Attitude changes among college students post-pandemic

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Abstract

The COVID-19 pandemic forced students across the nation to attend school virtually and thus dramatically altered the college experience for many students. Stay at home mandates and loss of social interaction may have contributed to increased isolation and poor mental health. Although mandates have been lifted, and normal college life has resumed in most places, it is unknown if a lingering social impact was left on college students. Numerous studies provide evidence through in-depth examinations indicating altered mental health and psychological behavior of adults, specifically college aged individuals. The present study measured happiness, optimism, and psychological well-being in a sample of 182 college students via an electronic Qualtrics questionnaire to identify predictors of state optimism and examine potential differences in these variables between class rankings. Results indicated a strong relationship between optimism and happiness as well as differences between class rankings on several psychological measures. Limitations and future directions are discussed.

Keywords: mental health, attitude, happiness, optimism, psychological well-being, COVID-19

Attitude Changes Among College Students Post-Pandemic

The ability to meet new people is key to human nature and propels us through life (Mortensen et al., 2017). Based upon these findings, post-secondary educational experiences are critical facets that shape young adults' social development (Castro & Clyde, 2018). College students have different psychological characteristics than other adults, even those the same age, causing them to be at a high-risk of psychological problems. In addition, they typically experience emotional instability in high-pressure situations, and their external environment strongly influences their likelihood of suffering from psychological problems such as anxiety (Wu et al., 2023). Islam and colleagues (2020) found that medical university students in Bangladesh exhibited increased rates of moderate to severe depression after the COVID-19 pandemic when compared with a pre-pandemic study. Furthermore, Zarowski and others (2024) concluded that anxiety and stress were the most prevalent conditions evident in university students during the time of the COVID-19 pandemic. These researchers also discovered increased rates of stress, sleep-related issues, and suicidal ideation. Additionally, the authors claim the COVID-19 pandemic is the most significant public health threat to generational mental health (Zarowski et al., 2024). It is reasonable to assume that the lack of social interaction as a result of the pandemic may have impacted student well-being and mental health. Due to the COVID-19 pandemic, schools and colleges were forced to close or move to remote instruction. McMurtrie (2022) found that stress and anxiety for students have increased, which has correlated with less participation and disengagement in their academics. College students experience significant change when faced with school closures and social distancing measures that frequently correlate to increased depression, anxiety, and irritability (Zimmerman et al., 2020).

Grounds for Exploration

Although in-person school activities have resumed, more information pertaining to the pandemic's impact on college students needs to be conducted to add to the growing literature surrounding this topic. Many people still report apprehension about leaving their homes, such as

going out to sit-down restaurants (Benzell et al., 2020). Sheehan and colleagues (2020) assessed social behavior changes by comparing survey answers before and after a peak in COVID-19 cases using factors such as how often individuals attended large gatherings or went to a bar. The sample used was not limited to young adults only as participants ranged from age 18 to over 65 years old, with the median being 56 years. The researchers discovered that those aged 18 to 29 displayed increased socialization by having a higher percentage of individuals who attended gatherings of 10 or more people than they had previously (Sheehan et al., 2020). It is possible this alteration in behavior was a byproduct of the COVID-19 pandemic. Therefore, the investigators of the current study were prompted to explore potential repercussions influenced by the pandemic on college aged individuals.

Mental Health During the Pandemic

Copeland and colleagues (2020) wanted to examine the impact the pandemic had on a sample of first-year college students' mental health. Mental health was assessed at the beginning of the 2020 spring semester, before the University of Vermont shifted to remote classes. Another assessment was performed at the end of the same semester, and results differed from patterns they recorded in a prior year (Copeland et al., 2020). The researchers discovered consistent negative effects on college students' functioning, particularly in the emotional and behavioral aspects of their lives. Further, they discovered these students suffered from reduced attention spans and increased externalizing problems such as outbursts and aggressive behavior (Copeland et al., 2020). Another study presented evidence that Hong Kong students experienced significant depressive symptoms such as depressive mood, feelings of worthlessness, and sleep disturbance during the COVID-19 pandemic (Sun et al., 2020). Elmer and others (2020) discovered similar results in their assessment of undergraduates from Switzerland. Using a comparable questionnaire that the participants answered in September 2020 as a frame of reference, the students were deemed to be more depressed, lonely, and more anxious in April 2020, two weeks after strict lockdown and social distancing measures were formalized. Rodman and colleagues

(2021) discovered a correlation in which youth who experienced greater isolation and less social support had heightened emotional and behavioral symptoms of psychopathology amid the pandemic (Rodman et al., 2021). The authors of the current study also have perceived less social interaction among students and hence one of the bases for the current investigation.

Taken together, these studies support claims that the pandemic has negatively impacted the social behavior and mental health of children and young adults. Using data from two domestic national datasets of randomly selected college students, one with a sample size of 610,543 and the second with a sample size of 177,692, Duffy and others (2019) discovered a rise in mental health deterioration from 2007 to 2018. One of the possible resolutions to alleviate the increasingly prevalent problem noticed in university students is to increase sociability among them, but the pandemic negated this (Eisenberg, 2019).

The Current Study

The current study focused on college student mental health, aiming to understand the extent of and how the pandemic played a role. Previous findings suggest that the COVID-19 pandemic could have ongoing effects on individuals' behavior. Olapegba and colleagues (2021) discovered a new sense of caution that people prioritize as it is evident there is a fear of COVID-19 that is causing people to care more about their health and causing them to take actions to preserve it. This would help explain why people may be socializing less, indicating the notion that their mindset on life has altered from pre-pandemic thinking. The data they gathered provides evidence that individuals are going out less because of a fear of the virus and they are behaving with much more caution (Olapegba et al., 2021). Additionally, teenagers have shown increases in the need to achieve perfection which may contribute to higher stress levels. These same participants had also partaken in healthier behavior, such as going to a fitness center more frequently in their lives (Blackburn et al., 2022). It is possible that currently, college students would rather go to the gym than a party, which would be an explanation supporting the cause behind decreased socialization.

Conflicting findings within the literature on college students' well-being indicate a need for continued research. Johnson and Czech (2018) concluded that underclassmen were significantly more optimistic than upperclassmen. However, Ludban and Gitimu (2015) indicated that there was not a significant difference in psychological well-being between year-of-study in college students. Regarding precedent research on psychological predictors, Thanoi and colleagues (2023) concluded stress and social support were the two strongest predictors of psychological well-being among numerous other variables. Newhart (2023) found social competence to be the strongest predictor of mental well-being in their model, with perceived social support being the second strongest. The present study aims to examine the current levels of well-being, optimism, and happiness in college students to shed light on the state of undergraduate students' mental health.

Explanations and Operational Definitions of Study Variables

The constructs of happiness, optimism, and well-being were measured to assess college students' mental health. Psychological Well-Being is defined by the hedonic and eudemonic (especially fixating on enjoyment, pleasure, meaning, and fulfillment) levels evinced in individuals (Tang et al., 2019). Ryff (1989) disclosed that psychological well-being is comprised of several variables including self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and environmental growth. Hills and Argyle (2002) defined happiness as a one-dimensional construct of well-being, and developed The Oxford Happiness Questionnaire to quantify the state of happiness of a participant. State Optimism, as measured by Millstein and colleagues (2019), refers to an individual having generalized positive expectations about the future, as well as having increased confidence, subjective well-being, resilience, and adherence to healthy behaviors.

Research Questions

Research questions that guided the investigation included: (a) What are the psychological predictors of college student well-being? (b) Are there differences between class rankings in

terms of well-being, happiness, and optimism? (c) What is the current state of college students'

well-being, happiness, and optimism?

Method

Participants

Participants consisted of 182 University of Massachusetts-Dartmouth students of various

class rankings. Demographic information included gender identity (61% female, 36% male, 3 %

non-binary), age ($M = 20.2$, $SD = 1.6$, range 18-23), college major (46.2% College of Arts and

Sciences, 35.7% College of Business, 6% Engineering, 6% Nursing and Health Science, 6% all

other majors) and the number of extracurricular campus clubs or groups ($M = 0.66$, $SD = 0.86$).

Year of study categories were labeled freshman ($n = 58$), sophomore ($n = 40$), junior ($n = 44$),

senior ($n = 33$), and graduate level ($n = 7$). Participants were required to be at least 18 years of

age and either an undergraduate or graduate student at the University of Massachusetts-

Dartmouth. The study was approved and granted exempt status by the university institutional

review board.

Materials

The full questionnaire was created using *Qualtrics* and consisted of 63 questions.

Participants completed informed consent, followed by demographic information and measures

including the Ryff Psychological Well-Being Scale (42-Items), the State Optimism Measure (7-

items), and the Oxford Happiness Questionnaire-Short Form (9-items). Each scale provided

instructions for scoring, including specification for which items needed to be reverse scored. For

all scales, lower total score indicated lower psychological well-being, optimism, or happiness

while higher scores indicated higher well-being, optimism, and happiness.

Psychological Well-Being

The Ryff Psychological Well-Being Scale (PWBS; Ryff, 1989) was utilized to measure

well-being and to address research questions (b), and (c). The 42-Item PWBS uses a 7-point

Likert scale and was derived from a longer 84-item scale. The 42-item version was employed in

the current study to attract as many participants as possible while sacrificing little psychometric strength. All six subscales in the main 84-question questionnaire are incorporated into the 42-item version including: autonomy (Ryff Aut), environmental mastery (Ryff EvM), personal growth (Ryff PGR), positive relations with others (Ryff PRO), self-acceptance (Ryff Self), and purpose in life (Ryff Pur). Some example questions are: "I tend to worry about what other people think of me" (Ryff Aut), "In general, I feel I am in charge of the situation in which I live" (Ryff EvM), and "For me, life has been a continuous process of learning, changing, and growth" (Ryff PGR). The Ryff demonstrated strong internal consistency reliability (alpha = .88).

State Optimism

The State Optimism Measure (SOM; Millstein et al., 2019) measures optimism of respondents using 7-items on a 5-point Likert scale and was utilized to address research questions (a), (b) and (c). An example question includes "I am feeling optimistic about life's challenges." The SOM also demonstrated strong internal consistency reliability (alpha = .89).

Happiness

The Oxford Happiness Questionnaire-Short Form (OHQ; Hills & Argyle, 2002) measures happiness using 8-items on a 6-point Likert scale and was utilized to address research questions (a), (b), and (c). An example question includes "I don't feel particularly pleased with the way I am." The OHQ demonstrated acceptable internal consistency reliability (alpha = .67).

Procedure

An online questionnaire was created using Qualtrics and emails were generated to course instructors as the main method of participant recruitment. Professors were asked to forward the project information to their classes, and students were individually sent an email with the Qualtrics link guiding them to the questionnaire. Participants provided informed consent before being directed to the demographic information and measures. Participants then responded to questions that measured their happiness, optimism, and psychological well-being. No identifying information was collected. Participation was voluntary and took approximately 20 minutes. Data

were inspected for irregularities, duplicates, and missing values. Data appeared normal and no outliers were observed. Any participant who did not complete at least 50% of the survey and/or completed the survey in less than 10 minutes was excluded.

Data Analysis

Statistical analysis techniques were applied such as ANOVA (analysis of variance) with post-hoc Tukey HSD tests to examine group differences between variables of interest and simple linear regression analyses to examine predictors of happiness, well-being, and optimism.

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Results

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Three one-way ANOVAs were calculated to examine differences in happiness, well-being, and optimism by class ranking. Significance tests and macro-level effect sizes are located in Appendix B. Post-hoc tests for happiness and optimism using the Tukey HSD method are displayed in Appendix C. No significant differences between undergraduate class ranking and happiness, well-being, nor optimism were found. Significant differences in happiness and optimism were found between graduate students and freshman students. However, the validity of this finding is limited due to the small sample of graduate students ($n = 7$). See appendices B and C for macro-level ANOVA results, effect sizes, and Tukey post-hoc comparisons.

Appendix D shows bivariate correlations between each scale as well as subscales for the Ryff. The subscales had strong correlations with each other and to overall Ryff scores, which was expected. Significant correlations were noted between optimism, happiness and the Ryff Self-Acceptance subscale. Represented in Appendix E is the macro-level simple linear regression data predicting optimism from happiness and Ryff self-acceptance scores. Appendix F displays each micro-level coefficient results from the linear regression indicating self-acceptance as the strongest predictor of optimism.

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Discussion

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People thrive off the ability to socialize, and it is key for all species to be able to effectively communicate with one another (Kastin, 2013). The COVID-19 pandemic that

occurred in 2020 halted society and various aspects of human lives were put on hold. Even though isolation mandates and restrictions have been rescinded, the potential social and educational impacts should continue to be measured. Mental health has been a prevalent issue in college students dating back at least 15 years, with over 33% of students expressing severe subjective feelings of depression (Hunt & Eisenberg, 2010). In addition, Genç and Arslan (2021) discovered that dispositional hope and optimism had a significantly positive impact on subjective well-being in Turkish undergraduate university students. Thus, it was expected that we would find similar results regarding the relationship between optimism and well-being in the present study.

The present study aimed to shed light on college student optimism, happiness, and well-being following the COVID-19 pandemic and the relationships among the variables of interest. Freshmen reported significantly lower levels of optimism and happiness relative to graduate students. This finding contrasts with some previous research, such as Johnson and Czech (2018) finding that underclassmen were significantly more optimistic than upperclassmen. Furthermore, happiness and the Ryff Self-Acceptance subscale predicted optimism levels in all students. High correlation indicated a strong relationship between these independent variables and optimism. Optimism and happiness were positively and significantly associated through many statistical tests.

Speculation has led us to consider various possibilities that would account for the results we extracted. For one, the pandemic may be a cause, which was the primary driver for this investigation. The rampant virus led to widespread disruptions in the lives of many, including students as common educational practices were forced to undergo dramatic changes. It cannot be unequivocally determined what was the primary cause that impacted college students, and it is possible there are other factors contributing to our findings

While not the primary focus of this investigation, it is interesting to observe how our measures of mental health compare to pre-pandemic levels measured in college students. Our

mean optimism score using the SOM of 27.6 was higher than some pandemic levels reported by

Venkatesh and colleagues (2021) who reported a mean of 21.5. Another investigation by

Millstein and researchers (2019) noted a healthy average optimism level of college students

measured by the SOM was 23. Thus, it may be possible that students in our sample are now

becoming more optimistic about the future as they return to the normal college experience.

Consistent with our finding, Ludban and Gitimu (2015) did not find any differences between

class ranking on psychological well-being. However, Ludban and Gitimu (2015) noted

significant differences in well-being by age, finding that traditional college students (ages 18-23)

reported higher purpose in life and personal growth scores than nontraditional students (ages 24

or above). Our sample indicated an average happiness score of 29.7, which is lower than that of

other investigations of university students. For instance, one pre-pandemic survey of university

students using the same happiness measure (OHQ-Short), reported an average happiness of 34.5

(Cruise et al., 2006). Taken together, it could be that our sample of post-pandemic college

students is more optimistic but less happy than students prior to 2020. Of course, it is important

to point out that these are merely cross-sectional comparisons at one point in time examining

differences between college student class ranking, and thus any causal implications between the

pandemic and mental health here are not warranted.

Limitations

A total of 182 participants engaged in the questionnaire, but not all student class ranking

samples are even. Unequal group sizes are important to note, as it does not truly represent all

classes of students, and undergraduate students are overly represented. While graduate students

were not the primary focus of this investigation, we were able to sample several. However, the

sample was minimal ($n = 7$), which was significantly smaller than the other class rankings. This

may skew results by falsely pointing out statistical relationships. Moreover, only students at the

University of Massachusetts-Dartmouth were eligible for the study, posing an obstacle since it

limits our ability to generalize to all college students. It is important to point out that this study

utilized a convenience sample and may not be representative of all college students. In a similar vein, the participants studied do not accurately reflect all gender and racial/ethnic identities found in the greater University community, and thus care should be given when trying to generalize these findings to a broader population. Additionally, the findings discussed here may be fleeting as behavioral and psychological norms readjust to pre-pandemic levels for most college students. Finally, the self-report and cross-sectional nature of the data collection make any causal claims as to student mental health post-pandemic simply speculative.

Future Directions

Future studies should investigate whether these differences between undergraduates and graduates hold up when larger samples of graduate students are surveyed. Future work may also utilize prospective data to investigate whether well-being, optimism, and happiness have significantly changed in college student samples pre-COVID-19 pandemic to post-COVID-19 pandemic. Other work may focus on potentially disparate mental health impacts of the COVID-19 pandemic on students of different gender and racial/ethnic identities and different major courses of study. Others could attempt to uncover the learning loss impacts and student drop-out vs. retention due to the COVID-19 pandemic and the impacts of COVID-19 on students entering the transitional periods from high school to college and college to the workforce. Further, researchers may want to study the potential mental health impacts of the COVID-19 pandemic specifically on first generation college students, on students whose employment was impacted, on students who became sick with COVID themselves, or who were taking care of sick family members.

Conclusion

We concluded that students appear to demonstrate higher optimism, less happiness, and consistent psychological well-being when juxtaposed with antecedent research. Moreover, first-year students seem to be experiencing significantly less optimism and happiness than graduate-level students, but this may be misleading. It is important to note that the graduate student

sample collected in this study is a limitation, therefore conclusions made with respect to this

variable should be regarded with caution. Also, happiness and self-acceptance predicted

optimism with strong reliability. At this moment, it seems that the pandemic may not have

negatively affected college students' degree of optimism and psychological well-being but may

have adversely affected their happiness.

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Appendix A

Sociodemographic Characteristics of Participants at Baseline

Baseline Characteristic	*n*	*%*
Gender		
Female	111	61.0
Male	66	36.3
Non-binary/other	5	2.7
Class ranking		
Freshman	58	31.9
Sophomore	40	22.0
Junior	44	24.2
Senior	33	18.1
Graduate level	7	3.8

Note. $n = 182$

Appendix B

Mean Squares and One-Way Analyses of Variance in Ryff Psychological Well-Being 42-Item

Scale (Ryff), State Optimism Measure (SOM), and Oxford Happiness Questionnaire-Short Form

(OHQ)

Measure	Mean Square	$F(4,177)$	p	η^2
Ryff	353.07	1.79	.13	.04
SOM	79.30	2.56*	.04	.06
OHQ	77.20	5.22**	<.001	.11

*Note. *$p < .05$. **$p < .01$.*

Appendix C

Multiple Comparison Mean Differences, Standard Errors, and Analyses of Variance Post Hoc

Tests Using Tukey HSD

Variable	Ryff			SoM			OHQ		
	MD	*SE*	*p*	*MD*	*SE*	*p*	*MD*	*SE*	*p*
Class rank									
Sophomore	-.36	2.89	1.00	-1.67	1.14	.58	-1.50	.79	.32
Junior	-1.18	2.81	.99	.01	1.11	1.0	-.04	.77	1.00
Senior	3.81	3.06	.72	-1.16	1.21	.87	.14	.83	1.00
Graduate	-11.13	5.62	.28	-6.37*	2.22	.037	-6.26*	1.58	<.001

Note. Mean Difference (MD) is given with comparison to scores of Freshman respondents. A

negative integer indicates the mean of Freshman was lower than the mean of the respective class

ranking.

*$p < .05$. **$p < .01$.

Appendix D

Correlations and Descriptive Statistics for Study Variables

Variable	*n*	*M*	*SD*	1	2	3	4	5	6	7	8	9
1. Ryff Total	182	186.83	14.16	-								
2. Ryff Aut	182	32.03	4.08	.62**	-							
3. Ryff EvM	182	31.86	3.75	.67**	.37**	-						
4. Ryff PGR	182	29.59	3.22	.56**	.19*	.19*	-					
5. Ryff PRO	182	34.25	4.85	.69**	.33**	.38**	.26**	-				
6. Ryff Self	182	31.27	3.98	.57**	.23**	.29**	.22**	.16*	-			
7. Ryff Pur	182	27.81	3.45	.50**	.06	.16*	.32**	.21**	.18*	-		
8. SOM Total	182	27.60	5.651	.07	.04	-.05	-.01	-.07	.28**	.03	-	
9. OHQ Total	182	29.72	4.02	.20**	.23**	.09	.05	-.04	.24**	.19*	.20**	-

*Note. *p* < .05. **p* < .01.*

Appendix E

Regression Analysis: Macro-level Model Summary predicting state optimism from well-being and happiness.

Predictor	$F(2,174)$	p	r^2
Ryff-Self and OHQ	9.47	<.001	.10

Note. Ryff-self denotes self-acceptance subscale.

Appendix F

Regression Analysis: Coefficients for Oxford Happiness Questionnaire-Short Form (OHQ) and

Ryff Self-Acceptance Subscale (Ryff Self) predicting State Optimism (SOM)

Predictor	B	*SE*	*β*	*t*	*p*
Intercept	10.3	3.9	-	2.6*	.011
OHQ	.25	.11	.17	2.3*	.022
Ryff Self	.32	.11	.22	3.1**	.003

*Note. *p < .05. **p < .01.*