

## **Anxiety and Coping among Arab Students in Israel during the 2020 Coronavirus Lockdown**

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القلق والمواجهة لدى الطلاب الأكاديميين العرب في إسرائيل خلال فترة حجر فترة الكورونا 2020

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### **Abstract**

**M**any countries adopted a lockdown policy to combat the spread of the novel coronavirus disease (COVID-19). A lockdown constitutes a unique, unprecedented, complex, and ongoing situation of stress. Groups distinguished by ethnicity, age, gender and occupation may experience a lockdown in different ways and at different levels. The current study focused on Arab students studying at Israeli colleges and universities. We administered the State-Trait Anxiety Inventory and a questionnaire we developed to examine Ways of Coping During the Corona Lockdown (CDCL) to 202 male and female Arab students during the coronavirus lockdown in March and April 2020. Contrary to our expectations, our results showed that the students' anxiety decreased during the lockdown. Students used a combination of coping methods. Individual differences emerged in the students' level of state as well as trait anxiety and in the coping ways they used. Our results show that denial avoidance, wishful thinking and goal-oriented coping together with less use of thinking it over are associated with decreasing anxiety, while coping methods involving non-denial avoidance and thinking it over are associated with increasing anxiety. We discuss the theoretical and practical contributions of our study. More studies are needed to examine other ethnic, age, gender and occupational groups and use additional qualitative research paradigms.

**Key words:** Coronavirus, stress, state-trait, anxiety, coping, Arabs

**Declaration of interest:** None

### **Stress and coping**

People experience stress depending on their perception and coping ways. Lazarus and Folkman (1984) defined two critical cognitive processes: primary appraisal, through which the individual assesses the meaning of the event, and secondary appraisal, through which the individual assesses the personal and social resources available to deal with the event. These two steps, rather than the event itself, are what determine the level of stress experienced. In addition, they distinguished between two basic categories of ways of coping: problem-focused coping, which focuses on the demands of the situation and is often directed at defining the problem, generating alternative solutions, weighing its costs and benefits and choosing a way of coping. The second group is emotion-focused coping, which focuses on controlling the emotional and physical experience. They developed the Ways of Coping Questionnaire

(WCQ) that contains 64 coping items (24 problem-focused items and 40 emotion-focused items).<sup>1</sup> Since then, many scholars have revised this two-factor model of coping and identified other factors as well. Lazarus and other researchers identified eight groups of coping ways: confrontative coping, distancing, self-controlling, seeking social support, accepting responsibility, escape-avoidance, planful problem-solving and positive reappraisal. This revision is necessary when dealing with long-lasting stressful situations in which individuals use a dynamic and changing combination of several coping methods.<sup>2,3</sup> Sørli and Sexton<sup>4</sup> used factor analysis to examine the goodness-of-fit and adequacy of several models. They found that the five-factor model is the most appropriate for understanding long-lasting stress among patients under surgical conditions. The five-

factor model is the model we applied in our present research.

Individual differences between people when exposed to threatening situations are related to their personality (trait-oriented), their primary and secondary appraisals, and the ways of coping they employ in a specific situation (state-oriented). Accordingly, Cattell and Scheier<sup>5</sup> applied factor analysis to identify two distinct kinds of anxiety related to stressful situations: state anxiety and trait anxiety. State anxiety is evoked by a perceived stressful situation, while trait anxiety is a relatively stable personality trait. Spielberger et al.<sup>6</sup> developed a self-report inventory that differentiates between trait and state anxiety (STAI). In our study we applied the STAI to assess people's responses during the COVID-19 lockdown.

Culture plays a crucial role in how people experience and cope with anxiety. Research has shown varying prevalence rates among different ethnic, racial and socioeconomic groups.<sup>7, 8</sup> Our study focused on Arab students at Israeli colleges and universities.

### ***Social and cultural background of the Arabs in Israel***

The Arabs in Israel comprise about 20.8% of the Israeli population.<sup>9</sup> They are the descendants of the Palestinians who remained in their homeland after the 1948 Nakbah, when the majority of the Palestinian people were expelled or escaped to neighboring countries. The Palestinians who remained in their homeland became a national minority within a Jewish majority. They are subject to racial discrimination, social exclusion and oppression that have negative effects on everyday life in terms of income, unemployment, and harsh living conditions.<sup>10</sup>

Arab society is mostly collectivistic, traditional, authoritarian, and patriarchal.<sup>11</sup> Within this system, family members maintain strong bonds, remain loyal to the family's needs and desires and are emotionally interdependent such that individuals adopt a collective identity or self.<sup>12</sup>

This type of society is marked by inequalities based on age and gender: Men have power and control over women and children, who are expected to accept the power of men and to submit to the rules of the family.<sup>12,13</sup>

Globalization has exposed Arab society to Western culture, such that in recent decades there has been a partial transition toward an individualistic lifestyle. Nevertheless, the collective nature of society is still dominant, and the family remains the primary support system that provides security as well as economic and other personal needs.<sup>12, 14</sup>

### ***Arab students in Israeli higher education***

According to an ICBS report 2016,<sup>15</sup> 67.3% of the Arab students in Israeli institutions of higher education are women. When Arab students begin their studies at an Israeli college or university, they move into a different culture and begin studying in a different language (Hebrew). They must face many challenges because Israeli institutions tend to overlook multicultural aspects and to adopt a Jewish-Western orientation.<sup>13</sup>

While studying at Israeli colleges and universities, Arab students encounter severe and multiple stressors. Some of these are universal, including academic challenges, financial obligations, the problems of living away from home and time pressures.<sup>16,17</sup> Others are unique to the political, social, cultural, ethnic and political context of the Arabs in Israel.<sup>18,19</sup>

This unique cultural and political experience can be considered an ongoing stressful situation that affects the level of anxiety among Arab students during their studies.<sup>7,8,16,17</sup> The current study focuses on understanding the anxiety experienced by Arab students during the coronavirus lockdown and their ways of coping with this anxiety.

### ***Stress during the coronavirus lockdown***

This study focuses on the unique and unprecedented period of stress during the coronavirus lockdown (March and April 2020). News of thousands of deaths all over the world streamed every day into every household. Ambiguity, disinformation, and misinformation prevailed in the media and in official declarations and reports. Some people felt they lost control over their lives and lost their ability to foresee and predict the future. The virus posed a threat to people's health, to economic security and indeed to their very lives. The lockdown was marked, for some people, by upheaval in people's familial, interpersonal, and social routines as well as by a great deal of uncertainty where people experience anxiety as normal reaction to uncertainty.<sup>2</sup> Many people

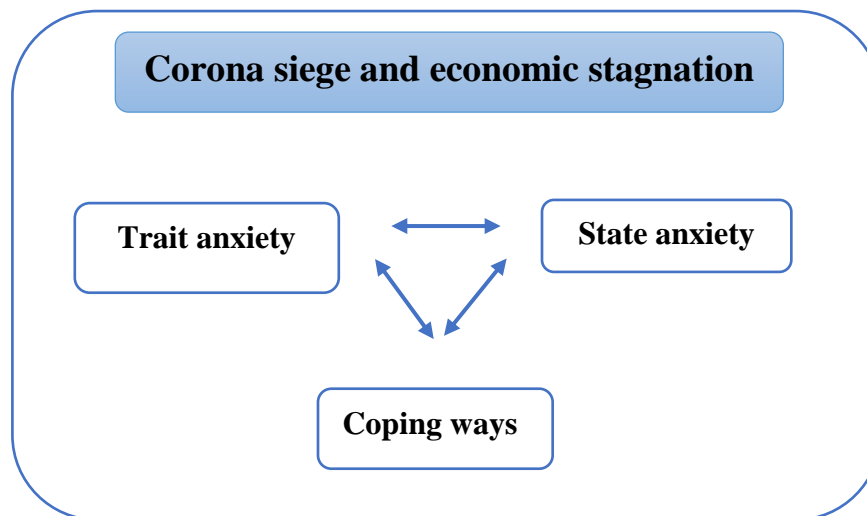
experienced isolation, stigma, anxiousness and feelings of loss (relatives, friends, entertainment). Students were obliged to adapt to a new, remote, virtual learning system.<sup>21, 22</sup>

The period of the coronavirus lockdown affected people in different ways and at different levels. Older people were isolated from their families and friends and suffered from loneliness and lack of support. People from the middle and lower classes found themselves unable to feed their families because their businesses were shut down for months. Children and teenagers found themselves shut up at home with their families. Mothers bore a tremendous burden at home with the whole family expecting them to cook, clean and help the children with distance learning with which they themselves were not proficient. Many people were forced to deal with new technology for

which they had no previous training (such as Zoom). On the other hand, many segments of society reported that they thought of the lockdown as a period of rest, vacation, free time and family time when they could read, watch TV programs and soap operas, and work in the garden.

### *The present study*

The theoretical model for our research is a three-component systemic model based on a combination of the theory of Spielberger et al.,<sup>6</sup> which differentiates between state and trait anxiety, and the theory of Lazarus, which associates stress with coping methods.<sup>2,23</sup> The State-Trait-Coping triangle operates within a social field that includes the stress situation (COVID-19 lockdown) and demographic variables (Figure 1).



**Figure 1:** A three component model: Trait, State, and coping

In this research we sought to discover how Arab students experienced the period of the coronavirus lockdown. How did the lockdown influence their state and trait anxiety? Were there individual differences in level of anxiety? How did they cope with this unique experience? What is the relationship between anxiety and their ways of coping with anxiety? Were there individual differences in coping methods?

Accordingly, we posited the following hypotheses:

- State anxiety level will exceed trait anxiety level during the coronavirus lockdown.
- Individual differences will emerge in levels of trait and state anxiety, such that:

- a) Participants from lower socioeconomic strata are expected to experience higher state anxiety.
  - b) Married participants who are older and studying for master's degrees are expected to have more duties and burdens than single ones and therefore to experience higher state anxiety.
  - c) Female participants who are expected to be more restricted within Arab society will experience higher state anxiety.
- Positive correlations will be found between coping methods and anxiety.

- Students will apply different clusters (profiles) of coping, some that decrease anxiety and others that increase it.

## Method

### Procedure

During the COVID-19 lockdown in Israel in March and April 2020, we administered three questionnaires (short demographic, state-trait anxiety, and coping methods) to Arab students at Israeli colleges and universities. The questionnaires were administered electronically via Google forms through the students' WhatsApp groups and Facebook pages. We received 202 full responses from BA and MA students studying at different colleges and universities in Israel. We asked them to self-report their anxiety level before and during the coronavirus lockdown and to self-report their ways of coping. All respondents completed all the questionnaires.

### Participants

Our sample consisted of 202 students (171 women, 31 men) see Table 1. Women were over-represented in our sample relative to the portion of female students (two-thirds of the Arab student population, ICBS, 2016<sup>15</sup>). The participants' ages ranged between 18 and 34 years. One-fourth were studying for MA degrees and the others for BA and diploma degrees. The economic level of the participants before the lockdown was 3.45 and after the lockdown was 2.87, as evaluated on a Likert scale of 1=very low, 3=average, and 4=very high. The demographics of age, degrees and economic level were close to the distribution in the overall Arab student population.<sup>15</sup>

**Table 1.** Demographic description of the sample

<i>Variable</i>		<b>Frequency</b>	<b>Mean</b>
<i>Gender</i>			
	Female	171 84.7%	
	male	31 15.4	
<i>Age</i>			25.88 SD 8.09
<i>Degree</i>			
	Diploma	7 3.5-%	
	BA	143 70.8%	
	MA	51 25.7%	
<i>Social Status</i>			
	Single	152 75.3%	
	Marries	50 24.8%	
<i>Economic level before Corona</i>			3.45 SD .86
<i>Economic level during Corona</i>			2.87 SD 1.12

## Tools

### *State Trait Anxiety Inventory (STAI):*

To answer the question of whether the coronavirus outbreak and lockdown heightened the level of anxiety, we adopted the state-trait model of anxiety and used it to compare the level of state anxiety during the lockdown to personality trait anxiety before the coronavirus outbreak. The State-Trait Anxiety Inventory (STAI), developed by Spielberger et al.<sup>6</sup> is used to assess anxiety in specific stressful situations such as war or tests (state anxiety) as well as the anxiety of normal life (trait anxiety). The STAI contains 40 items that assess anxiety. Respondents answer on a 4-point Likert scale (1=almost never, sometimes, often, and 4=almost always). The inventory is divided into two subscales of 20 items each, with one assessing S-anxiety and the other assessing T-anxiety. Each subscale contains items that describe both the presence of anxiety (e.g., I feel nervous) and the absence of anxiety (e.g., I feel

relaxed). The anxiety-absent items are negatively correlated with the anxiety-present items.

In the current study, we applied ten items from the “state-anxiety-present” and ten items from the “trait-anxiety-present” Arabic subscales. For the state-anxiety scale the students instructed to report on their anxiety during the coronavirus lockdown, while for the trait-anxiety scale they were instructed to report on their anxiety during their normal life before the lockdown. The Cronbach’s alpha coefficients for “S-anxiety-present” and “T-anxiety-present” were .916 and .801, respectively. The two-factor solution for “S-anxiety-present” with a varimax rotation yielded ten items of “S-anxiety” and five items of “T-anxiety” that explain 57.82% of the variance. Five items of the T-anxiety scale were discarded because they make a better contribution to the Cronbach’s alpha coefficient if deleted and because they loaded lower than .45 on the “T-anxiety” factor (Table 2).

**Table 2.** Loadings in two factor solution of the STAI

<b>S-Anxiety (Cronbach’s alpha=.92)</b>		
<b>I am tense</b>	<b>.79</b>	
<b>I feel strained</b>	<b>.67</b>	
<b>I feel upset</b>	<b>.79</b>	
<b>I am presently worrying over possible misfortunes</b>	<b>.69</b>	
<b>I feel frightened</b>	<b>.75</b>	
<b>I feel nervous</b>	<b>.69</b>	
<b>I am jittery</b>	<b>.70</b>	
<b>I feel indecisive</b>	<b>.76</b>	
<b>I am worried</b>	<b>.87</b>	
<b>I feel confused</b>	<b>.78</b>	
<b>T-Anxiety (Cronbach’s alpha=.80)</b>		
<b>I feel frightened</b>		<b>.68</b>
<b>I feel nervous</b>		<b>.72</b>
<b>I feel jittery</b>		<b>.72</b>
<b>I feel worried</b>		<b>.80</b>
<b>I feel confused</b>		<b>.75</b>
Eigenvalue after rotation	<b>5.74</b>	<b>2.94</b>
% of variance after rotation	<b>38.25</b>	<b>19.57</b>

### *Coping Ways during Coronavirus Lockdown (CDCL) Questionnaire*

The CDCL is based on the Sørli and Sexton<sup>4</sup> questionnaire, which was derived from the Ways of Coping Questionnaire.<sup>2,23</sup> The final version of the

scale included 26 items, with the best-fit model of five varimax rotated factors accounting for 53.9% of the total variance: wishful thinking, goal-oriented, seeking support, thinking it over and avoidance. The Cronbach’s alpha for all scales ranges from 0.75 to 0.81. Wishful thinking, avoidance and thinking it over

appeared to reflect passive coping, while goal-oriented coping and seeking-support coping reflected active coping.

The work of Sørli and Sexton<sup>4</sup> was based on adults who underwent surgery. The current study examined a unique and unprecedented stressful situation: the coronavirus lockdown. This situation of stress is

extremely complex in that it is marked by ambiguity and loss of control and is life threatening and economically threatening as well. Based on this complexity, we decided to expand the range of the items in our CDCL to include specific ways of coping with the coronavirus lockdown in Arab society. The development of the CDCL was done through six stages (See Table 3).

**Table 3.** Stages of developing the CDCL

<p><b>Stage 1:</b> The English items of Sørli and Sexton (4) questionnaire were translated to Arabic and back-translated to English by three bilingual psychologists. The Arabic items were then modified to conform to the original meaning in English.</p>
<p><b>Stage 2:</b> We conducted personal in-depth interviews with nine Arab students at higher education institutions to examine their ways of coping during the lockdown. Based on the interviews, we identified 15 coping ways relevant to the corona lockdown. Three Arab experts in the field of stress and coping defined each of these coping ways and added another 11 relevant items from the original Ways of Coping Questionnaire.<sup>23,27</sup></p>
<p><b>Stage 3:</b> The initial CDCL questionnaire included 52 items. We administered the questionnaire to a convenience sample of 202 Arab students and conducted four factor analyses. The first was a confirmatory factor analysis on the original 26 items from Sørli and Sexton (4) using the five-factors model. While the five factors explained 57.82% of the variance, the Cronbach's alpha coefficients of three of the five factors were far from satisfactory (.78, .78, .52, .48, and .06).</p>
<p><b>Stage 4:</b> The second analysis was an exploratory factor analysis on the 52 items of the CDCL. The analysis yielded 12 factors with eigenvalues above 1 that explained 67.41% of the variance. The Scree plot showed five factors that contribute a great deal to the explained variance, supporting the five-factors model. The third analysis was a confirmatory factor analysis based on the Scree plot and the five-factors best-fit model of Sørli and Sexton (4). We retained the items that were loaded significantly above 0.45 on a given factor and lower than 0.45 on other factors, and discarded items that did not meet this criterion (28). In addition, we discarded items that would enhance the Cronbach's alpha coefficient of the factor if deleted.</p>
<p><b>Stage 5:</b> The final version of the scale included 36 items for which the best-fit model of five varimax rotated factors accounted for 55.05% of the total variance. As predicted, the items that loaded high on each factor belonged to one of the original factors in the five-factors model (4): avoidance (13 items), wishful thinking (7 items), goal-oriented (7 items), seeking support (6 items) and thinking it over (3 items). The six items in the seeking support factor included giving social support to others, which is unique to the corona lockout. We therefore renamed this factor as social-oriented coping. The avoidance factor, which after rotation accounted for 19.3% of the variance, contained six items with negative loadings and seven items with positive loadings.</p>
<p><b>Stage 6:</b> We conducted a fourth factor analysis with varimax rotation on the 13 avoidance items and obtained two factors that explain 61.2% of the variance: denial avoidance (6 items) and non-denial avoidance (7 items).</p>

The final CDCL included six identified ways of coping: Denial avoidance, non-denial avoidance, wishful thinking, goal-oriented, social-oriented and thinking it over with alpha Cronbach's alpha coefficients .85, .90, .81, .81, .65, and .64, respectively (Table 4). Three of them are active coping ways (non-denial avoidance, goal-oriented and social-oriented) and three passive coping ways (denial avoidance,

wishful thinking and thinking it over). Based on the CDCL, each student was assigned six coping scores that are the means of the pertinent items in each sub-scale.

**Table 4.** Confirmatory factor analysis of CDCS and Cronbach's alphas

Denial Avoidance ( <i>Cronbach's alpha=.85</i> )					
*Refuse to think about it	-.759				
*Minimize seriousness of it	-.775				
*Don't let feelings interfere	-.674				
**Deny the serious threat	-.722				
**Sleep more than I used to before	-.667				
Hide my feelings and behavior from others	-.550				
Non-denial Avoidance ( <i>Cronbach's alpha=.90</i> )					
*keep feelings to myself	.720				
**Don't talk to others about the situation	.670				
**Spend time watching TV series	.686				
**Escape away from the stress of the family	.738				
Avoid following the Corona news	.688				
Amused by jokes and humor about the situation	.727				
Occupy myself with eating sweets and snacks	.763				
Wishful Thinking ( <i>Cronbach's alpha=.81</i> )					
*Hope for a miracle	.684				
*Blame it on fate/luck	.573		.329		-.322
*Daydream a better time	.715		.309		
*Wish the situation away	.755				
*Have fantasies or wishes	.729				
*Prepare for the worst	.514				
Find refuge in religion and praying	.649				
Goal Oriented ( <i>Cronbach's alpha=.81</i> )					
*Concentrate on what to do			.632		
*Try to analyze the problem			.708		
*Bargain or compromise			.759		
*Look for the silver lining			.627		
*Say things to oneself that help			.775		
**Manage my daily program according to a new plan fitting the situation		.305	.602		
Obey profession's directives (siege, washing, mask)			.515		
Social Oriented ( <i>Cronbach's alpha=.65</i> )					
*Talk to someone who could help				.575	
*Ask advice from relative/friend				.717	
Increase my efforts and enhance my social performance				.716	
Spend time in activity with family members				.487	
Call to rest assured about relatives and friends				.395	
Take part in volunteering activity to support weak people				.439	
Thinking it Over ( <i>Cronbach's alpha=.64</i> )					
*Draw on past experience					.667
*Focus efforts on solution					.680
Change my life in the future based on my experience during the siege		-.395			.436
Eigenvalue after rotation	<b>6.95</b>	<b>3.70</b>	<b>3.50</b>	<b>2.73</b>	<b>1.93</b>
% of variance after rotation	<b>19.29</b>	<b>10.28</b>	<b>9.72</b>	<b>7.58</b>	<b>5.37</b>

\* Original items from Sørli, & Sexton scale,

\*\* original items from Folkman and Lazarus

## Results

The means and standard deviations of the variables are shown in Table 5. The table shows that state anxiety is lower than trait anxiety. The coping ways that were

most used were denial, avoidance, and goal-oriented coping, and those that were least used were no-denial, avoidance, and social-oriented coping.

**Table 5.** Means and standard deviations of the research variables

Anxiety and coping	Mean	Std.
State Anxiety	2.53	.74
Trait Anxiety	3.09	.54
Denial Avoidance	3.30	.57
No Denial Avoidance	1.88	.66
Wishful Thinking	2.59	.59
Goal Oriented	3.07	.51
Social Oriented	1.95	.48
Think It Over	2.36	.77

### *Demographic variables, coping ways and trait anxiety*

To discover how demographic variables and coping ways are associated with trait anxiety, we conducted a multiple linear regression and found that the model is significant with adjusted  $R^2=.51$  [ $F(12, 188)=18.48$ ,

$\alpha=.000$ ]. The associations ( $\beta$ s) between wishful thinking and goal-oriented coping ways and trait anxiety were positive and significant [ $\beta=.24$ ,  $T=4.27$ ,  $\alpha=.000$ ;  $\beta=.54$ ,  $T=9.50$ ,  $\alpha=.000$  respectively]. The demographic variables and the other coping ways exhibited no significant associations with trait anxiety.



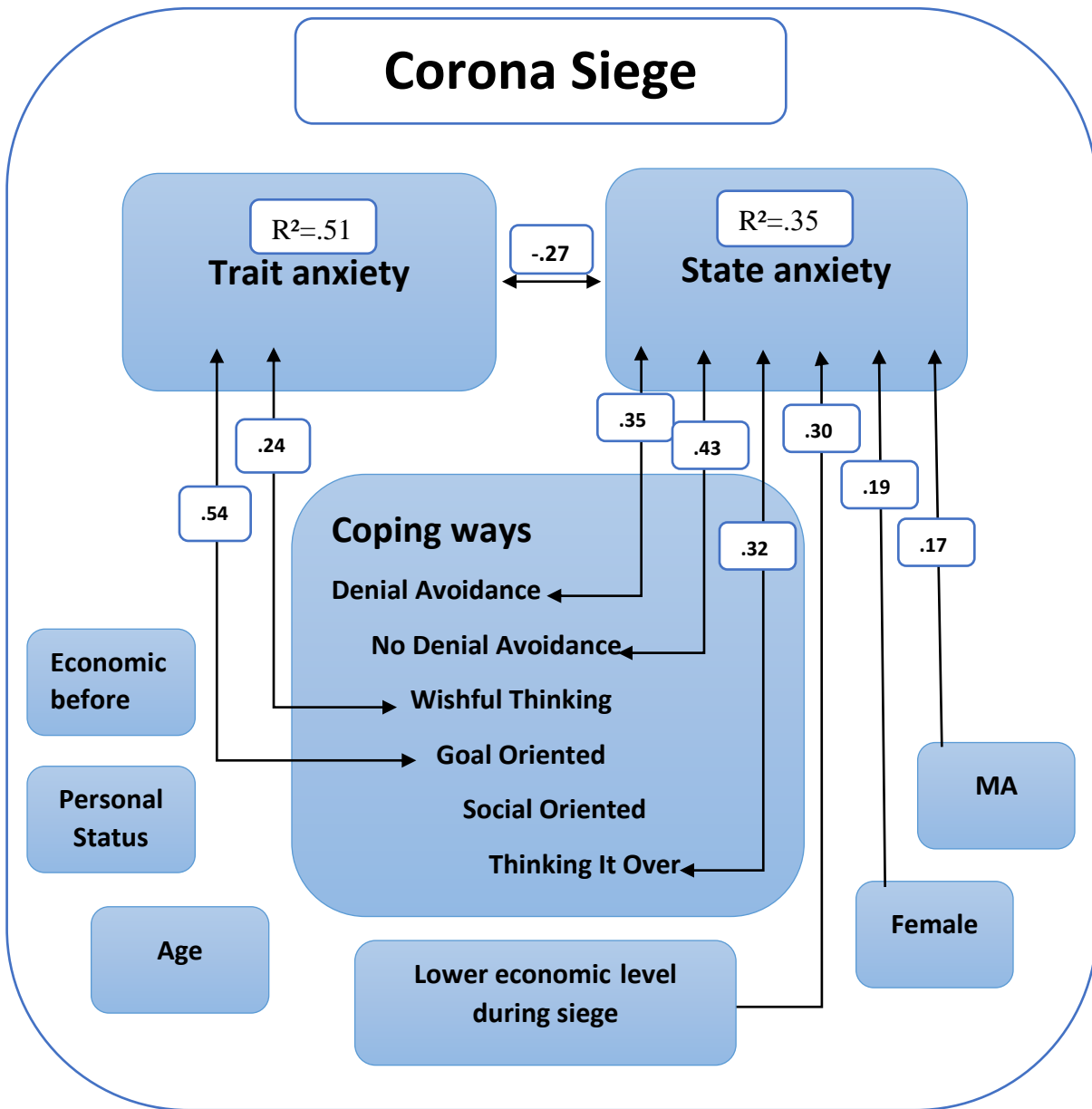


Figure 2. The associations between state-trait anxiety, coping, and background variables

**Demographic variables, coping ways and state anxiety during the lockdown**

To find out how demographic variables and coping ways are associated with state anxiety, we conducted a multiple linear regression and found that the model is significant with adjusted  $R^2=.35$  [ $F(12, 188) = 9.86, \alpha=.000$ ]. The  $\beta$ s of denial avoidance, non-denial avoidance and thinking it over coping ways were positive and significant [ $\beta=.35, T=4.27, \alpha=.000$ ;  $\beta=.43, T=5.16, \alpha=.000$ ; and  $\beta=.32, T=4.66, \alpha=.000$  respectively]. Students who applied denial avoidance, non-denial avoidance and thinking it over exhibited higher state anxiety during the lockdown.

Three demographic variables were associated with state anxiety: gender, academic degree and economic level during the lockdown [ $\beta=.17, T=2.43, \alpha=.016$ ;  $\beta=.19, T=3.18, \alpha=.002$ ; and  $-\beta=.29, T=3.28, \alpha=.001$  respectively]. Women who were studying for a master’s degree and had a low economic level had higher state anxiety during the lockdown.

**Did the lockdown heighten anxiety levels? Were there individual differences?**

We conducted a one-way GLM repeated-measures to compare level of anxiety before the coronavirus lockdown (T-Anxiety) with level of anxiety during the lockdown (S-Anxiety). The results showed that T-anxiety ( $M=3.09, SD=.54$ ) was significantly higher

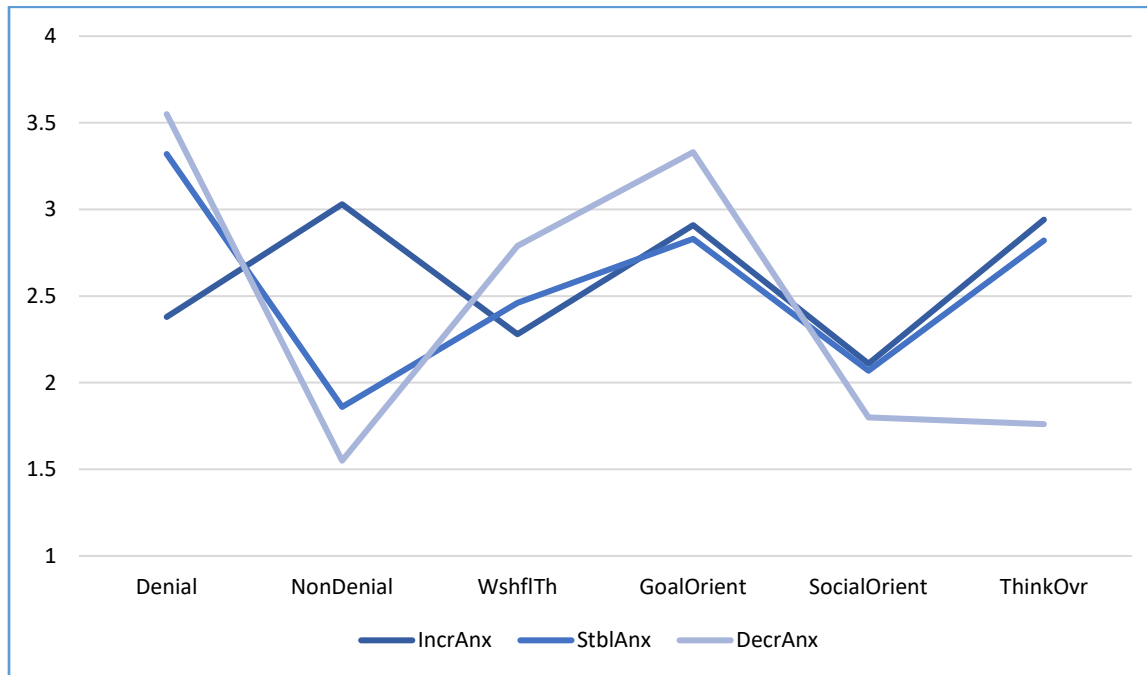
than S-anxiety ( $M=2.53, SD=.74$ ) [ $F(1,201)=58.90, \alpha=.000, \text{Eta Sq}=.23$ ], indicating that the students’ anxiety level decreased during the coronavirus lockdown. The correlation coefficient between state and trait anxiety was low and negative [ $R=-.27, \alpha=.000$ ].

To identify coping profiles among those whose anxiety increased, remained stable or decreased during the coronavirus lockdown, we calculated the difference between trait and state anxiety (DAnx). Based on a Two-Step Cluster Analysis, we identified three different profiles for these three anxiety groups. Table 6 and Figure 3 show the profiles of each group. Multivariate GLM showed significant differences between the three groups for all coping means: denial avoidance [ $F(2,198)=74.33, \alpha=.000, \text{Eta}^2=.43$ ], non-denial avoidance [ $F(2,198)=107.58, \alpha=.000, \text{Eta}^2=.52$ ], wishful thinking [ $F(2,198)=12.68, \alpha=.000, \text{Eta}^2=.12$ ], goal oriented [ $F(2,198)=27.93, \alpha=.000, \text{Eta}^2=.22$ ], social orientation [ $F(2,198)=8.97, \alpha=.000, \text{Eta}^2=.09$ ], and thinking it over [ $F(2,198)=102.68, \alpha=.000, \text{Eta}^2=.51$ ]. Post hoc analysis revealed that only for the coping means of wishful thinking, goal oriented, social oriented, and thinking it over did no significant differences emerge between the group of those whose anxiety increased and the group of those who remained stable. All the other differences were significant.

**Table 6.** Means and standard deviations of ways of coping for three groups

	<b>IncrAnx</b> N=27	<b>StblAnx</b> N=83	<b>DecrAnx</b> N=91	<b>Significance</b>
<b>Anxiety difference (DAnx)</b>	.40 1.05	-.16 .87	-1.19 .72	$\alpha=.000$
<b>Denial Avoidance</b>	2.38 .56	3.32 .39	3.55 .44	$\alpha=.000$
<b>Non-Denial Avoidance</b>	3.02 .54	1.86 .42	1.55 .47	$\alpha=.000$
<b>Wishful Thinking</b>	2.28* .78	2.46* .51	2.79 .53	$\alpha=.000$
<b>Goal Oriented</b>	2.91* .52	2.83* .45	3.32 .43	$\alpha=.000$
<b>Social Oriented</b>	2.11* .77	2.07* .37	1.80 .42	$\alpha=.000$
<b>Thinking It Over</b>	2.94 .76	2.82 .49	1.76 .51	$\alpha=.000$

\* Post hoc show no significant differences



**Figure 3.** Coping profiles of increased, stable, and decreased anxiety

Figure 3 shows that anxiety increased among students who applied the non-denial and thinking it over coping means. In contrast, anxiety decreased among those who applied denial, wishful thinking, and goal-oriented means of coping. The only significant

differences between the group with increased anxiety and the group with stable anxiety emerged for the denial and non-denial coping means, such that the first group applied more non-denial while the second apply more denial.

## Discussion

Our research sought to examine state and trait anxiety among Arab students in Israel and the coping methods they employed during the coronavirus lockdown. We used a systemic model consisting of three components: trait anxiety, state anxiety and ways of coping (Figure 1). To measure anxiety, we used the anxiety items of the STAI. To assess coping methods, we devised a questionnaire called Ways of Coping during the Coronavirus Lockdown (CDCL) that includes six ways of coping: three active ways (non-denial avoidance, goal-oriented and social-oriented) and three passive ways (denial avoidance, wishful thinking and thinking it over).

Based on the assumption that the lockdown would be considered a stressful period, we hypothesized that state anxiety during the coronavirus lockdown would exceed trait anxiety before the lockdown. This

hypothesis was refuted based on our results showing that state anxiety was lower than trait anxiety (Table 5). This finding indicates that the stress Arab students experience while studying at Israeli colleges and universities is higher than the stress of being at home under lockdown. It seems that academic-related stresses were more significant than stress caused by the coronavirus lockdown. During the lockdown, Arab students were able to cast aside their sense of foreignness and alienation and the moral and identity dilemmas<sup>19,24</sup> they experience on Israeli academic campuses, as well as other stressors aroused by the political, social, cultural, ethnic, and political context.<sup>19</sup>

Our results show that trait anxiety was positively associated with applying wishful thinking and goal-oriented ways of coping but not associated with any

other coping method or any demographic variables. The associations we found may point to a two-way interaction between anxiety and coping, such that students with high trait anxiety apply wishful thinking and goal-oriented coping or that students who use these two ways of coping continue to experience high levels of anxiety (Figure 2). The absence of any association between trait anxiety and the demographic variables may indicate that as a stable personality component, trait anxiety is related to genetic and developmental factors and not to demographic factors such as age, gender, academic degree, marital status, or economic level (Figure 2).

Unlike trait anxiety, level of state anxiety was found to be associated with more coping and demographic factors, indicating that it is more dynamic than trait anxiety (Figure 2). Our hypotheses concerning the associations between demographic factors and anxiety was partially corroborated: State anxiety was associated with gender, academic degree, and economic level during the lockdown. It was higher among women, MA students and those with lower SES during the lockdown. The effect of gender and academic degree may be attributed to the fact that most Arab women pursuing master's degrees are married and have multiple obligations as housewives and mothers, placing an additional burden on them during the lockdown. State anxiety was positively associated with denial avoidance, non-denial avoidance and thinking-it-over. Here, too, the association is two-directional.

Our hypothesis concerning the association between coping means and anxiety was partially corroborated: Positive associations were found between trait anxiety and two specific ways of coping - wishful thinking and goal-oriented - and between state anxiety and three specific ways of coping - denial avoidance, non-denial avoidance and thinking it over. These findings point to differential coping for these two different types of anxieties. It seems that wishful thinking and goal-oriented ways tend to be trait-oriented methods that are associated exclusively with trait anxiety, while denial avoidance, non-denial avoidance and thinking it over are more dynamic and state-oriented ways of coping. This finding regarding differential and exclusive ways of coping with state and trait anxiety is another indication that state and trait anxiety are two substantially different types of anxiety.<sup>5,6</sup> The correlation between the two anxieties was low ( $R=-.27$ ). Moreover, trait anxiety was more stable than state

anxiety, which was influenced by more coping and demographic factors.

The ways of coping used the most were denial, avoidance, and goal-oriented methods, while those least used were no-denial, avoidance, and social-oriented coping (Table 1). The low use of social-oriented coping within a collective society may be somewhat surprising considering that the family collective appears to serve as a supportive environment. Yet, in fact, the family may apply added pressure, especially during stressful periods,<sup>12</sup> such as the coronavirus lockdown, leading students to employ other solitary means of coping. One interesting finding is that both groups of coping methods - trait-oriented and state-oriented - include coping methods focusing on emotions together with those focused on problem-solving. The trait-oriented group includes wishful thinking (emotion-focused) and goal-oriented coping (problem-focused). The state-oriented group includes denial avoidance and non-denial avoidance (emotion-focused) and thinking it over (problem-focused).

Using this combination of problem-focused ways (goal-oriented) and emotion-focused ways (denial avoidance) seems reasonable in a complex and ongoing situation of stress, such as the coronavirus lockdown. The situation included controllable aspects, such as using the Zoom platform to manage study and learning assignments and adhering to protective measures that necessitated goal-oriented ways of coping (e.g., concentrate on what to do, look for the silver lining and manage my daily program). It also included uncontrollable aspects related to the spread of the virus and the behavior of others, which necessitate emotion-oriented coping methods (e.g., refuse to think about it, deny the serious threat and sleep more than I used to). This combination of coping methods is consistent with the work of other scholars,<sup>3,25</sup> who postulated that individuals do not cope by using either emotion-focused or problem-focused ways but rather through a combination of both.

The negative correlation coefficient between state and trait anxiety ( $R=-.27$ ) indicates that many of those with higher trait anxiety experienced a decrease in their state anxiety during the lockdown (Figure 2). To examine the coping means associated with this anxiety fluctuation, we conducted a cluster analysis and found three different coping profiles associated with increasing, stable, and decreasing anxiety. Figure 3 shows that increasing anxiety is associated with

employing non-denial and thinking it over coping means, while decreasing anxiety is associated with employing denial, wishful thinking, and goal-oriented means and with low use of thinking it over. Those who maintain a stable level of anxiety differ from those whose anxiety increases on two coping methods only: They employ more denial and fewer non-denial means. It seems that denial is more effective than preoccupation by distracting activities such as watching TV. The three coping means applied by those whose anxiety decreased are analogous to well-known wisdom in Arab culture. One of the main teachings of Islam calls upon believers to do what is reasonable [Aeqil] (goal-oriented) and rely on God [Tawakal] (denial and wishful thinking).<sup>26</sup> These results support the notion that coping is a complex process that encompasses behavioral and cognitive responses and, in most cases, entails interaction between different coping actions and episodes.<sup>23</sup>

The major strength of our study is that it is among the earliest studies to address the special case of stress during the coronavirus lockdown. The study developed a specific questionnaire to examine ways of coping during the coronavirus lockdown that can be

applied in future studies. One limitation of our study is its use of a selective sample of Arab students with an overrepresentation of women limits the ability to generalize our results for the whole population. Another limitation is that it is based on self-report, which limits the validity of our measures due to memory distortion, denial processes and social desirability influences.

Our results encompass both theoretical and practical considerations. Our findings contribute to understanding anxiety processes and ways of coping during situations of complex and ongoing stress such as the coronavirus lockdown. The results may help in constructing guidelines to help people find better ways of coping with this kind of stress. Our tools can be used by clinicians and counsellors in academic institutions attended by Arab students to identify the level and type of anxiety and the ways of coping and to adjust their interventions accordingly.

Future research should examine other ethnic, age, gender, and occupation groups, use additional tools such as interviews and field observations, and apply qualitative research paradigms.

## Conclusion

This research examined state and trait anxiety among Arab students in Israel and the coping methods they employed during the coronavirus lockdown in March-April 2020. Based on our results state anxiety was lower than trait anxiety indicating that the stress Arab students experience while studying at Israeli colleges and universities is higher than the stress of being at home under lockdown.

The ways of coping used were a combination of problem-focused ways and emotion-focused ways, which seems reasonable in a complex and ongoing situation of stress such as the coronavirus lockdown. We found that decreased anxiety is associated with

using more denial avoidance, wishful thinking and goal-oriented ways of coping while using thinking it over less, while increased anxiety is associated with using more non-denial avoidance and thinking it over coping means. Denying the uncontrollable threat, maintaining hope, and doing whatever is possible serve to decrease anxiety, while being preoccupied with distractions from the threat and at the same time continuing to think about it increase anxiety.

As the stress related to the coronavirus continues, we expect more changes in anxiety level and coping methods, thus necessitating ongoing study and research.

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## الملخص

دول كثيرة قامت بتطبيق الحجر الصحي على السكان في فترة انتشار فيروس كورونا (COVID-19) هذا الحجر يشكل كريباً نفسياً مميزاً، غير مسبوق، مركباً، ومتواصل. خبرة المجموعات الإثنية، العمرية، الجندرية والمهنة في هذا الحجر ربما تكون مختلفة. البحث الحالي يتركز في خبرة الطلاب العرب الذين يدرسون في الجامعات الإسرائيلية. لقد تم تمرير مقياس حالة وسمة القلق State-trait anxiety ، واستمارة أخرى لقياس طرق المواجهة الخاصة في فترة الحجر ل 202 طالب وطالبة عرب خلال فترة الحجر في آذار ونيسان 2020. نتائج البحث دلت، بعكس التوقعات، بأن مستوى القلق قد انخفض عند الطلاب والطالبات العرب في فترة الحجر. لقد استعمل الطلاب والطالبات تشكيلات مركبة من طرق المواجهة وظهرت فوارق فردية ذات دلالة في حالة القلق وفي سمة القلق وفي طرق المواجهة. النتائج أظهرت أن استعمال التحاشي والإنكار denial avoidance ، التمني wishful thinking ، والمواجهة الرامية للهدف goal-oriented والتقليل من التفكير المتواصل thinking it over ارتبط مع انخفاض درجة القلق، بينما استعمال التحاشي الواعي non-denial avoidance والتفكير المتواصل thinking it over ارتبط مع ارتفاع درجة القلق. المقال يوضح القيمة النظرية للبحث ويقترح إجراء أبحاث أخرى على مجموعات إثنية وعمرية وجندرية ومهنية واستخدام طرق بحث كيفية.

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