 2015). It is a scale composed of (33) items, including three reverse-scored items. Each item on the scale uses a three-point response format: "Applies to me," "Applies to me sometimes," and "Does not apply to me." The items are distributed across three dimensions:

1. Low Self-Esteem (12 items): reflects negative self-judgments, excessive fear of failure, harsh self-criticism, and avoidance or procrastination of tasks.
2. Irrational Thoughts (13 items): captures unrealistic perfectionistic beliefs, such as the need for flawless performance to gain approval, love, or recognition, and fear of losing others' respect if not perfect.
3. Dissatisfaction with Performance (8 items): denotes persistent doubt about achievements, self-blame, anxiety, and fear of evaluation when mastery is not attained.

Table (04): Distribution of Items across the Three Dimensions of the Neurotic Perfectionism Scale.

Dimension	Items
Low Self-Esteem Dimension	1, 4, 7, 10, 13, 16, 19, 22, 25, 27, 29, 31
Irrational Thoughts Associated with Neurotic Perfectionism	2, 5, 8, 11, 14, 17, 20, 23, 26, 28, 30, 32, 33
Dissatisfaction with Performance Dimension	3, 6, 9, 12, 15, 18, 21, 24

Scoring Method:

(Applies to me: 03 – Applies somewhat: 02 – Does not apply: 01). A high score on the scale indicates neurotic perfectionism, while a low score indicates adaptive perfectionism.

Table (05): Levels of the Neurotic Perfectionism Scale Based on the Mean Score

Mean Score	Level
1.00 - 1.66	Low
1.67 - 2.33	Medium
2.33 - 3.00	High

To obtain the total score ranges, the number of items (33) is multiplied by the cut-off points of the mean score ranges for the three levels, resulting in levels defined by the total score as shown in the following table.

Table (06): Total Score Ranges for the Neurotic Perfectionism Scale.

Mean Score Range (Approx.)	Total Score Range	Level
(1.00 - 1.66)	33 – 54	Low
(1.67 - 2.33)	55 – 76	Medium
(2.34 - 3.00)	77 – 99	High

4. Psychometric Properties of the Study Tools:**4.1. Cognitive Dissonance Scale****4.1.1. Reliability Calculation using Cronbach's Alpha**

The researchers used the Cronbach's Alpha (α) formula.

Table (07): Cronbach's Alpha Coefficient for Measuring the Reliability of the Cognitive Dissonance Scale

Dimensions	Number of Items	Dimension Reliability (Alpha)
Dimension 1	13	0.801
Dimension 2	16	0.737
Overall Scale Reliability	29	0.883

These results were similar to the findings of the study, which used the same scale, with an overall scale reliability of 0.861.

4.1.2. Split-Half Reliability: The following tables show the verification of split-half reliability.

Table (08): Reliability and Variance Values for the Two Halves

Halves	Reliability Value	Variance Value
First Half	0.824	74.510
Second Half	0.718	58.450

Table (09): Shows Spearman-Brown and Guttman values

Coefficient	Value
Spearman-Brown	0.70
Guttman	0.71

Tables (08) and (09) show unequal variance between the two halves of the scale; therefore, the Guttman coefficient was adopted. The split-half reliability of the Cognitive Dissonance Scale reached **0.71**, indicating a high level of reliability.

4.1.3. Validity Calculation using Internal Consistency: The following tables show the verification of internal consistency.

Table (10): Correlation Coefficients between Each Item Score and the Total Score for the First Dimension: Emotional Dissonance.

Dimension Items	Correlation Coefficient	Sig. Value	Dimension Items	Correlation Coefficient	Sig. Value
Item 1	0.339**	0.04	Item 8	0.564**	0.000
Item 2	0.486**	0.002	Item 9	0.732**	0.000
Item 3	0.469**	0.003	Item 10	0.500**	0.002
Item 4	0.617**	0.000	Item 11	0.302*	0.069
Item 5	0.701**	0.000	Item 12	0.236*	0.160
Item 6	0.583**	0.000	Item 13	0.481**	0.003
Item 7	0.650**	0.000			

** significant at the 0.01 level

Table (11): Correlation Coefficients between Each Item Score and the Total Score for the Second Dimension: Cognitive-Behavioral Dissonance.

Dimension Items	Correlation Coefficient	Sig. Value	Dimension Items	Correlation Coefficient	Sig. Value
Item 14	0.248*	0.139	Item 22	0.539**	0.001
Item 15	0.561**	0.000	Item 23	0.618**	0.000
Item 16	0.472**	0.003	Item 24	0.706**	0.000
Item 17	0.499**	0.002	Item 25	0.599**	0.000
Item 18	0.208*	0.216	Item 26	0.563**	0.000
Item 19	0.599**	0.000	Item 27	0.658**	0.000
Item 20	0.429**	0.008	Item 28	0.071*	0.677
Item 21	0.333 *	0.044	Item 29	0.214*	0.204

** Significant at the 0.01 level

* Significant at the 0.05 level

4.1.4. Extreme Groups Comparison (Discriminant Validity)

Table (12): Results of the t-test for calculating Discriminant Validity (Extreme Groups Comparison) for the Cognitive Dissonance Scale

Group	Mean	Standard Deviation	t-value	Sig.
Lower	63.25	8.58	11.006	0.000
Upper	94.33	4.69		

4.2. Psychometric Properties of the Neurotic Perfectionism Scale

4.2.1. Reliability Calculation using Cronbach's Alpha

Table (13): Cronbach's Alpha Coefficient for Measuring the Reliability of the Neurotic Perfectionism Scale

Dimensions	Number of Items	Dimension Reliability (Alpha)
Dimension 1	12	0.818
Dimension 2	13	0.798
Dimension 3	08	0.790
Overall Scale Reliability	33	0.894

4.2.2. Split-Half Reliability: The following tables show the verification of split-half reliability.

Table (14): Reliability and Variance Values for the Two Halves

Halves	Reliability Value	Variance Value
First Half	0.830	35.743
Second Half	0.811	28.599

Table (15): Spearman-Brown and Guttman values

Coefficient	Value
Spearman-Brown	0.834
Guttman	0.831

4.2.3. Validity Calculation using Internal Consistency: The following table shows the verification of internal consistency.

Table (16): Correlation Coefficients between Each Item Score and the Total Score for the First Dimension: Low Self-Esteem.

Dimension Items	Correlation Coefficient	Sig. Value	Dimension Items	Correlation Coefficient	Sig. Value
Item 1	0.667 **	0.000	Item 19	0.500**	0.001
Item 4	0.635**	0.000	Item 22	0.685**	0.000
Item 7	0.517**	0.001	Item 25	0.421**	0.007
Item 10	0.518**	0.001	Item 27	0.723**	0.000
Item 13	0.598**	0.000	Item 29	0.479 **	0.002
Item 16	0.369*	0.019	Item 31	0.786**	0.000

** Significant at the 0.01 level

* Significant at the 0.05 level

Table (17): Correlation Coefficients between Each Item Score and the Total Score for the Second Dimension: Irrational Thoughts Associated with Perfectionism

Dimension Items	Correlation Coefficient	Sig. Value	Dimension Items	Correlation Coefficient	Sig. Value
Item 2	0.637**	0.000	Item 23	0.573**	0.000
Item 5	0.576**	0.000	Item 26	0.630**	0.000
Item 8	0.538*	0.000	Item 28	0.373*	0.018
Item 11	0.632**	0.000	Item 30	0.326*	0.040
Item 14	0.605**	0.000	Item 32	0.483**	0.002
Item 17	0.441**	0.004	Item 33	0.656**	0.000
Item 20	0.588**	0.000			

** Significant at the 0.01 level

* Significant at the 0.05 level

Table (18): Correlation Coefficients between Each Item Score and the Total Score for the Third Dimension: Dissatisfaction with Performance

Dimension Items	Correlation Coefficient	Sig. Value	Dimension Items	Correlation Coefficient	Sig. Value
Item 3	0.565**	0.000	Item 15	0.595**	0.000
Item 6	0.653**	0.000	Item 18	0.652**	0.000
Item 9	0.758**	0.000	Item 21	0.657**	0.000
Item 12	0.701**	0.000	Item 24	0.523**	0.001

** Significant at the 0.01 level

4.2.4. Validity Calculation using Extreme Groups Comparison (Discriminant Validity)

Table (19): Results of the t-test for calculating Discriminant Validity (Extreme Groups Comparison) for the Neurotic Perfectionism Scale

Group	Mean	Standard Deviation	t-value	Sig.
Lower	41.76	3.53	12.650	0.000
Upper	65.23	5.67		

3. Results:

3.1. Verification of the Normal Distribution Assumption for the Data.

Before processing the hypotheses using various and appropriate statistical methods, it was first necessary to verify the assumption of normal distribution for the study variables. The researchers used the Kolmogorov-Smirnov test to ascertain the normality of the distribution, as shown in the following table:

Table (20): Shows the verification of the normal distribution assumption for the study variables

Variables	Kolmogorov-Smirnov		
	Statistic	Sample (N)	Sig. (p-value)
Cognitive Dissonance	0.059	132	0.200
Neurotic Perfectionism	0.085	132	0.020

Based on the data shown in the table above and the Kolmogorov-Smirnov test values, we observe that the significance value for the Cognitive Dissonance variable was non-significant ($p = 0.200 > 0.05$), while it was significant ($p = 0.020 < 0.05$) for the Neurotic Perfectionism variable. Therefore, the Cognitive Dissonance variable follows a normal distribution, whereas the Neurotic Perfectionism variable does not initially follow a normal distribution.

Using the statistical methods available in the SPSS v23 program, the data for the Neurotic Perfectionism variable were transformed in order to achieve a normal distribution. The results were as shown in Table 22.

Table (21): Verification of the normal distribution assumption for the Neurotic Perfectionism variable (After Transformation)

Variables	Kolmogorov-Smirnov		
	Statistic	Sample (N)	Sig. (p-value)
Neurotic Perfectionism	0.069	132	0.200

Based on the data shown in Table 21 and the Kolmogorov-Smirnov test value, we observe that the significance value for the Neurotic Perfectionism variable became non-significant ($p = 0.200 > 0.05$). Therefore, the Neurotic Perfectionism variable now follows a normal distribution after transformation.

Consequently, based on the results of the previous two tables (20) and (21), we can conclude that the study variables (with Neurotic Perfectionism transformed) are normally distributed. Therefore, all statistical methods to be used in the analysis will be parametric methods.

3.2. Presentation of Study Results:

3.2.1. Presentation of Results for the First Hypothesis:

The first hypothesis states that "The level of cognitive dissonance among third-year psychology students at the University of Batna 1 is high." The following table shows the verification of this hypothesis.

Table (22): Mean Scores and Standard Deviations for Cognitive Dissonance and its Sub-dimensions

No.	Dimension	Number of Items	Mean Score	Standard Deviation	Level
1.	Cognitive-Behavioral	16	3.12	0.61	Medium
2.	Emotional	13	2.42	0.60	Medium
Overall Cognitive Dissonance	29	2.81	0.54	Medium	

Referring to the levels of the Cognitive Dissonance scale (Table 22), it is evident that the overall mean score (2.81) falls within the second level (2.34-3.67), indicating that the level of cognitive dissonance among the study sample was moderate. Therefore, the hypothesis was not supported.

The Cognitive-Behavioural dimension ranked first, followed by the Emotional dimension, both with a moderate level.

The means and standard deviations for the sample's responses to the items of each dimension were calculated separately, as follows:

→ **Emotional Dimension:** The following table summarises the statistical verification for this dimension.

Table (23): Means and Standard Deviations for the Emotional Dimension Items, Ranked Descendingly by Mean Score.

Item No.	Rank	Item Statement	Mean	SD	Level
12	1.	I lack psychological comfort when there is a conflict in my thoughts	3.98	1.126	High
11	2.	I feel satisfied with the decision I made when buying something	3.59	1.132	Medium
7	3.	I feel that the task assigned to me is very difficult	2.39	1.083	Medium
5	4.	I am afraid of doing the task assigned to me	2.38	1.109	Medium
4	5.	I experience psychological disappointment	2.37	1.263	Medium
2	6.	I feel anxious when my answer is inconsistent with others' answers	2.36	1.133	Medium
8	7.	I feel frustrated and unable to continue performing the task	2.26	1.038	Low
1	8.	I feel annoyed when answering questions	2.24	1.012	Low
6	9.	I feel angry when performing a task	2.19	1.106	Low
13	10.	I avoid telling the truth for fear of being blamed	2.18	1.216	Low
9	11.	Depression accompanies me while performing the task	2.08	1.139	Low

3	12.	I feel despair when performing the task	1.90	0.915	Low
10	13.	I feel sick before performing the task	1.65	1.041	Low
Overall Emotional Dissonance	2.42	0.60	Medium		

Table (23) shows that the mean scores ranged between (1.65 - 3.98). Item (12) "I lack psychological comfort when there is a conflict in my thoughts" ranked first with a mean score of (3.98) and a high level. Meanwhile, item (10) "I feel sick before performing the task" ranked last with a mean score of (1.65) and a low level. The overall mean score for the Emotional Dissonance dimension was (2.42), indicating a moderate level.

→ **Cognitive-Behavioral Dimension:** The following table summarizes the statistical verification for this dimension.

Table (24): Means and Standard Deviations for the Cognitive-Behavioral Dimension Items, Ranked Descendingly by Mean Score.

Item No.	Rank	Item Statement	Mean	SD	Level
24	1.	I often question myself about the correctness of things I have done	4.31	1.012	High
18	2.	I contemplate the positives outweighing the negatives in my life	3.82	1.131	High
25	3.	I think about how correct the questions I ask are	3.41	1.248	Medium
14	4.	I would change some of my reactions to situations if I could go back in time	3.33	1.328	Medium
29	5.	I am cautious about changing my previously learned beliefs and ideas	3.31	1.349	Medium
20	6.	The decision I made was thought about later	3.28	1.237	Medium
23	7.	I think about the questions I ask myself when performing a task	3.17	1.237	Medium
22	8.	I wonder a lot if I got good value for something I spent money on	3.14	1.312	Medium
28	9.	It is difficult for me to accept beliefs that conflict with my own	3.10	1.353	Medium
21	10.	I wonder if I got a good deal when buying anything	3.05	1.241	Medium
19	11.	When I make a decision, I am not sure if the decision I made is correct	2.92	1.137	Medium
16	12.	I hesitate in my reactions to situations and events	2.74	1.103	Medium

15	13.	Some of my answers to questions conflict with my personal beliefs	2.73	1.153	Medium
27	14.	I faced great difficulty judging the quality of the product I bought	2.58	1.224	Medium
17	15.	I find it difficult to predict the best performance for a task	2.56	1.058	Medium
26	16.	I wonder why I buy something after buying it	2.51	1.351	Medium
Overall Cognitive-Behavioral Dissonance	3.12	0.61	Medium		

Table (24) shows that the mean scores ranged between (2.51 - 4.31). Item (24) "I often question myself about the correctness of things I have done" ranked first with a mean score of (4.31) and a high level. Meanwhile, item (26) "I wonder why I buy something after buying it" ranked last with a mean score of (2.51) and a moderate level. The overall mean score for the Cognitive-Behavioral dimension was (3.12), indicating a moderate level.

3.2.2. Presentation of Results for the Second Hypothesis:

The second hypothesis states that "The level of neurotic perfectionism among third-year psychology students at the University of Batna 1 is high." The following table shows the verification of this hypothesis.

Table (25): Mean Scores and Standard Deviations for Neurotic Perfectionism and its Sub-dimensions, Ranked Descendingly by Mean Score.

No.	Dimension	Number of Items	Mean Score	Standard Deviation	Level
1.	Dissatisfaction with Performance	08	1.72	0.390	Medium
2.	Irrational Thoughts Associated with Perfectionism	13	1.67	0.383	Medium
3.	Low Self-Esteem	12	1.49	0.374	Low
Overall Neurotic Perfectionism	33	1.61	0.318	Low	

Based on the results in Table 25, the overall mean score was (1.61) with a standard deviation of (0.318). Referring to the levels of the Neurotic Perfectionism scale (Table 18), it was found that the mean score value falls within the first level (1.00-1.66). By calculating the total neurotic perfectionism score, we find it equals (53.45), which falls within the first level (Low: 33-54) according to Table 19. This indicates that the level of neurotic perfectionism among the study sample was low. Therefore, the hypothesis was not supported.

The 'Dissatisfaction with Performance' dimension ranked first, while the 'Irrational Thoughts Associated with Perfectionism' dimension ranked second. Meanwhile, the 'Low Self-Esteem' dimension ranked last.

The means and standard deviations for the sample's responses to the items of each dimension were calculated separately, as follows:

→ **Low Self-Esteem Dimension:** The following table summarises the statistical verification for this dimension.

Table (26): Means and Standard Deviations for the Low Self-Esteem Dimension Items, Ranked Descendingly by Mean Score.

Item No.	Rank	Item Statement	Mean	SD	Level
19	1.	I hesitate to answer any question, even though I know the correct answer.	1.98	0.756	Medium
13	2.	I find it difficult to join conversations with others.	1.58	0.677	Low
16	3.	I feel ashamed of my performance because it never reaches perfection.	1.55	0.634	Low
4	4.	I express my opinions freely without shyness or fear.	1.53	0.670	Low
27	5.	I hesitate a lot to express my opinions, preoccupied with negative evaluations from others.	1.52	0.659	Low
31	6.	I lack confidence in my ability to perform the tasks required of me.	1.51	0.682	Low
25	7.	I feel that I am a successful person with value in society.	1.46	0.598	Low
10	8.	I wish I were someone else.	1.45	0.669	Low
1	9.	I delay submitting work assigned to me because I always think it's below standard.	1.39	0.588	Low
22	10.	I feel that any achievement I've made in my life is unimportant.	1.36	0.607	Low
29	11.	I am a well-liked person among my colleagues.	1.35	0.538	Low
7	12.	I feel like I am a worthless person.	1.28	0.597	Low
Overall Low Self-Esteem	1.49	0.374	Low		

Table (26) shows that the mean scores ranged between (1.28 - 1.98). Item (19) "I hesitate to answer any question, even though I know the correct answer" ranked first with a mean score of (1.98) and a medium level. Meanwhile, item (7) "I feel like I am a worthless person" ranked last with a mean score of (1.28) and a low level. The overall mean score for the Low Self-Esteem dimension was (1.49), indicating a low level.

→ **Irrational Thoughts Associated with Perfectionism Dimension:** The following table summarizes the statistical verification for this dimension.

Table (27): Means and Standard Deviations for the Irrational Thoughts Associated with Perfectionism Dimension Items, Ranked Descendingly by Mean Score.

Item No.	Rank	Item Statement	Mean	SD	Level
2	1.	I expect words of thanks and appreciation from others (father, mother, teacher, friends) for any work I do.	2.05	0.719	Medium
28	2.	I talk to myself about the reasons that push me to do things that please others but not myself.	1.90	0.770	Medium
30	3.	I justify that there isn't enough time to do the required work with a high degree of mastery.	1.86	0.639	Medium
32	4.	It bothers me when others don't appreciate me for the work I've done for them.	1.83	0.733	Medium
23	5.	I feel psychological pain when others ignore the work I do.	1.76	0.632	Medium
8	6.	It is necessary for a person to be liked and supported by all the people around them.	1.75	0.775	Medium
5	7.	I strive to work according to others' high expectations of me to gain their attention and admiration.	1.60	0.750	Low
11	8.	I am very afraid of losing others' respect if my performance is not perfect.	1.59	0.720	Low
17	9.	I suffer from internal conflict choosing between work that satisfies me and doing work I think satisfies others.	1.55	0.702	Low
14	10.	I strive to reach distinction to gain others' praise and commendation.	1.53	0.704	Low
33	11.	Doing any work that does not gain others' approval and admiration	1.49	0.636	Low

		frustrates me.			
20	12.	I stop completing any work when I feel it won't gain others' approval and liking.	1.42	0.618	Low
26	13.	I feel distressed and angry just thinking that someone dislikes me.	1.39	0.639	Low
Overall Irrational Thoughts Associated with Perfectionism	1.67	0.383	Medium		

Table (27) shows that the mean scores ranged between (1.39 - 2.05). Item (2) "I expect words of thanks and appreciation from others..." ranked first with a mean score of (2.05) and a medium level. Meanwhile, item (26) "I feel distressed and angry just thinking that someone dislikes me" ranked last with a mean score of (1.39) and a low level. The overall mean score for the Irrational Thoughts Associated with Perfectionism dimension was (1.67), indicating a medium level.

→ **Dissatisfaction with Performance Dimension:** The following table summarizes the statistical verification for this dimension.

Table (28): Means and Standard Deviations for the Dissatisfaction with Performance Dimension Items, Ranked Descendingly by Mean Score.

Item No.	Rank	Item Statement	Mean	SD	Level
6	1.	I blame myself a lot when my performance is below my expectations.	2.20	0.696	Medium
15	2.	I feel anxious and fearful when it's time to submit my required assignments.	2.10	0.686	Medium
18	3.	I judge myself harshly when I complete my work at a level less than perfect.	1.85	0.659	Medium
9	4.	I lack satisfaction when I finish required work, believing it needs more refinement.	1.80	0.704	Medium
3	5.	Completing work at a level below the required standard is considered an utter failure.	1.73	0.742	Medium
12	6.	It's a catastrophe if I don't reach mastery	1.56	0.691	Low

		in any work I do.			
24	7.	Making mistakes in any work is considered a major catastrophe.	1.28	0.543	Low
21	8.	If I don't achieve perfection, I am a failure.	1.25	0.500	Low
Overall Dissatisfaction with Performance	1.72	0.390	Medium		

Table (28) shows that the mean scores ranged between (1.25 - 2.20). Item (6) "I blame myself a lot when my performance is below my expectations" ranked first with a mean score of (2.20) and a medium level. Meanwhile, item (21) "If I don't achieve perfection, I am a failure" ranked last with a mean score of (1.25) and a low level. The overall mean score for the Dissatisfaction with Performance dimension was (1.72), indicating a medium level.

3.2.3. Presentation of Results for the Third Hypothesis:

The third hypothesis states that there is a statistically significant correlation between cognitive dissonance and neurotic perfectionism among the study sample. The following table summarizes the statistical verification of this hypothesis.

Table (29): Correlation Coefficient Value between Cognitive Dissonance and Neurotic Perfectionism

Variables	Correlation Coefficient (r)	Sig. (p-value)
Cognitive Dissonance - Neurotic Perfectionism	0.685	0.01

Correlation is significant at the 0.01 level (2-tailed).**

The correlation coefficient is (0.685), which is statistically significant at the 0.01 level. This indicates that the hypothesis is supported; there is a significant positive correlation between cognitive dissonance and neurotic perfectionism. According to practical significance criteria (effect size), the magnitude of this relationship ($r = 0.685$) is considered large when compared to Cohen's effect size guidelines.

Table (30): Cohen's Effect Size Guidelines for Correlation Coefficient (r) (Cohen, 1988, p. 82)

Effect Size	Small	Medium	Large
R	0.10 - < 0.30	0.30 - < 0.50	≥ 0.50

Correlations were also calculated between the total cognitive dissonance score and the dimensions of neurotic perfectionism, between the dimensions of cognitive dissonance and the total neurotic perfectionism score, and between the dimensions of cognitive dissonance and the dimensions of neurotic perfectionism. This was done to clarify the prominent dimensions involved in the relationship between cognitive dissonance and neurotic perfectionism. Tables (33), (34), and (35) present these correlations.

Table (31): Correlation Coefficients between Total Cognitive Dissonance Score and Neurotic Perfectionism Dimensions

Variables	Correlation Coefficient (r)	Sig. (p-value)
Cognitive Dissonance - Low Self-Esteem	0.565	0.01

Cognitive Dissonance - Irrational Thoughts	0.614	0.01
Cognitive Dissonance - Dissatisfaction with Performance	0.508	0.01

Correlation is significant at the 0.01 level (2-tailed).**

The Pearson correlation coefficients between the dimensions of neurotic perfectionism and the total cognitive dissonance score were calculated. All relationships were positive and statistically significant at the 0.01 level. The highest correlation was observed with the Irrational Thoughts dimension ($r = 0.614$), followed by the Low Self-Esteem dimension ($r = 0.565$), and the lowest correlation was with the Dissatisfaction with Performance dimension ($r = 0.508$).

Table (32): Correlation Coefficients between Total Neurotic Perfectionism Score and Cognitive Dissonance Dimensions

Variables	Correlation Coefficient (r)	Sig. (p-value)
Neurotic Perfectionism - Emotional Dimension	0.691	0.01
Neurotic Perfectionism - Cognitive-Behavioral Dimension	0.544	0.01

Correlation is significant at the 0.01 level (2-tailed).**

The Pearson correlation coefficient values were all statistically significant, indicating a positive correlation between the dimensions of cognitive dissonance and the total neurotic perfectionism score. The strongest correlation was found with the Emotional Dimension ($r = 0.691$, $p < 0.01$).

Table (33): Correlation Coefficients between Cognitive Dissonance Dimensions and Neurotic Perfectionism Dimensions

Neurotic Perfectionism Dimension	Emotional Dimension (ED)	Cognitive-Behavioral Dimension (CD)	Sig. (p-value)
Low Self-Esteem Dimension	0.615	0.411	0.01
Irrational Thoughts Dimension	0.562	0.535	0.01
Dissatisfaction with Performance Dimension	0.541	0.381	0.01

Correlation is significant at the 0.01 level (2-tailed).**

The results in Table (33) show that all Pearson correlation coefficients were statistically significant, indicating positive correlations between the dimensions of cognitive dissonance and the dimensions of neurotic perfectionism. The strongest correlation was observed between the Emotional Dimension (of Cognitive Dissonance) and the Low Self-Esteem Dimension (of Neurotic Perfectionism) ($r = 0.615$, $p < 0.01$).

3.2.4. Presentation of Results for the Fourth Hypothesis:

The fourth hypothesis states that there is a statistically significant effect of cognitive dissonance on neurotic perfectionism among third-year psychology students at the University of Batna 1. The following table summarizes the statistical verification of this hypothesis.

Table (34): Results of the Linear Regression Model

Dependent Variable	Predictor Variable	R	R Square (R ²)	F Value	Sig. . F	Beta (β)	t Value	Sig. t
Neurotic Perfectionism	Cognitive Dissonance	0.685	0.469	114.745	0.000	0.456	10.712	0.000

Table (34) shows that the regression model was statistically significant ($F = 114.745$, $p < 0.01$). Cognitive dissonance explained **46.9%** of the variance in neurotic perfectionism ($R^2 = 0.469$). The standardized Beta ($\beta = 0.456$, $t = 10.712$, $p < 0.001$) indicates that higher cognitive dissonance significantly predicts increased neurotic perfectionism.

We can also write the regression equation as follows:

Predicted Neurotic Perfectionism = $16.245 + 0.456 * \text{Cognitive Dissonance} + \text{Error Term}$.

Or:

Predicted Neurotic Perfectionism = $0.685 * \text{Cognitive Dissonance} + \text{Error Term}$.

4_ Discussion

4.1. Discussion of the First Hypothesis:

The study showed that the overall level of cognitive dissonance among the participating female students was moderate, as were both dimensions of the scale (cognitive-behavioral and emotional). This indicates that the first hypothesis of the study was not supported. However, the presence of a moderate level of dissonance aligns with previous studies (Salama et al., 2014; Al-Azamat et al., 2017). This moderate level is interpreted in light of the fundamental theory of cognitive dissonance, which posits that holding inconsistent thoughts or beliefs leads to feelings of dissonance.

Considering the dimensions of cognitive dissonance, the cognitive-behavioral dimension ranked first with a moderate level. This is attributed to the variation in students' assessment of their beliefs regarding the correctness of the decisions they made and their consistency with their thoughts (Geoffrey & Jullian, 2003). This was confirmed by the study of Ghanem (2021). As for the emotional dimension, which ranked second with a moderate level, it refers to the students' feelings and emotions when evaluating the decisions they made (Geoffrey & Jullian, 2003). This aligns with the perspective of Dollard & Miller (1950), who viewed dissonance and conflict as involving discomfort due to the presence of opposing ideas (Omar, 2019).

The moderate level of dissonance might also result from students' exposure to new information and events in the university environment (Stanchi, 2013). Dissonance can also be attributed to the lack of harmony between the students' thoughts and the surrounding society, as a state of dissonance can arise when individuals find themselves in situations conflicting with their beliefs (Festinger, 1957). Additionally, culture and educational level play a role in cognitive dissonance (Al-Azamat et al., 2018). This dissonance may stem from the influence of past experiences and socialization (Li, 2010).

4.2. Discussion of the Second Hypothesis:

The study results showed that the level of neurotic perfectionism among the participating female students was low. All its dimensions were moderate, except for the low self-esteem dimension, which was also low. This indicates that the second hypothesis of the study was not supported. This low level of neurotic perfectionism suggests that the students in the sample exhibit adaptive perfectionism, striving for success without setting excessively high standards or engaging in harsh self-criticism when they do not excel. This is supported by the low score on the low self-esteem dimension, as Burns (2009) noted that neurotic perfectionism is associated with low self-esteem when high standards are not met.

Despite the overall low level of neurotic perfectionism, the irrational thoughts dimension was moderate, which might reflect the presence of cognitive biases among the students. This

aligns with the study by Al-Zaghalil (2008), which found a generally low level of neurotic perfectionism among university students. As for the dissatisfaction with the performance dimension, which was also moderate, it might reflect the students' striving to complete their duties without reaching the high level of neurotic perfectionism. This is consistent with the definition of neurotic perfectionism as setting excessively high and unrealistic performance standards coupled with fear of failure and intolerance of mistakes (Shortt & Terry, 2000). This finding differs from the study by Andijani (2017), which indicated a moderate level of neurotic perfectionism among high school students.

4.3. Discussion of the Third Hypothesis:

The study results confirmed a strong, positive correlation between cognitive dissonance and neurotic perfectionism among third-year female psychology students at the University of Batna 1, with a Pearson coefficient ($r = 0.685$). This indicates that higher levels of cognitive dissonance are associated with higher levels of neurotic perfectionism. The results also revealed statistically significant relationships between cognitive dissonance and the dimensions of neurotic perfectionism, with the correlation between cognitive dissonance and irrational thoughts being the highest ($r = 0.614$).

The correlation value between the emotional dimension of cognitive dissonance and the low self-esteem dimension of neurotic perfectionism was high ($r=0.691$). Based on cognitive dissonance theory, individuals strive for consistency to reduce the discomfort caused by contradictions (Festinger, 1957). From Adler's perspective, neurotic perfectionism arises in environments where approval is conditional (Paul et al., 2017, p. 40). Additionally, this relationship might be attributed to coping mechanisms for cognitive dissonance, such as cognitive distortion (Hassan, 2021). Furthermore, dissonance can arise from self-dissatisfaction (Aronson, 1969). Moreover, the threat arising from the incompatibility between beliefs and behaviors, a common element among neurotic perfectionists, might explain the relationship between cognitive dissonance and neurotic perfectionism (Festinger, 1957).

4.4. Discussion of the Fourth Hypothesis:

The study demonstrated a statistically significant effect of cognitive dissonance on neurotic perfectionism among third-year female psychology students, with cognitive dissonance explaining 46.90% of the variance in neurotic perfectionism. This effect is attributed to cognitive dissonance creating a state of imbalance in students' beliefs and thoughts, which in turn affects their choice of strategies and goal organization, potentially leading to the adoption of high and unrealistic standards associated with neurotic perfectionism. Dissonance begins when an individual evaluates their behavior against important standards that may exceed their abilities and capabilities (Harmon-Jones, 2019).

According to the results, neurotic perfectionism can be considered a behavior influenced by cognitive dissonance, as Karen Horney identified the contradictions faced by individuals (Paul et al., 2017). The relationship between cognitive dissonance and neurotic perfectionism can be understood in light of the continuous interaction between the student's personal and cognitive aspects and environmental influences during the university stage.

The relationship between cognitive dissonance and neurotic perfectionism can also be explained in terms of learned behaviors. Dollard and Miller indicated that neurotic perfectionism is a behavior learned since childhood (Andijani, 2017). Furthermore, the presence of dissonance creates pressure to reduce or eliminate it, and the intensity of these actions increases with the magnitude of the dissonance (Festinger, 1957). This leads individuals to seek some form of self-justification, which might manifest as engaging in perfectionistic behaviors (Harmon-Jones, 2019). A simple experiment confirmed that students

with negative expectations about their performance tend to change their answers to maintain a consistent self-concept, even if it means failing (Harmon-Jones, 2019).

Conclusion:

Findings support Festinger's (1957) theory, suggesting that dissonance may fuel maladaptive perfectionism. The moderate dissonance levels may reflect academic pressures, while the low perfectionism indicates possible cultural factors influencing self-expectations. The positive correlation aligns with prior research (Flett & Hewitt, 2002; Sherry et al., 2016). Therefore, interventions such as cognitive restructuring and psychoeducational workshops may reduce irrational cognitions and mitigate maladaptive perfectionist tendencies.

Finally, the study highlights cognitive dissonance as a relevant predictor of neurotic perfectionism in Algerian female students. Expanding this research to include multiple genders and faculties would enrich our understanding and inform university counselling practices.

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