

Mental Health Status of Medical Students During the COVID-19 Pandemic

Final Study Results

Number of valid responses: 960

Demographics

How do you identify in terms of gender?

Male	39.3%
Female	59.9
Non-binary	0.8

What is your ethnicity?

Caucasian	63.0%
Asian	21.9
Two or more	5.4
Hispanic	3.6
Black	2.5
American Indian or Alaskan Native	0.0
Native Hawaiian or Other Pacific Islander	0.0
Unknown	3.5

Where do you attend medical school?

Allopathic (MD)	31.9%
Osteopathic (DO)	68.1%

Where have you spent the majority of your time since March 2020?

Rural	18.9%
Urban	81.1
Ranges of populations	
Less than 10,000	7.9%
10,000-24,999	35.9
25,000-49,999	38.3
50,000-99,999	17.9
100,000 or more	0.0

What year are you in medical school?

First	35.2%
Second	27.3
Third	22.1
Fourth	15.2
Fifth	0.2
Sixth	0.0

Which are you currently in:

Didactic years	63.7%
Clinical years	35.3

If you are currently in didactic years, what type of curriculum is your school utilizing?

In person	1.0%
Virtual	25.0
Combination	74.0

If you are in clinical years, what rotation are you currently doing?

Family Medicine	14.5%
Internal Medicine	18.2
General Surgery	9.5
Psychiatry	5.5
Pediatrics	13.3
Women's Health	8.4
Other	30.6

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COVID

Has been diagnosed with COVID-19	8.3%
Has a loved one (family or friend) who has been diagnosed with COVID-19	60.5%
Knows someone who has died of COVID-19	24.7%
Has had contact with patients with COVID-19	
Yes, as part of my education	24.6%
Yes, on a volunteer basis	9.5
No	65.9
Level of worry about contracting COVID-19	
Mean [Scale 1-10] (SD)	5.67 (2.42)
Not worried at all (1-3)	19.9%
Somewhat worried (4-6)	45.4
Very worried (7-10)	34.7

Depression/anxiety

Over the last 2 weeks, how often has been bothered by

Little interest or pleasure in doing things	
Not at all (0 days)	38.2%
Several days (1-7 days)	42.8
More than half the days (8-11 days)	14.0
Nearly every day (12-14 days)	5.0
Feeling down, depressed, or hopeless	
Not at all (0 days)	39.7%
Several days (1-7 days)	40.1
More than half the days (8-11 days)	14.7
Nearly every day (12-14 days)	5.5
Feeling nervous, anxious, or on edge	
Not at all (0 days)	20.1%
Several days (1-7 days)	38.2
More than half the days (8-11 days)	26.1
Nearly every day (12-14 days)	15.6
Not being able to stop or control worrying	
Not at all (0 days)	40.1%
Several days (1-7 days)	35.2
More than half the days (8-11 days)	16.0
Nearly every day (12-14 days)	8.7
Probable Case of Depression [PHQ-2]:	25.1%
Probable Case of Anxiety [GAD-2]:	40.4%

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Burnout

Degree of agreement with each of the statements on scale of 1 (totally disagree) to 7 (totally agree)

	<u>Percent Agreement</u>
I think the dedication I invest in my studies is more than what I should for my health	48.0%
I neglect my personal life when I pursue important achievements in my studies	72.4%
I risk my health when I pursue good results in my studies	57.2%
I overlook my own needs to fulfill academic demands	71.6%
I would like to be pursuing a different career that is more challenging for my abilities	2.4%
I feel that my studies are an obstacle to the development of my abilities	21.4%
I would like to be pursuing a different career where I can better develop my talents	6.9%
My studies don't offer me opportunities to develop my abilities	15.8%
When things in school don't turn out as well as they should, I stop trying	8.9%
I give up in response to difficulties in school	5.0%
I give up in the face of any difficulties in my academic tasks	4.3%
When the effort I invest in school is not enough, I give up	6.5%
Overload Dimension:	15.9%
Lack of Development Dimension:	6.5%
Neglect Dimension:	12.0%

Suicidal ideation

Since March 2020, seriously considered harming self and/or taking life?	7.2%
Started or increased substance use (alcohol, marijuana, or other drugs) to cope with pandemic-related stress or emotions	19.0%

Access to mental health resources

Medical school has a counselor or other mental health professional available	95.4%
Use of mental health resources:	
I have never accessed a counselor, therapist, or psychiatrist	47.9%
I accessed a counselor, therapist, or psychiatrist only prior to March 2020	20.4
I accessed a counselor, therapist, or psychiatrist only after March 2020	11.7
I accessed a counselor, therapist, or psychiatrist both before and after March 2020	20.0
Has person/people in life feel comfortable talking about emotions	92.1%

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Demographics

Which are you currently in:

Didactic years	605 (63.7%)
Clinical years	345 (36.3%)

Depression/anxiety

	Didactic Year Respondents	Clinical Year Respondents	p value	
Over the last 2 weeks, how often has been bothered by				
Little interest or pleasure in doing things				
Not at all (0 days)	36.9%	40.9%		
Several days (1-7 days)	44.1	40.9		
More than half the days (8-11 days)	13.9	13.9	.628	
Nearly every day (12-14 days)	5.1	4.3		
Feeling down, depressed, or hopeless				
Not at all (0 days)	39.3%	40.6%		
Several days (1-7 days)	40.7	39.1		
More than half the days (8-11 days)	14.7	14.8	.972	
Nearly every day (12-14 days)	5.3	5.5		
	PHQ-2 Mean Score (SD)	1.73 (1.56)	1.67 (1.59)	.555
	Probable Case of Depression [PHQ-2]:	24.8%	25.2%	.885
Feeling nervous, anxious, or on edge				
Not at all (0 days)	18.0%	24.4%		
Several days (1-7 days)	39.8	34.5		
More than half the days (8-11 days)	27.0	24.9	.091	
Nearly every day (12-14 days)	15.2	16.2		
Not being able to stop or control worrying				
Not at all (0 days)	39.0%	42.6%		
Several days (1-7 days)	36.2	32.8		
More than half the days (8-11 days)	16.2	15.9	.691	
Nearly every day (12-14 days)	8.6	8.7		
	GAD-2 Mean Score (SD)	2.34 (1.78)	2.24 (1.86)	.415
	Probable Case of Anxiety [GAD-2]:	40.8%	40.0%	.803

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Burnout

	Didactic Year Respondents	Clinical Year Respondents	ρ value
Degree of agreement with each of the statements on scale of 1 (totally disagree) to 7 (totally agree)			
I think the dedication I invest in my studies is more than what I should for my health			
Mean (SD)	4.27 (1.80)	4.07 (1.80)	.100
Percent Agreement	51.1%	42.9%	.082
I neglect my personal life when I pursue important achievements in my studies			
Mean (SD)	5.08 (1.65)	4.95 (1.79)	.266
Percent Agreement	74.5%	68.5%	.366
I risk my health when I pursue good results in my studies			
Mean (SD)	4.38 (1.79)	4.51 (1.87)	.316
Percent Agreement	57.0%	57.7%	.433
I overlook my own needs to fulfill academic demands			
Mean (SD)	4.95 (1.73)	4.98 (1.86)	.808
Percent Agreement	71.0%	72.0%	.137
I would like to be pursuing a different career that is more challenging for my abilities			
Mean (SD)	1.62 (1.07)	1.79 (1.30)	.033
Percent Agreement	1.7%	3.9%	.282
I feel that my studies are an obstacle to the development of my abilities			
Mean (SD)	2.93 (1.65)	3.20 (1.84)	.029
Percent Agreement	18.4%	26.8%	.014
I would like to be pursuing a different career where I can better develop my talents			
Mean (SD)	1.86 (1.36)	2.14 (1.51)	.005
Percent Agreement	5.5%	9.5%	.031
My studies don't offer me opportunities to develop my abilities			
Mean (SD)	2.58 (1.66)	2.65 (1.65)	.504
Percent Agreement	16.1%	15.2%	.700
When things in school don't turn out as well as they should, I stop trying			
Mean (SD)	2.09 (1.40)	2.17 (1.43)	.439
Percent Agreement	8.7%	9.5%	.894
I give up in response to difficulties in school			
Mean (SD)	1.84 (1.21)	1.84 (1.20)	.940
Percent Agreement	5.0%	5.1%	.935
I give up in the face of any difficulties in my academic tasks			
Mean (SD)	1.74 (1.16)	1.77 (1.18)	.674
Percent Agreement	4.2%	4.8%	.840
When the effort I invest in school is not enough, I give up			
Mean (SD)	1.90 (1.29)	1.92 (1.23)	.813
Percent Agreement	6.7%	6.3%	.854
<u>Overload Dimension:</u>			
Mean Score (SD)	12.92 (3.95)	13.02 (4.27)	.722
Percent Agreement	13.7%	19.6%	.018
<u>Lack of Development Dimension:</u>			
Mean Score (SD)	11.01 (3.56)	11.17 (3.91)	.538
Percent Agreement	5.9%	7.4%	.346
<u>Neglect Dimension:</u>			
Mean Score (SD)	11.30 (4.23)	11.79 (4.65)	.116
Percent Agreement	11.2%	13.7%	.267

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Suicidal ideation

	Didactic Year Respondents	Clinical Year Respondents	p value
Since March 2020, seriously considered harming self and/or taking life	7.4%	6.8%	.755

Substance Use

	Didactic Year Respondents	Clinical Year Respondents	p value
Started or increased substance use (alcohol, marijuana, or other drugs) to cope with pandemic-related stress or emotions	18.5%	19.9%	.587

Mental Health Status of Medical Students During the COVID-19 Pandemic Final Study Results

Demographics

White	605 (65.3%)
Non-White	321 (34.7%)

* Excludes the 34 respondents whose race is unknown.

Depression/anxiety

	White Respondents	Non-White Respondents	p value	
Over the last 2 weeks, how often has been bothered by				
Little interest or pleasure in doing things				
Not at all (0 days)	41.2%	32.1%		
Several days (1-7 days)	41.5	45.5		
More than half the days (8-11 days)	13.2	15.6	.027	
Nearly every day (12-14 days)	4.1	6.8		
Feeling down, depressed, or hopeless				
Not at all (0 days)	43.0%	33.3%		
Several days (1-7 days)	38.5	42.7		
More than half the days (8-11 days)	13.7	16.8	.026	
Nearly every day (12-14 days)	4.8	7.2		
	PHQ-2 Mean Score (SD)	1.61 (1.56)	1.95 (1.61)	.002
	Probable Case of Depression [PHQ-2]:	23.0%	29.3%	.035
Feeling nervous, anxious, or on edge				
Not at all (0 days)	19.5%	20.2%		
Several days (1-7 days)	37.5	39.6		
More than half the days (8-11 days)	26.8	24.6	.869	
Nearly every day (12-14 days)	16.2	15.6		
Not being able to stop or control worrying				
Not at all (0 days)	41.5%	37.4%		
Several days (1-7 days)	35.4	34.6		
More than half the days (8-11 days)	15.2	17.7	.378	
Nearly every day (12-14 days)	7.9	10.3		
	GAD-2 Mean Score (SD)	2.29 (1.79)	2.36 (1.85)	.565
	Probable Case of Anxiety [GAD-2]:	41.0%	40.2%	.812

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Burnout

	White Respondents	Non-White Respondents	p value
Degree of agreement with each of the statements on scale of 1 (totally disagree) to 7 (totally agree)			
I think the dedication I invest in my studies is more than what I should for my health			
Mean (SD)	4.20 (1.80)	4.18 (1.80)	.871
Percent Agreement	48.7%	47.0%	.870
I neglect my personal life when I pursue important achievements in my studies			
Mean (SD)	4.99 (1.75)	5.13 (1.57)	.249
Percent Agreement	71.4%	75.1%	.304
I risk my health when I pursue good results in my studies			
Mean (SD)	4.34 (1.87)	4.60 (1.68)	.034
Percent Agreement	54.9%	62.5%	.120
I overlook my own needs to fulfill academic demands			
Mean (SD)	4.93 (1.80)	5.02 (1.73)	.510
Percent Agreement	71.2%	72.6%	.076
I would like to be pursuing a different career that is more challenging for my abilities			
Mean (SD)	1.57 (1.07)	1.85 (1.26)	.001
Percent Agreement	1.9%	3.5%	.012
I feel that my studies are an obstacle to the development of my abilities			
Mean (SD)	2.98 (1.75)	3.09 (1.68)	.340
Percent Agreement	21.9%	20.5%	.101
I would like to be pursuing a different career where I can better develop my talents			
Mean (SD)	1.80 (1.31)	2.23 (1.52)	.000
Percent Agreement	5.1%	9.5%	.000
My studies don't offer me opportunities to develop my abilities			
Mean (SD)	2.52 (1.67)	2.71 (1.61)	.111
Percent Agreement	15.3%	16.4%	.146
When things in school don't turn out as well as they should, I stop trying			
Mean (SD)	1.99 (1.33)	2.30 (1.53)	.002
Percent Agreement	7.9%	11.0%	.000
I give up in response to difficulties in school			
Mean (SD)	1.71 (1.09)	2.04 (1.37)	.000
Percent Agreement	3.4%	8.2%	.004
I give up in the face of any difficulties in my academic tasks			
Mean (SD)	1.61 (1.01)	1.96 (1.33)	.000
Percent Agreement	2.7%	7.3%	.003
When the effort I invest in school is not enough, I give up			
Mean (SD)	1.77 (1.15)	2.09 (1.43)	.001
Percent Agreement	4.9%	9.8%	.021
<u>Overload Dimension:</u>			
Mean Score (SD)	12.63 (4.01)	13.46 (4.10)	.003
Percent Agreement	14.0%	18.9%	.050
<u>Lack of Development Dimension:</u>			
Mean Score (SD)	10.70 (3.56)	11.63 (3.69)	.000
Percent Agreement	5.4%	7.9%	.138
<u>Neglect Dimension:</u>			
Mean Score (SD)	11.08 (4.33)	12.08 (4.35)	.001
Percent Agreement	10.4%	14.5%	.070

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Suicidal ideation

	White Respondents	Non-White Respondents	p value
Since March 2020, seriously considered harming self and/or taking life	6.1%	9.2%	.083

Substance Use

	White Respondents	Non-White Respondents	p value
Started or increased substance use (alcohol, marijuana, or other drugs) to cope with pandemic-related stress or emotions	20.1%	16.5%	.185

Mental Health Status of Medical Students During the COVID-19 Pandemic Final Study Results

Demographics

Male	377 (39.6%)
Female	575 (60.4%)

* Excludes the 8 non-binary respondent.

Depression/anxiety

	Male Respondents	Female Respondents	p value
Over the last 2 weeks, how often has been bothered by			
Little interest or pleasure in doing things			
Not at all (0 days)	42.4%	35.8%	.096
Several days (1-7 days)	41.7	43.3	
More than half the days (8-11 days)	11.1	15.8	
Nearly every day (12-14 days)	4.8	5.1	
Feeling down, depressed, or hopeless			
Not at all (0 days)	47.5%	35.0%	.002
Several days (1-7 days)	36.1	42.8	
More than half the days (8-11 days)	12.2	16.1	
Nearly every day (12-14 days)	4.2	6.1	
PHQ-2 Mean Score (SD)	1.51 (1.55)	1.83 (1.58)	.002
Probable Case of Depression [PHQ-2]:	20.4%	27.8%	.010
Feeling nervous, anxious, or on edge			
Not at all (0 days)	28.4%	15.0%	.000
Several days (1-7 days)	39.8	37.0	
More than half the days (8-11 days)	20.7	29.7	
Nearly every day (12-14 days)	11.1	18.3	
Not being able to stop or control worrying			
Not at all (0 days)	50.4%	33.4%	.000
Several days (1-7 days)	35.0	35.5	
More than half the days (8-11 days)	9.0	20.7	
Nearly every day (12-14 days)	5.6	10.4	
GAD-2 Mean Score (SD)	1.84 (1.70)	2.59 (1.80)	.000
Probable Case of Anxiety [GAD-2]:	30.8%	46.6%	.000

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Burnout

	Male Respondents	Female Respondents	p value
Degree of agreement with each of the statements on scale of 1 (totally disagree) to 7 (totally agree)			
I think the dedication I invest in my studies is more than what I should for my health			
Mean (SD)	4.05 (1.86)	4.27 (1.76)	.067
Percent Agreement	43.8%	50.6%	.028
I neglect my personal life when I pursue important achievements in my studies			
Mean (SD)	4.69 (1.82)	5.26 (1.58)	.000
Percent Agreement	65.1%	77.0%	.000
I risk my health when I pursue good results in my studies			
Mean (SD)	4.25 (1.91)	4.54 (1.74)	.019
Percent Agreement	53.2%	59.6%	.100
I overlook my own needs to fulfill academic demands			
Mean (SD)	4.69 (1.86)	5.14 (1.69)	.000
Percent Agreement	65.7%	75.4%	.000
I would like to be pursuing a different career that is more challenging for my abilities			
Mean (SD)	1.84 (1.26)	1.57 (1.06)	.001
Percent Agreement	3.5%	1.6%	.017
I feel that my studies are an obstacle to the development of my abilities			
Mean (SD)	3.15 (1.73)	2.94 (1.71)	.060
Percent Agreement	23.0%	20.2%	.533
I would like to be pursuing a different career where I can better develop my talents			
Mean (SD)	2.16 (1.51)	1.83 (1.34)	.001
Percent Agreement	9.2%	5.3%	.019
My studies don't offer me opportunities to develop my abilities			
Mean (SD)	2.75 (1.64)	2.51 (1.66)	.026
Percent Agreement	17.6%	14.7%	.096
When things in school don't turn out as well as they should, I stop trying			
Mean (SD)	2.07 (1.38)	2.15 (1.43)	.407
Percent Agreement	9.5%	8.7%	.280
I give up in response to difficulties in school			
Mean (SD)	1.74 (1.10)	1.89 (1.24)	.055
Percent Agreement	4.1%	5.3%	.131
I give up in the face of any difficulties in my academic tasks			
Mean (SD)	1.61 (1.05)	1.82 (1.21)	.005
Percent Agreement	3.5%	4.6%	.035
When the effort I invest in school is not enough, I give up			
Mean (SD)	1.76 (1.17)	1.98 (1.32)	.009
Percent Agreement	5.7%	7.1%	.008
<u>Overload Dimension:</u>			
Mean Score (SD)	12.64 (4.41)	13.14 (3.79)	.076
Percent Agreement	15.9%	15.2%	.765
<u>Lack of Development Dimension:</u>			
Mean Score (SD)	10.89 (3.85)	11.16 (3.54)	.282
Percent Agreement	6.2%	6.2%	.989
<u>Neglect Dimension:</u>			
Mean Score (SD)	11.24 (4.43)	11.61 (4.35)	.202
Percent Agreement	11.9%	11.9%	.988

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Suicidal ideation

	Male Respondents	Female Respondents	p value
Since March 2020, seriously considered harming self and/or taking life	6.0%	7.8%	.284

Substance Use

	Male Respondents	Female Respondents	p value
Started or increased substance use (alcohol, marijuana, or other drugs) to cope with pandemic-related stress or emotions	16.0%	20.4%	.092

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Demographics

Never accessed mental health care	451 (47.9%)
Has accessed mental health care	490 (52.1%)

Depression/anxiety

	Never accessed mental health care Respondents	Has accessed mental health care Respondents	p value
Over the last 2 weeks, how often has been bothered by			
Little interest or pleasure in doing things			
Not at all (0 days)	48.1%	29.8%	
Several days (1-7 days)	41.3	43.9	
More than half the days (8-11 days)	8.4	18.8	.000
Nearly every day (12-14 days)	2.2	7.5	
Feeling down, depressed, or hopeless			
Not at all (0 days)	51.5%	29.6%	
Several days (1-7 days)	35.0	44.5	
More than half the days (8-11 days)	11.3	17.5	.000
Nearly every day (12-14 days)	2.2	8.4	
PHQ-2 Mean Score (SD)	1.29 (1.37)	2.09 (1.65)	.000
Probable Case of Depression [PHQ-2]:	15.7%	33.5%	.000
Feeling nervous, anxious, or on edge			
Not at all (0 days)	29.0%	12.5%	
Several days (1-7 days)	40.4	36.1	
More than half the days (8-11 days)	19.7	31.4	.000
Nearly every day (12-14 days)	10.9	20.0	
Not being able to stop or control worrying			
Not at all (0 days)	50.1%	31.4%	
Several days (1-7 days)	34.2	35.7	
More than half the days (8-11 days)	10.6	21.0	.000
Nearly every day (12-14 days)	5.1	11.9	
GAD-2 Mean Score (SD)	1.83 (1.69)	2.72 (1.81)	.000
Probable Case of Anxiety [GAD-2]:	29.7%	49.8%	.000

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Burnout

	Never accessed mental health care Respondents	Has accessed mental health care Respondents	p value
Degree of agreement with each of the statements on scale of 1 (totally disagree) to 7 (totally agree)			
I think the dedication I invest in my studies is more than what I should for my health			
Mean (SD)	4.06 (1.77)	4.31 (1.82)	.034
Percent Agreement	43.5%	52.0%	.160
I neglect my personal life when I pursue important achievements in my studies			
Mean (SD)	4.75 (1.75)	5.29 (1.61)	.000
Percent Agreement	66.3%	78.0%	.000
I risk my health when I pursue good results in my studies			
Mean (SD)	4.04 (1.80)	4.79 (1.76)	.000
Percent Agreement	48.1%	65.7%	.000
I overlook my own needs to fulfill academic demands			
Mean (SD)	4.67 (1.78)	5.24 (1.72)	.000
Percent Agreement	66.5%	76.1%	.000
I would like to be pursuing a different career that is more challenging for my abilities			
Mean (SD)	1.68 (1.15)	1.68 (1.17)	.945
Percent Agreement	2.7%	2.2%	.878
I feel that my studies are an obstacle to the development of my abilities			
Mean (SD)	2.79 (1.64)	3.24 (1.77)	.000
Percent Agreement	16.2%	26.1%	.001
I would like to be pursuing a different career where I can better develop my talents			
Mean (SD)	1.86 (1.33)	2.04 (1.47)	.057
Percent Agreement	6.0%	7.3%	.391
My studies don't offer me opportunities to develop my abilities			
Mean (SD)	2.35 (1.48)	2.82 (1.77)	.000
Percent Agreement	11.3%	19.8%	.000
When things in school don't turn out as well as they should, I stop trying			
Mean (SD)	1.98 (1.30)	2.23 (1.49)	.007
Percent Agreement	7.3%	10.4%	.129
I give up in response to difficulties in school			
Mean (SD)	1.72 (1.12)	1.95 (1.27)	.004
Percent Agreement	4.0%	5.9%	.039
I give up in the face of any difficulties in my academic tasks			
Mean (SD)	1.63 (1.05)	1.87 (1.25)	.002
Percent Agreement	3.5%	5.1%	.008
When the effort I invest in school is not enough, I give up			
Mean (SD)	1.76 (1.13)	2.03 (1.36)	.001
Percent Agreement	4.9%	8.0%	.004
<u>Overload Dimension:</u>			
Mean Score (SD)	12.31 (4.08)	13.53 (3.94)	.000
Percent Agreement	12.0%	19.2%	.002
<u>Lack of Development Dimension:</u>			
Mean Score (SD)	10.41 (3.55)	11.67 (3.71)	.000
Percent Agreement	4.2%	8.6%	.007
<u>Neglect Dimension:</u>			
Mean Score (SD)	10.57 (4.04)	12.29 (4.54)	.000
Percent Agreement	6.7%	16.9%	.000

Mental Health Status of Medical Students During the COVID-19 Pandemic

Final Study Results

Suicidal ideation

	Never accessed mental health care Respondents	Has accessed mental health care Respondents	p value
Since March 2020, seriously considered harming self and/or taking life	2.9%	11.2%	.000

Substance Use

	Never accessed mental health care Respondents	Has accessed mental health care Respondents	p value
Started or increased substance use (alcohol, marijuana, or other drugs) to cope with pandemic-related stress or emotions	12.2%	25.3%	.000

Mental Health Status of Medical Students During the COVID-19 Pandemic Final Study Results

Demographics

COVID diagnosis	80 (8.3%)
no COVID diagnosis	880 (91.7%)

Depression/anxiety

	COVID diagnosis Respondents	no COVID diagnosis Respondents	p value
Over the last 2 weeks, how often has been bothered by			
Little interest or pleasure in doing things			
Not at all (0 days)	42.5%	37.8%	
Several days (1-7 days)	36.3	43.4	
More than half the days (8-11 days)	16.2	13.8	.654
Nearly every day (12-14 days)	5.0	5.0	
Feeling down, depressed, or hopeless			
Not at all (0 days)	41.3%	39.5%	
Several days (1-7 days)	35.0	40.6	
More than half the days (8-11 days)	15.0	14.7	.517
Nearly every day (12-14 days)	8.7	5.2	
PHQ-2 Mean Score (SD)	1.75 (1.75)	1.71 (1.56)	.849
Probable Case of Depression [PHQ-2]:	26.3%	25.0%	.805
Feeling nervous, anxious, or on edge			
Not at all (0 days)	28.8%	19.3%	
Several days (1-7 days)	26.2	39.3	
More than half the days (8-11 days)	20.0	26.6	.005
Nearly every day (12-14 days)	25.0	14.8	
Not being able to stop or control worrying			
Not at all (0 days)	40.0%	40.1%	
Several days (1-7 days)	36.3	35.1	
More than half the days (8-11 days)	11.2	16.5	.428
Nearly every day (12-14 days)	12.5	8.3	
GAD-2 Mean Score (SD)	2.38 (2.03)	2.30 (1.78)	.714
Probable Case of Anxiety [GAD-2]:	40.0%	40.5%	.937

Mental Health Status of Medical Students During the COVID-19 Pandemic

Final Study Results

Burnout

		COVID diagnosis Respondents	no COVID diagnosis Respondents	p value
Degree of agreement with each of the statements on scale of 1 (totally disagree) to 7 (totally agree)				
I think the dedication I invest in my studies is more than what I should for my health				
	Mean (SD)	4.19 (1.84)	4.19 (1.80)	.973
	Percent Agreement	51.3%	47.7%	.391
I neglect my personal life when I pursue important achievements in my studies				
	Mean (SD)	5.10 (1.76)	5.03 (1.69)	.720
	Percent Agreement	78.8%	71.8%	.282
I risk my health when I pursue good results in my studies				
	Mean (SD)	4.44 (1.99)	4.43 (1.80)	.958
	Percent Agreement	57.5%	57.1%	.135
I overlook my own needs to fulfill academic demands				
	Mean (SD)	5.04 (1.74)	4.96 (1.78)	.711
	Percent Agreement	72.5%	71.5%	.687
I would like to be pursuing a different career that is more challenging for my abilities				
	Mean (SD)	1.79 (1.35)	1.67 (1.14)	.405
	Percent Agreement	3.8%	2.3%	.749
I feel that my studies are an obstacle to the development of my abilities				
	Mean (SD)	3.08 (1.83)	3.03 (1.72)	.806
	Percent Agreement	25.0%	21.1%	.845
I would like to be pursuing a different career where I can better develop my talents				
	Mean (SD)	2.18 (1.64)	1.94 (1.39)	.228
	Percent Agreement	8.8%	6.7%	.414
My studies don't offer me opportunities to develop my abilities				
	Mean (SD)	2.75 (1.80)	2.59 (1.64)	.401
	Percent Agreement	20.0%	15.4%	.670
When things in school don't turn out as well as they should, I stop trying				
	Mean (SD)	2.09 (1.54)	2.12 (1.40)	.852
	Percent Agreement	11.3%	8.7%	.711
I give up in response to difficulties in school				
	Mean (SD)	1.96 (1.42)	1.83 (1.18)	.341
	Percent Agreement	8.8%	4.6%	.040
I give up in the face of any difficulties in my academic tasks				
	Mean (SD)	1.83 (1.30)	1.74 (1.15)	.551
	Percent Agreement	7.5%	4.1%	.059
When the effort I invest in school is not enough, I give up				
	Mean (SD)	1.93 (1.33)	1.90 (1.26)	.849
	Percent Agreement	7.5%	6.4%	.463
<u>Overload Dimension:</u>				
	Mean Score (SD)	13.36 (4.16)	12.93 (4.06)	.461
	Percent Agreement	20.0%	15.5%	.295
<u>Lack of Development Dimension:</u>				
	Mean Score (SD)	11.46 (3.76)	11.03 (3.68)	.321
	Percent Agreement	7.5%	6.4%	.695
<u>Neglect Dimension:</u>				
	Mean Score (SD)	11.53 (4.56)	11.47 (4.37)	.910
	Percent Agreement	13.8%	11.8%	.611

Mental Health Status of Medical Students During the COVID-19 Pandemic

Final Study Results

Suicidal ideation

	COVID diagnosis Respondents	no COVID diagnosis Respondents	p value
Since March 2020, seriously considered harming self and/or taking life	8.8%	7.1%	.582

Substance Use

	COVID diagnosis Respondents	no COVID diagnosis Respondents	p value
Started or increased substance use (alcohol, marijuana, or other drugs) to cope with pandemic-related stress or emotions	32.5%	17.8%	.001

Mental Health Status of Medical Students During the COVID-19 Pandemic Final Study Results

Demographics

Loved one diagnosed with COVID	581 (60.5%)
No loved one diagnosed with COVID	379 (39.5%)

Depression/anxiety

	Loved one diagnosed with COVID	No loved one diagnosed with COVID	p value	
Over the last 2 weeks, how often has been bothered by				
Little interest or pleasure in doing things				
Not at all (0 days)	36.0%	41.7%		
Several days (1-7 days)	44.4	40.4		
More than half the days (8-11 days)	14.4	13.2	.365	
Nearly every day (12-14 days)	5.2	4.7		
Feeling down, depressed, or hopeless				
Not at all (0 days)	38.6%	41.4%		
Several days (1-7 days)	39.9	40.4		
More than half the days (8-11 days)	16.0	12.7	.526	
Nearly every day (12-14 days)	5.5	5.5		
	PHQ-2 Mean Score (SD)	1.77 (1.60)	1.63 (1.55)	.181
	Probable Case of Depression [PHQ-2]:	25.8%	24.0%	.528
Feeling nervous, anxious, or on edge				
Not at all (0 days)	20.1%	20.0%		
Several days (1-7 days)	37.0	40.1		
More than half the days (8-11 days)	25.8	26.4	.477	
Nearly every day (12-14 days)	17.1	13.5		
Not being able to stop or control worrying				
Not at all (0 days)	39.4%	41.2%		
Several days (1-7 days)	33.9	37.2		
More than half the days (8-11 days)	16.5	15.3	.174	
Nearly every day (12-14 days)	10.2	6.3		
	GAD-2 Mean Score (SD)	2.37 (1.85)	2.20 (1.73)	.151
	Probable Case of Anxiety [GAD-2]:	41.3%	39.1%	.486

Mental Health Status of Medical Students During the COVID-19 Pandemic

Final Study Results

Burnout

	Loved one diagnosed with COVID	No loved one diagnosed with COVID	p value
Degree of agreement with each of the statements on scale of 1 (totally disagree) to 7 (totally agree)			
I think the dedication I invest in my studies is more than what I should for my health			
Mean (SD)	4.23 (1.81)	4.14 (1.80)	.497
Percent Agreement	50.7%	44.0%	.135
I neglect my personal life when I pursue important achievements in my studies			
Mean (SD)	5.12 (1.63)	4.91 (1.78)	.070
Percent Agreement	74.7%	68.9%	.286
I risk my health when I pursue good results in my studies			
Mean (SD)	4.50 (1.78)	4.32 (1.87)	.129
Percent Agreement	58.4%	55.2%	.268
I overlook my own needs to fulfill academic demands			
Mean (SD)	5.07 (1.72)	4.80 (1.84)	.024
Percent Agreement	74.6%	67.0%	.197
I would like to be pursuing a different career that is more challenging for my abilities			
Mean (SD)	1.62 (1.12)	1.78 (1.21)	.040
Percent Agreement	2.3%	2.7%	.230
I feel that my studies are an obstacle to the development of my abilities			
Mean (SD)	2.98 (1.70)	3.10 (1.77)	.317
Percent Agreement	20.5%	22.8%	.681
I would like to be pursuing a different career where I can better develop my talents			
Mean (SD)	1.87 (1.34)	2.10 (1.52)	.018
Percent Agreement	5.1%	9.7%	.039
My studies don't offer me opportunities to develop my abilities			
Mean (SD)	2.53 (1.62)	2.71 (1.71)	.093
Percent Agreement	14.2%	18.2%	.385
When things in school don't turn out as well as they should, I stop trying			
Mean (SD)	2.10 (1.37)	2.14 (1.47)	.710
Percent Agreement	8.1%	10.2%	.700
I give up in response to difficulties in school			
Mean (SD)	1.81 (1.19)	1.89 (1.23)	.300
Percent Agreement	5.1%	4.8%	.830
I give up in the face of any difficulties in my academic tasks			
Mean (SD)	1.73 (1.15)	1.78 (1.18)	.530
Percent Agreement	4.4%	4.3%	.765
When the effort I invest in school is not enough, I give up			
Mean (SD)	1.89 (1.26)	1.91 (1.27)	.769
Percent Agreement	6.3%	6.7%	.971
<u>Overload Dimension:</u>			
Mean Score (SD)	12.98 (3.88)	12.94 (4.34)	.886
Percent Agreement	14.4%	18.2%	.114
<u>Lack of Development Dimension:</u>			
Mean Score (SD)	11.00 (3.54)	11.18 (3.90)	.454
Percent Agreement	5.1%	8.6%	.033
<u>Neglect Dimension:</u>			
Mean Score (SD)	11.48 (4.28)	11.47 (4.54)	.976
Percent Agreement	12.3%	11.5%	.728

Mental Health Status of Medical Students During the COVID-19 Pandemic

Final Study Results

Suicidal ideation

	Loved one diagnosed with COVID	No loved one diagnosed with COVID	p value
Since March 2020, seriously considered harming self and/or taking life	7.7%	6.4%	.447

Substance Use

	Loved one diagnosed with COVID	No loved one diagnosed with COVID	p value
Started or increased substance use (alcohol, marijuana, or other drugs) to cope with pandemic-related stress or emotions	20.6%	16.6%	.128

Mental Health Status of Medical Students During the COVID-19 Pandemic Final Study Results

Demographics

Know someone who has died of COVID	237 (24.7%)
Do not know someone who has died of COVID	723 (75.3%)

Depression/anxiety

	Know someone who has died of COVID	Do not know someone who has died of COVID	p value
Over the last 2 weeks, how often has been bothered by			
Little interest or pleasure in doing things			
Not at all (0 days)	30.8%	40.7%	
Several days (1-7 days)	45.2	42.0	
More than half the days (8-11 days)	17.7	12.7	.026
Nearly every day (12-14 days)	6.3	4.6	
Feeling down, depressed, or hopeless			
Not at all (0 days)	28.3%	43.4%	
Several days (1-7 days)	43.0	39.1	
More than half the days (8-11 days)	21.5	12.5	.000
Nearly every day (12-14 days)	7.2	5.0	
PHQ-2 Mean Score (SD)	2.07 (1.64)	1.60 (1.54)	.000
Probable Case of Depression [PHQ-2]:	33.8%	22.3%	.000
Feeling nervous, anxious, or on edge			
Not at all (0 days)	18.1%	20.7%	
Several days (1-7 days)	33.8	39.7	
More than half the days (8-11 days)	24.9	26.4	.003
Nearly every day (12-14 days)	23.2	13.1	
Not being able to stop or control worrying			
Not at all (0 days)	33.3%	42.3%	
Several days (1-7 days)	32.1	36.2	
More than half the days (8-11 days)	20.3	14.7	.000
Nearly every day (12-14 days)	14.3	6.8	
GAD-2 Mean Score (SD)	2.69 (1.98)	2.18 (1.73)	.000
Probable Case of Anxiety [GAD-2]:	48.1%	37.9%	.005

Mental Health Status of Medical Students During the COVID-19 Pandemic

Final Study Results

Burnout

		Know someone who has died of COVID	Do not know someone who has died of COVID	p value
Degree of agreement with each of the statements on scale of 1 (totally disagree) to 7 (totally agree)				
I think the dedication I invest in my studies is more than what I should for my health	Mean (SD)	4.50 (1.70)	4.09 (1.82)	.003
	Percent Agreement	53.2%	46.3%	.000
I neglect my personal life when I pursue important achievements in my studies	Mean (SD)	5.16 (1.65)	4.99 (1.71)	.182
	Percent Agreement	74.9%	71.6%	.442
I risk my health when I pursue good results in my studies	Mean (SD)	4.77 (1.76)	4.32 (1.82)	.001
	Percent Agreement	64.1%	54.9%	.001
I overlook my own needs to fulfill academic demands	Mean (SD)	5.40 (1.50)	4.83 (1.83)	.000
	Percent Agreement	82.3%	68.1%	.002
I would like to be pursuing a different career that is more challenging for my abilities	Mean (SD)	1.78 (1.24)	1.65 (1.14)	.134
	Percent Agreement	3.5%	2.1%	.158
I feel that my studies are an obstacle to the development of my abilities	Mean (SD)	3.14 (1.77)	2.99 (1.71)	.270
	Percent Agreement	22.9%	20.9%	.700
I would like to be pursuing a different career where I can better develop my talents	Mean (SD)	2.07 (1.52)	1.93 (1.38)	.194
	Percent Agreement	9.1%	6.2%	.830
My studies don't offer me opportunities to develop my abilities	Mean (SD)	2.65 (1.67)	2.58 (1.65)	.580
	Percent Agreement	15.6%	15.9%	.334
When things in school don't turn out as well as they should, I stop trying	Mean (SD)	2.16 (1.41)	2.10 (1.41)	.544
	Percent Agreement	9.5%	8.7%	.660
I give up in response to difficulties in school	Mean (SD)	1.89 (1.21)	1.82 (1.20)	.451
	Percent Agreement	6.5%	4.5%	.198
I give up in the face of any difficulties in my academic tasks	Mean (SD)	1.84 (1.20)	1.72 (1.15)	.180
	Percent Agreement	5.2%	4.1%	.394
When the effort I invest in school is not enough, I give up	Mean (SD)	2.02 (1.32)	1.86 (1.24)	.102
	Percent Agreement	8.2%	5.9%	.218
<u>Overload Dimension:</u>				
	Mean Score (SD)	13.86 (3.76)	12.67 (4.12)	.000
	Percent Agreement	21.2%	14.2%	.011
<u>Lack of Development Dimension:</u>				
	Mean Score (SD)	11.44 (3.82)	10.95 (3.64)	.079
	Percent Agreement	8.2%	5.9%	.212
<u>Neglect Dimension:</u>				
	Mean Score (SD)	12.09 (4.50)	11.27 (4.33)	.014
	Percent Agreement	17.3%	10.3%	.004

Mental Health Status of Medical Students During the COVID-19 Pandemic

Final Study Results

Suicidal ideation

	Know someone who has died of COVID	Do not know someone who has died of COVID	p value
Since March 2020, seriously considered harming self and/or taking life	11.4%	5.9%	.006

Substance Use

	Know someone who has died of COVID	Do not know someone who has died of COVID	p value
Started or increased substance use (alcohol, marijuana, or other drugs) to cope with pandemic-related stress or emotions	26.2%	16.7%	.001

Mental Health Status of Medical Students During the COVID-19 Pandemic

Final Study Results

Demographics

Had contact with patients with COVID	327 (34.1%)
Has not had contact with patients with COVID	633 (65.9%)

Depression/anxiety

	Had contact with patients with COVID	Has not had contact with patients with COVID	p value	
Over the last 2 weeks, how often has been bothered by				
Little interest or pleasure in doing things				
Not at all (0 days)	37.3%	38.7%		
Several days (1-7 days)	42.2	43.1		
More than half the days (8-11 days)	15.3	13.3	.844	
Nearly every day (12-14 days)	5.2	4.9		
Feeling down, depressed, or hopeless				
Not at all (0 days)	36.4%	41.4%		
Several days (1-7 days)	41.0	39.7		
More than half the days (8-11 days)	15.0	14.5	.137	
Nearly every day (12-14 days)	7.6	4.5		
	PHQ-2 Mean Score (SD)	1.82 (1.63)	1.66 (1.55)	.139
	Probable Case of Depression [PHQ-2]:	27.8%	23.7%	.162
Feeling nervous, anxious, or on edge				
Not at all (0 days)	20.2%	20.1%		
Several days (1-7 days)	36.1	39.3		
More than half the days (8-11 days)	26.3	25.9	.649	
Nearly every day (12-14 days)	17.4	14.7		
Not being able to stop or control worrying				
Not at all (0 days)	39.4%	40.4%		
Several days (1-7 days)	34.6	35.5		
More than half the days (8-11 days)	16.5	15.8	.901	
Nearly every day (12-14 days)	9.5	8.2		
	GAD-2 Mean Score (SD)	2.37 (1.84)	2.27 (1.79)	.417
	Probable Case of Anxiety [GAD-2]:	42.5%	39.3%	.343

Mental Health Status of Medical Students During the COVID-19 Pandemic

Final Study Results

Burnout

	Had contact with patients with COVID	Has not had contact with patients with COVID	p value
Degree of agreement with each of the statements on scale of 1 (totally disagree) to 7 (totally agree)			
I think the dedication I invest in my studies is more than what I should for my health			
Mean (SD)	4.21 (1.76)	4.18 (1.83)	.822
Percent Agreement	44.4%	49.9%	.059
I neglect my personal life when I pursue important achievements in my studies			
Mean (SD)	5.13 (1.72)	4.99 (1.68)	.212
Percent Agreement	72.2%	72.6%	.158
I risk my health when I pursue good results in my studies			
Mean (SD)	4.70 (1.77)	4.29 (1.82)	.001
Percent Agreement	62.5%	54.4%	.052
I overlook my own needs to fulfill academic demands			
Mean (SD)	5.19 (1.69)	4.85 (1.80)	.005
Percent Agreement	75.6%	69.5%	.137
I would like to be pursuing a different career that is more challenging for my abilities			
Mean (SD)	1.86 (1.33)	1.60 (1.05)	.002
Percent Agreement	4.1%	1.6%	.056
I feel that my studies are an obstacle to the development of my abilities			
Mean (SD)	3.19 (1.80)	2.95 (1.68)	.036
Percent Agreement	25.9%	19.1%	.189
I would like to be pursuing a different career where I can better develop my talents			
Mean (SD)	2.10 (1.51)	1.89 (1.36)	.036
Percent Agreement	8.8%	5.9%	.119
My studies don't offer me opportunities to develop my abilities			
Mean (SD)	2.66 (1.64)	2.57 (1.67)	.416
Percent Agreement	15.6%	15.9%	.745
When things in school don't turn out as well as they should, I stop trying			
Mean (SD)	2.13 (1.45)	2.11 (1.39)	.845
Percent Agreement	8.8%	9.0%	.474
I give up in response to difficulties in school			
Mean (SD)	1.85 (1.21)	1.84 (1.20)	.898
Percent Agreement	5.0%	5.0%	.170
I give up in the face of any difficulties in my academic tasks			
Mean (SD)	1.78 (1.20)	1.74 (1.14)	.647
Percent Agreement	4.7%	4.2%	.301
When the effort I invest in school is not enough, I give up			
Mean (SD)	1.91 (1.26)	1.90 (1.27)	.903
Percent Agreement	6.3%	6.6%	.202
<u>Overload Dimension:</u>			
Mean Score (SD)	13.35 (3.92)	12.77 (4.13)	.036
Percent Agreement	18.8%	14.4%	.087
<u>Lack of Development Dimension:</u>			
Mean Score (SD)	11.43 (3.69)	10.89 (3.67)	.034
Percent Agreement	8.8%	5.3%	.041
<u>Neglect Dimension:</u>			
Mean Score (SD)	11.93 (4.50)	11.24 (4.31)	.022
Percent Agreement	13.1%	11.4%	.439

Mental Health Status of Medical Students During the COVID-19 Pandemic

Final Study Results

Suicidal ideation

	Had contact with patients with COVID	Has not had contact with patients with COVID	p value
Since March 2020, seriously considered harming self and/or taking life	10.0%	5.8%	.018

Substance Use

	Had contact with patients with COVID	Has not had contact with patients with COVID	p value
Started or increased substance use (alcohol, marijuana, or other drugs) to cope with pandemic-related stress or emotions	21.9%	17.6%	.109

Mental Health Status of Medical Students During the COVID-19 Pandemic Final Study Results

Demographics

Level of worry about contracting COVID:

Not worried	191 (19.9%)
Somewhat worried	436 (45.4%)
Very worried	333 (34.7%)

Depression/anxiety

	Not Worried	Somewhat Worried	Very Worried	p value
Over the last 2 weeks, how often has been bothered by				
Little interest or pleasure in doing things ¹				
Not at all (0 days)	49.7%	39.0%	30.6%	.000
Several days (1-7 days)	34.6	44.3	45.6	
More than half the days (8-11 days)	8.4	12.6	18.9	
Nearly every day (12-14 days)	7.3	4.1	4.8	
Feeling down, depressed, or hopeless ¹				
Not at all (0 days)	51.3%	40.6%	31.8%	.000
Several days (1-7 days)	30.9	41.7	43.2	
More than half the days (8-11 days)	9.4	12.8	20.1	
Nearly every day (12-14 days)	8.4	4.8	4.8	
PHQ-2 Mean Score (SD) ¹	1.48 (1.74)	1.64 (1.52)	1.96 (1.53)	.001
Probable Case of Depression [PHQ-2]: ¹	19.9%	22.7%	31.2%	.005
Feeling nervous, anxious, or on edge ¹				
Not at all (0 days)	36.6%	22.0%	8.1%	.000
Several days (1-7 days)	32.5	38.3	41.4	
More than half the days (8-11 days)	17.8	26.1	30.6	
Nearly every day (12-14 days)	13.1	13.5	19.8	
Not being able to stop or control worrying ¹				
Not at all (0 days)	51.8%	42.9%	29.7%	.000
Several days (1-7 days)	30.9	35.1	37.8	
More than half the days (8-11 days)	10.5	14.2	21.6	
Nearly every day (12-14 days)	6.8	7.8	10.8	
GAD-2 Mean Score (SD) ^{1,2}	1.80 (1.81)	2.18 (1.78)	2.76 (1.72)	.000
Probable Case of Anxiety [GAD-2]: ¹	29.3%	37.2%	51.1%	.000

(1) Statistical differences are between Not Worried and Very Worried groups.

(2) Statistical differences are between Somewhat Worried and Very Worried groups.

Mental Health Status of Medical Students During the COVID-19 Pandemic

Final Study Results

Burnout

		Not Worried	Somewhat Worried	Very Worried	p value
Degree of agreement with each of the statements on scale of 1 (totally disagree) to 7 (totally agree)					
I think the dedication I invest in my studies is more than what I should for my health ¹	Mean (SD)	3.79 (1.89)	4.16 (1.73)	4.47 (1.80)	.000
	Percent Agreement	37.8%	46.8%	55.5%	.001
I neglect my personal life when I pursue important achievements in my studies ¹	Mean (SD)	4.63 (1.88)	4.95 (1.70)	5.38 (1.52)	.000
	Percent Agreement	62.2%	69.7%	81.9%	.000
I risk my health when I pursue good results in my studies ¹	Mean (SD)	3.97 (1.92)	4.33 (1.79)	4.81 (1.72)	.000
	Percent Agreement	44.3%	55.1%	67.2%	.000
I overlook my own needs to fulfill academic demands ¹	Mean (SD)	4.54 (1.95)	4.88 (1.76)	5.33 (1.60)	.000
	Percent Agreement	61.6%	69.7%	79.8%	.000
I would like to be pursuing a different career that is more challenging for my abilities	Mean (SD)	1.67 (1.16)	1.70 (1.22)	1.67 (1.08)	.952
	Percent Agreement	1.6%	3.7%	1.2%	.111
I feel that my studies are an obstacle to the development of my abilities	Mean (SD)	3.12 (1.76)	2.99 (1.70)	3.03 (1.74)	.679
	Percent Agreement	25.4%	19.4%	21.8%	.105
I would like to be pursuing a different career where I can better develop my talents	Mean (SD)	1.99 (1.43)	1.94 (1.38)	1.98 (1.46)	.907
	Percent Agreement	6.5%	7.2%	6.7%	.200
My studies don't offer me opportunities to develop my abilities	Mean (SD)	2.51 (1.66)	2.52 (1.60)	2.76 (1.71)	.090
	Percent Agreement	14.1%	13.7%	19.6%	.530
When things in school don't turn out as well as they should, I stop trying	Mean (SD)	2.02 (1.36)	2.14 (1.42)	2.13 (1.42)	.563
	Percent Agreement	7.6%	8.8%	9.8%	.525
I give up in response to difficulties in school	Mean (SD)	1.74 (1.16)	1.87 (1.19)	1.86 (1.26)	.415
	Percent Agreement	3.8%	5.3%	5.2%	.368
I give up in the face of any difficulties in my academic tasks	Mean (SD)	1.66 (1.13)	1.76 (1.14)	1.79 (1.21)	.503
	Percent Agreement	3.2%	4.4%	4.9%	.241
When the effort I invest in school is not enough, I give up	Mean (SD)	1.77 (1.18)	1.92 (1.25)	1.94 (1.33)	.305
	Percent Agreement	4.3%	6.7%	7.4%	.326
<u>Overload Dimension:</u> ¹					
	Mean Score (SD)	12.05 (4.32)	12.84 (4.06)	13.64 (3.83)	.000
	Percent Agreement	9.7%	16.7%	18.4%	.030
<u>Lack of Development Dimension:</u> ¹					
	Mean Score (SD)	10.47 (3.82)	10.93 (3.65)	11.60 (3.60)	.002
	Percent Agreement	4.9%	5.6%	8.6%	.149
<u>Neglect Dimension:</u>					
	Mean Score (SD)	10.89 (4.37)	11.38 (4.43)	11.92 (4.31)	.032
	Percent Agreement	10.3%	12.0%	12.9%	.682

(1) Statistical differences are between Not Worried and Very Worried groups.

(2) Statistical differences are between Somewhat Worried and Very Worried groups.

Mental Health Status of Medical Students During the COVID-19 Pandemic

Final Study Results

Suicidal ideation

	Not Worried	Somewhat Worried	Very Worried	p value
Since March 2020, seriously considered harming self and/or taking life	9.7%	7.2%	5.9%	.269

Substance Use

	Not Worried	Somewhat Worried	Very Worried	p value
Started or increased substance use (alcohol, marijuana, or other drugs) to cope with pandemic-related stress or emotions	17.8%	20.4%	17.9%	.624

Mental Health Status of Medical Students During the COVID-19 Pandemic Final Study Results

Demographics

Area in which you spent the majority of your time since March 2020?

Rural	160 (18.9%)
Urban	685 (81.1%)

Depression/anxiety

	Rural	Urban	p value	
Over the last 2 weeks, how often has been bothered by				
Little interest or pleasure in doing things				
Not at all (0 days)	41.9%	38.4%	.093	
Several days (1-7 days)	46.2	41.3		
More than half the days (8-11 days)	9.4	14.5		
Nearly every day (12-14 days)	2.5	5.8		
Feeling down, depressed, or hopeless				
Not at all (0 days)	46.9%	39.0%	.306	
Several days (1-7 days)	35.0	39.9		
More than half the days (8-11 days)	13.7	15.0		
Nearly every day (12-14 days)	4.4	6.1		
	PHQ-2 Mean Score (SD)	1.48 (1.50)	1.76 (1.62)	.047
	Probable Case of Depression [PHQ-2]:	18.1%	26.4%	.029
Feeling nervous, anxious, or on edge				
Not at all (0 days)	25.0%	19.9%	.499	
Several days (1-7 days)	37.5	38.4		
More than half the days (8-11 days)	23.8	25.4		
Nearly every day (12-14 days)	13.7	16.3		
Not being able to stop or control worrying				
Not at all (0 days)	44.4%	40.4%	.456	
Several days (1-7 days)	35.6	33.7		
More than half the days (8-11 days)	11.9	16.5		
Nearly every day (12-14 days)	8.1	9.4		
	GAD-2 Mean Score (SD)	2.10 (1.81)	2.33 (1.83)	.152
	Probable Case of Anxiety [GAD-2]:	35.0%	40.4%	.205

Mental Health Status of Medical Students During the COVID-19 Pandemic

Final Study Results

Burnout

	Rural	Urban	p value
Degree of agreement with each of the statements on scale of 1 (totally disagree) to 7 (totally agree)			
I think the dedication I invest in my studies is more than what I should for my health			
Mean (SD)	4.13 (1.73)	4.16 (1.85)	.872
Percent Agreement	46.5%	48.7%	.530
I neglect my personal life when I pursue important achievements in my studies			
Mean (SD)	4.97 (1.70)	5.02 (1.72)	.714
Percent Agreement	69.0%	72.8%	.846
I risk my health when I pursue good results in my studies			
Mean (SD)	4.23 (1.86)	4.43 (1.81)	.214
Percent Agreement	49.0%	58.0%	.041
I overlook my own needs to fulfill academic demands			
Mean (SD)	4.83 (1.78)	4.97 (1.79)	.374
Percent Agreement	68.4%	71.6%	.012
I would like to be pursuing a different career that is more challenging for my abilities			
Mean (SD)	1.67 (1.27)	1.68 (1.10)	.960
Percent Agreement	3.9%	1.6%	.330
I feel that my studies are an obstacle to the development of my abilities			
Mean (SD)	2.79 (1.72)	3.04 (1.74)	.109
Percent Agreement	19.4%	22.0%	.287
I would like to be pursuing a different career where I can better develop my talents			
Mean (SD)	1.76 (1.42)	1.99 (1.43)	.338
Percent Agreement	5.8%	7.0%	.321
My studies don't offer me opportunities to develop my abilities			
Mean (SD)	2.30 (1.58)	2.62 (1.67)	.032
Percent Agreement	11.6%	16.3%	.097
When things in school don't turn out as well as they should, I stop trying			
Mean (SD)	2.00 (1.33)	2.16 (1.42)	.199
Percent Agreement	6.5%	9.6%	.004
I give up in response to difficulties in school			
Mean (SD)	1.75 (1.13)	1.86 (1.22)	.298
Percent Agreement	3.2%	5.5%	.261
I give up in the face of any difficulties in my academic tasks			
Mean (SD)	1.57 (0.95)	1.79 (1.20)	.014
Percent Agreement	1.9%	4.9%	.469
When the effort I invest in school is not enough, I give up			
Mean (SD)	1.73 (1.12)	1.93 (1.29)	.068
Percent Agreement	5.2%	6.8%	.366
<u>Overload Dimension:</u>			
Mean Score (SD)	12.57 (3.98)	12.97 (4.16)	.276
Percent Agreement	9.7%	17.3%	.019
<u>Lack of Development Dimension:</u>			
Mean Score (SD)	10.51 (3.41)	11.11 (3.80)	.072
Percent Agreement	4.5%	7.0%	.267
<u>Neglect Dimension:</u>			
Mean Score (SD)	10.75 (4.20)	11.56 (4.45)	.038
Percent Agreement	7.7%	12.6%	.091

Mental Health Status of Medical Students During the COVID-19 Pandemic

Final Study Results

Suicidal ideation

	Rural	Urban	p value
Since March 2020, seriously considered harming self and/or taking life	5.2%	7.7%	.269

Substance Use

	Rural	Urban	p value
Started or increased substance use (alcohol, marijuana, or other drugs) to cope with pandemic-related stress or emotions	16.1%	19.7%	.303

Mental Health Status of Medical Students During the COVID-19 Pandemic Burnout Results

Number of valid responses: 960

Overall

Students who met the criteria for burnout in any dimension

Yes	201 (21.3%)
No	742 (78.7%)

Students who met the criteria for burnout in any dimension by Independent Variables

	Yes	No	ρ value
Curriculum Year:			.120
Didactic Year Respondents	118 (19.8%)	479 (80.2%)	
Clinical Year Respondents	81 (24.1%)	255 (75.9%)	
Gender Identification:			.926
Male Respondents	77 (20.8%)	293 (79.2%)	
Female Respondents	119 (21.1%)	446 (78.9%)	
Ethnicity:			.056
White Respondents	114 (19.2%)	480 (80.8%)	
Non-White Respondents	78 (24.6%)	239 (75.4%)	
Spent the majority of time since March 2020:			.029
Rural	23 (14.8%)	132 (85.2%)	
Urban	154 (22.8%)	522 (77.2%)	
Didactic year type of curriculum utilized:			.028
In person	0 (0.0%)	6 (100%)	
Virtual	40 (26.7%)	110 (73.3%)	
Combination	78 (17.7%)	363 (82.3%)	
COVID Groups:			
COVID diagnosis Respondents	20 (25.0%)	60 (75.0%)	.400
No COVID diagnosis Respondents	181 (21.0%)	682 (79.0%)	
Loved one diagnosed with COVID	113 (19.8%)	457 (80.2%)	.167
No loved one diagnosed with COVID	88 (23.6%)	285 (76.4%)	
Know someone who has died of COVID	65 (28.1%)	166 (71.9%)	.004
Do not know someone who has died of COVID	136 (19.1%)	576 (80.9%)	
Had contact with patients with COVID	77 (24.1%)	243 (75.9%)	.140
Has not had contact with patients with COVID	124 (19.9%)	499 (80.1%)	
Level of worry about contracting COVID-19			.059
Not worried at all	28 (15.1%)	157 (84.9%)	
Somewhat worried	95 (22.0%)	337 (78.0%)	
Very worried	78 (23.9%)	248 (76.1%)	
Use of mental health resources:			.000
Has accessed mental health care Respondents	133 (27.1%)	357 (72.9%)	
Never accessed mental health care Respondents	66 (14.6%)	385 (85.4%)	

Mental Health Status of Medical Students During the COVID-19 Pandemic Curriculum Variable Results

Demographics

If you are currently in didactic years, what type of curriculum is your school utilizing?

In person	6 (1.0%)
Virtual	151 (25.0%)
Combination	448 (74.0%)

Depression/anxiety

	In person	Virtual	Combination	p value	
Over the last 2 weeks, how often has been bothered by					
Little interest or pleasure in doing things					
Not at all (0 days)	83.3%	29.1%	38.8%	.083	
Several days (1-7 days)	16.7	51.7	42.0		
More than half the days (8-11 days)	0.0	14.6	13.8		
Nearly every day (12-14 days)	0.0	4.6	5.4		
Feeling down, depressed, or hopeless					
Not at all (0 days)	83.3%	33.1%	40.8%	.106	
Several days (1-7 days)	16.7	43.7	40.0		
More than half the days (8-11 days)	0.0	19.2	13.4		
Nearly every day (12-14 days)	0.0	4.0	5.8		
	PHQ-2 Mean Score (SD) ¹	0.33 (0.82)	1.89 (1.45)	1.70 (1.59)	.038
	Probable Case of Depression [PHQ-2]:	0.0%	24.5%	25.2%	.363
Feeling nervous, anxious, or on edge					
Not at all (0 days)	16.7%	14.5%	19.2%	.164	
Several days (1-7 days)	83.3	44.4	37.7		
More than half the days (8-11 days)	0.0	28.5	26.8		
Nearly every day (12-14 days)	0.0	12.6	16.3		
Not being able to stop or control worrying					
Not at all (0 days)	83.3%	35.1%	39.7%	.199	
Several days (1-7 days)	16.7	42.4	34.4		
More than half the days (8-11 days)	0.0	13.9	17.2		
Nearly every day (12-14 days)	0.0	8.6	8.7		
	GAD-2 Mean Score (SD)	1.00 (0.63)	2.35 (1.68)	2.35 (1.82)	.181
	Probable Case of Anxiety [GAD-2]:	0.0%	39.1%	42.0%	.102

(1) Statistical differences are between In Person and Virtual groups.

Mental Health Status of Medical Students During the COVID-19 Pandemic

Curriculum Variable Results

Burnout

	In person	Virtual	Combination	p value
Degree of agreement with each of the statements on scale of 1 (totally disagree) to 7 (totally agree)				
I think the dedication I invest in my studies is more than what I should for my health ^{1,2}				
Mean (SD)	2.17 (0.98)	4.33 (1.76)	4.28 (1.81)	.015
Percent Agreement	0.0%	54.0%	50.8%	.144
I neglect my personal life when I pursue important achievements in my studies				
Mean (SD)	4.17 (2.14)	5.07 (1.53)	5.10 (1.68)	.388
Percent Agreement	50.0%	78.0%	73.7%	.108
I risk my health when I pursue good results in my studies				
Mean (SD)	2.67 (1.37)	4.46 (1.63)	4.38 (1.83)	.054
Percent Agreement	16.7%	62.7%	55.6%	.102
I overlook my own needs to fulfill academic demands ^{1,2}				
Mean (SD)	2.83 (1.72)	5.07 (1.57)	4.94 (1.76)	.008
Percent Agreement	16.7%	76.7%	69.8%	.009
I would like to be pursuing a different career that is more challenging for my abilities				
Mean (SD)	1.00 (0.00)	1.66 (1.05)	1.61 (1.08)	.322
Percent Agreement	0.0%	2.0%	1.6%	.681
I feel that my studies are an obstacle to the development of my abilities ¹				
Mean (SD)	1.67 (0.82)	3.21 (1.58)	2.86 (1.66)	.013
Percent Agreement	0.0%	22.0%	17.5%	.132
I would like to be pursuing a different career where I can better develop my talents ²				
Mean (SD)	1.00 (0.00)	2.01 (1.27)	1.82 (1.39)	.098
Percent Agreement	0.0%	4.7%	5.9%	.021
My studies don't offer me opportunities to develop my abilities ³				
Mean (SD)	1.50 (0.84)	2.99 (1.69)	2.45 (1.64)	.001
Percent Agreement	0.0%	22.0%	14.3%	.084
When things in school don't turn out as well as they should, I stop trying				
Mean (SD)	1.50 (0.84)	2.32 (1.46)	2.02 (1.38)	.047
Percent Agreement	0.0%	10.0%	8.4%	.209
I give up in response to difficulties in school ³				
Mean (SD)	1.33 (0.82)	2.05 (1.26)	1.78 (1.19)	.032
Percent Agreement	0.0%	6.7%	4.5%	.176
I give up in the face of any difficulties in my academic tasks				
Mean (SD)	1.33 (0.82)	1.93 (1.18)	1.68 (1.15)	.057
Percent Agreement	0.0%	5.3%	3.9%	.099
When the effort I invest in school is not enough, I give up ³				
Mean (SD)	1.33 (0.82)	2.20 (1.41)	1.80 (1.23)	.002
Percent Agreement	0.0%	10.0%	5.7%	.126
<u>Overload Dimension:</u> ^{1,2}				
Mean Score (SD)	7.33 (1.97)	13.46 (3.69)	12.82 (4.00)	.000
Percent Agreement	0.0%	17.3%	12.7%	.224
<u>Lack of Development Dimension:</u> ^{1,3}				
Mean Score (SD)	8.00 (2.10)	11.65 (3.49)	10.84 (3.57)	.006
Percent Agreement	0.0%	4.7%	6.3%	.621
<u>Neglect Dimension:</u> ^{1,3}				
Mean Score (SD)	7.17 (3.31)	12.19 (4.33)	11.06 (4.14)	.001
Percent Agreement	0.0%	16.7%	9.5%	.039

(1) Statistical differences are between In Person and Virtual groups.

(2) Statistical differences are between In Person and Combination groups.

(3) Statistical differences are between Virtual and Combination groups.

Mental Health Status of Medical Students During the COVID-19 Pandemic Curriculum Variable Results

Suicidal ideation

	In person	Virtual	Combination	p value
Since March 2020, seriously considered harming self and/or taking life	0.0%	6.7%	7.7%	.714

Substance Use

	In person	Virtual	Combination	p value
Started or increased substance use (alcohol, marijuana, or other drugs) to cope with pandemic-related stress or emotions	0.0%	20.0%	18.2%	.447

Mental Health Status of Medical Students During the COVID-19 Pandemic

Final Study Results

Demographics

Where do you attend medical school?

Allopathic (MD)	306 (31.9%)
Osteopathic (DO)	654 (68.1%)

Depression/anxiety

	Allopathic Respondents	Osteopathic Respondents	p value
Over the last 2 weeks, how often has been bothered by			
Little interest or pleasure in doing things			
Not at all (0 days)	37.9%	38.4%	
Several days (1-7 days)	44.1	42.2	
More than half the days (8-11 days)	13.1	14.4	.929
Nearly every day (12-14 days)	4.9	5.0	
Feeling down, depressed, or hopeless			
Not at all (0 days)	37.9%	40.5%	
Several days (1-7 days)	42.5	39.0	
More than half the days (8-11 days)	14.7	14.7	.728
Nearly every day (12-14 days)	4.9	5.8	
PHQ-2 Mean Score (SD)	1.72 (1.54)	1.72 (1.60)	.978
Probable Case of Depression [PHQ-2]:	23.9%	25.7%	.542
Feeling nervous, anxious, or on edge			
Not at all (0 days)	18.3%	21.0%	
Several days (1-7 days)	43.8	35.6	
More than half the days (8-11 days)	25.5	26.3	.061
Nearly every day (12-14 days)	12.4	17.1	
Not being able to stop or control worrying			
Not at all (0 days)	43.5%	38.5%	
Several days (1-7 days)	36.9	34.4	
More than half the days (8-11 days)	13.1	17.4	.093
Nearly every day (12-14 days)	6.5	9.7	
GAD-2 Mean Score (SD)	2.15 (1.67)	2.38 (1.86)	.055
Probable Case of Anxiety [GAD-2]:	36.9%	42.0%	.132

Mental Health Status of Medical Students During the COVID-19 Pandemic

Final Study Results

Burnout

	Allopathic Respondents	Osteopathic Respondents	p value
Degree of agreement with each of the statements on scale of 1 (totally disagree) to 7 (totally agree)			
I think the dedication I invest in my studies is more than what I should for my health			
Mean (SD)	4.24 (1.79)	4.17 (1.81)	.562
Percent Agreement	53.6%	45.4%	.016
I neglect my personal life when I pursue important achievements in my studies			
Mean (SD)	4.99 (1.64)	5.06 (1.73)	.576
Percent Agreement	74.3%	71.5%	.009
I risk my health when I pursue good results in my studies			
Mean (SD)	4.37 (1.70)	4.45 (1.87)	.502
Percent Agreement	58.2%	56.7%	.020
I overlook my own needs to fulfill academic demands			
Mean (SD)	4.86 (1.72)	5.02 (1.80)	.194
Percent Agreement	71.1%	71.8%	.014
I would like to be pursuing a different career that is more challenging for my abilities			
Mean (SD)	1.61 (1.04)	1.72 (1.22)	.145
Percent Agreement	2.3%	2.5%	.021
I feel that my studies are an obstacle to the development of my abilities			
Mean (SD)	2.99 (1.69)	3.05 (1.74)	.599
Percent Agreement	22.0%	21.1%	.391
I would like to be pursuing a different career where I can better develop my talents			
Mean (SD)	1.93 (1.34)	1.98 (1.45)	.587
Percent Agreement	6.9%	6.9%	.388
My studies don't offer me opportunities to develop my abilities			
Mean (SD)	2.58 (1.62)	2.61 (1.68)	.743
Percent Agreement	16.1%	15.6%	.156
When things in school don't turn out as well as they should, I stop trying			
Mean (SD)	2.20 (1.40)	2.07 (1.42)	.184
Percent Agreement	8.9%	8.9%	.027
I give up in response to difficulties in school			
Mean (SD)	1.94 (1.19)	1.79 (1.21)	.067
Percent Agreement	5.6%	4.7%	.045
I give up in the face of any difficulties in my academic tasks			
Mean (SD)	1.86 (1.19)	1.70 (1.15)	.057
Percent Agreement	4.9%	4.1%	.082
When the effort I invest in school is not enough, I give up			
Mean (SD)	1.99 (1.24)	1.86 (1.27)	.158
Percent Agreement	6.3%	6.6%	.054
<u>Overload Dimension:</u>			
Mean Score (SD)	12.97 (3.97)	12.96 (4.12)	.964
Percent Agreement	16.4%	15.6%	.754
<u>Lack of Development Dimension:</u>			
Mean Score (SD)	11.03 (3.58)	11.09 (3.74)	.812
Percent Agreement	5.3%	7.0%	.299
<u>Neglect Dimension:</u>			
Mean Score (SD)	11.55 (4.32)	11.44 (4.42)	.720
Percent Agreement	13.2%	11.4%	.444

Mental Health Status of Medical Students During the COVID-19 Pandemic

Final Study Results

Suicidal ideation

	Allopathic Respondents	Osteopathic Respondents	p value
Since March 2020, seriously considered harming self and/or taking life	6.6%	7.5%	.596

Substance Use

	Allopathic Respondents	Osteopathic Respondents	p value
Started or increased substance use (alcohol, marijuana, or other drugs) to cope with pandemic-related stress or emotions	20.7%	18.2%	.358