# 5-Years of Wellness: Changes in Wellness Scores in a Conceptual-Based Instructional Physical Activity Program Before, During, and After COVID

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## ABSTRACT

**Background:** With instructional formats changing due to COVID-19 and college student wellness being affected by the pandemic, it is essential to examine the effects of Instructional Physical Activity Programs (IPAP) on college student wellness. These results show that prior to, during, and after COVID, an IPAP program can play a role in helping college students achieve and maintain wellness.
**Aim:** This study reports the impact of an IPAP on college students' wellness over five years.
**Methods**: Undergraduate college students enrolled in sections of an online wellness course within an IPAP from Fall 2019 through Spring 2024 semesters ($n$ =15,615) were assessed using the Wellness Inventory, which examines 12 dimensions of wellness. Assessments were conducted at the beginning (pre) and end (post) of the semester. Paired sample $t$-tests were used to assess significance of changes and effect sizes (Cohen's $d$).
**Results**: All 12 dimensions of wellness increased from pre- to post-test semester to semester. Results were statistically significant ($p > .05$), and effect sizes ranged from small ($d = .24$) to large ($d = 1.13$).
**Conclusions**: Instructional Physical Activity Programs that include a wellness component can be a useful intervention to help students improve multiple dimensions of wellness.

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*Keywords:* wellness, well-being, college student wellness, Instructional Physical Activity Program

## BACKGROUND

Colleges and universities throughout the United States house Instructional Physical Activity Programs (IPAP) and personal health and wellness courses (Cardinal, 2020; Casebolt et al., 2017; Stapleton et al., 2017). These programs are poised to promote wellness as students transition from adolescence to emerging adulthood where they explore and establish beliefs, values, and behaviors (Arnett, 2000; Hochberg & Konner; 2020; Müftüler & İnce, 2015; Wilson et al., 2019). These programs can inspire and equip students with healthy lifestyle behavior skills to sustain high level wellness (Cho et al., 2020; Sibley et al., 2013) and can be a catalyst for physical activity (PA) and high-level wellness over a lifetime (Cardinal, 2020; Casebolt et al., 2017; Lothes, 2020; Lothes & Kantor, 2021; Morgan, 2019; Stapleton et al., 2017).

For the longevity and quality of IPAP, it is essential to evaluate their impact and effectiveness amid challenges. College student wellness is poor, particularly regarding mental and emotional health, and we must explore and use all feasible resources and tools to help students pursue optimal levels of wellness, no matter the circumstances (Berstein & McNally, 2018; Grasdalsmoen et al., 2020; Gibson, 2018; Ma, 2020; Ridner et al., 2016; Winzer et al., 2018). The American College Health Association (ACHA) facilitated by the National College Health Assessment (NCHA) offers comprehensive data on the health status of college students in the US (American College Health Association, 2020, 2021, 2022). Though the survey does not assess holistic wellness, it does assess factors that contribute to it, particularly factors that can thwart well-being. According to the NCHA between Spring 2020 and Spring 2021, students reported increases in sleep problems, depression, anxiety, and stress, negatively impacting their academic performance (ACHA, 2020, 2021) By Spring 2022, prevalence of those impediments to academic success only had minimal changes from the previous semester (ACHA, 2022).

Evidence from COVID-19 research has demonstrated special populations, particularly college age adults (18–24 years of age), were vulnerable to adverse mental health conditions during the pandemic (Czeisler et al., 2020; Debowska et al., 2020; Wieczorek et al., 2021). Required academic courses with a wellness focus can be a sustainable tool for promoting wellness in students who do not or cannot seek voluntary, extracurricular opportunities for wellness promotion on or off campus. The current study assesses the role IPAP plays in increasing wellness in college students.

The COVID-19 pandemic further exacerbated detriments to wellness in the college age population. Debowski et al. (2020) found a significant increase in depression as the pandemic progressed, with young adults ages 18–24 years experiencing greater symptoms of depression, anxiety, and suicidality than adults at universities over age 25. The Centers for Disease Control and Prevention [CDC] expressed the urgent need to address mental health disparities and support systems during the pandemic, following their June 2020 report on the disproportionate impact of COVID-19 restrictions on the mental and behavioral health of several special population groups (CDC, 2020). Most significantly, 74.6% of 18–24-year-olds reported at least one adverse mental health or behavioral health symptom, the highest of all subgroups (Czeisler et al., 2020). College students need to be equipped with strategies to help them improve their wellness so they are not plagued with the associated struggles and detriments of poor wellness and a lack of coping skills during a typical semester; this need is even greater when also juggling the challenges of a pandemic or any other threat to resilience (e.g., natural disasters) (Lothes et al., 2021; Lothes et al., 2024).

Research was conducted by Lothes (2020) during non-pandemic semesters on the wellness impact of a wellness course within an IPAP. During the spring 2018 semester, there were statistically significant increases in all the twelve dimensions of wellness in the Wellness Inventory (WI) framework, developed by Travis (1981), from the start to end of the semester ($N = 1497$). Similar results were found in sections of the same course offered in a seven-week online accelerated format for non-traditional students, pursuing their Registered Nurse (RN) to Bachelor of Science in Nursing (BSN) degree (Lothes, 2020). All twelve dimensions of wellness had significant increases with large effect sizes. This data suggests that an IPAP, particularly a conceptual based one with a wellness component (Cardinal et al., 2012), can be effective at equipping students to move to a higher level of wellness during a typical semester, even when offered in an online accelerated format.

The Wellness Inventory assessment includes 10 questions on a 11-point Likert scale ranging from 0 (*not at all*) to 10 (*completely*) for each of the 12 dimensions of wellness (120 questions total). The questions ask about behavioral aspects of each wellness dimension with a total possible score ranging from 0 (lowest) to 100 (highest) for each

dimension. The wellness inventory also includes a 11-point Likert scale, ranging from 0 (lowest) to 10 (highest), to assess the respondent's motivation to change that aspect of wellness. Motivation scores range from 0 (lowest) to 100 (highest). There are no reverse-scored items in wellness inventory. There are 12 dimensions of wellness in John Travis's Wellness Inventory (Travis & Ryan, 2004). The twelve dimensions of wellness are self-responsibility and love, breathing, sensing, eating, moving, feeling, thinking, playing and working, communicating, intimacy, finding meaning, and transcending. Details regarding the 12 dimensions of wellness and the Wellness Inventory created by Travis (1981) can be found in a previous publications (Lothes et al., 2021; Lothes & Kantor, 2021), in The Wellness Workbook (Travis & Ryan, 2004) and at https://www.bodymindspirit.com/pages/12-dimensions-of-wellness-1.

This study examined data over five years of wellness courses starting in Fall 2019–Spring 2020 (pre-pandemic), throughout the COVID pandemic (Fall 2020–Spring 2023) and then post-COVID (Fall 2023–Spring 2024; Sarker et al., 2023).

Though IPAP are offered at colleges and universities around the world, there is limited research on whether these courses impact wellness, and to our knowledge no one has looked at college student wellness before, during, and after the COVID pandemic. The purpose of this study was to assess if there were changes in wellness among those enrolled in an IPAP at a medium size university in southeastern United States during semesters before, during, and after the COVID pandemic. Hypotheses were as follows:

- H1: There will be increased mean changes in all 12 dimensions of wellness from the start of the semester to the end of the semester for the five years combined.
- H2: There will be increased mean changes in all 12 dimensions of wellness from the start of the semester to the end of the semester for the semesters prior to COVID (Fall 2019–Spring 2020).
- H3: There will be increased mean changes in all 12 dimensions of wellness from the start of the semester to the end of the semester for each academic year during COVID (Fall 2020–Spring 2023).
- H4: There will be increased mean changes in all 12 dimensions of wellness from the start of the semester to the end of the semester for each academic year post COVID (Fall 2023–Spring 2024).

## METHODS

### Participants

Study participants were students enrolled in an IPAP wellness course during the Fall 2019 through the Spring 2024 semesters. In the fully online wellness component of the program, course content was delivered online each semester via Canvas, an online learning management system. The authors confirm that the research presented in this article received approval from the Institutional Review Board of the university (18-0232).

### Demographics

Participants were asked to provide demographic characteristics when they set up their wellness inventory account. The sex demographics were dichotomous, male and female, until Spring 2023. During the Spring 2023 semester sex demographics were updated to include: male, female, non-conforming/non-binary, and transgender. The age demographic included age ranges from 18–24, 24–34, 34–44, and 45+. The frequency of exercise demographic was

self-report and included the following options: daily, 4–6 times weekly, 3 times weekly, 2 times weekly, once a week, and once a month or less. These were grouped into "Low" (one weekly and once a month or less), "Moderate" (2 times weekly and 3 times weekly), and "High" (4–6 times weekly and daily). Health status was assessed through self-report options of *poor*, *fair*, *good*, and *excellent*. To maintain students' confidentiality, names were collected only for grading purposes. Names were removed before analysis was conducted on the data.

## Course Description

This IPAP consists of two, one credit courses. A face-to-face PA lab for one credit and a fully online wellness course for one credit. All students taking a PA lab are required to take the fully online wellness course in the same term. The wellness inventory was only used with the lecture course. Successful completion of the course is a graduation requirement for all undergraduate students at the university unless they transfer in with equivalent coursework. This study focuses on the online wellness lecture course sections which enroll about 1500 students per semester across approximately 20 different sections.

The online lecture was designed to introduce students to the fundamental concepts and practical experiences associated with the physical, emotional, intellectual, social, and spiritual components of wellness. Course materials and activities in the lecture offered knowledge-based educational tools for wellness and weekly practices for students to apply learning. Promoting behavior change to enhance well-being and lifelong maintenance of personal health and fitness was an objective throughout both lecture and lab course components.

The online wellness lecture was delivered online asynchronously through the university learning management system and used the Wellness Inventory model of 12 dimensions of wellness (Travis & Ryan, 2004). The course covers each of the 12 dimensions of wellness per week. Coverage of each dimension included raising awareness about the dimension through lecture content, white papers, and short videos, followed by engagement in a specified, experimental behavior that may improve the dimension. Students tracked wellness action steps of their choice throughout the semester and learned behavior change strategies each week. They worked with a small group throughout the semester to learn and support one another. At the semester's close, students created a wellness vision to apply what they had learned and experienced in the course for their future wellness journey. All content was custom designed by the team of faculty teaching in the program and delivered the same across all sections.

## Measures

### *Wellness Inventory*

Students completed the pre-assessment at the start of the semester and the post-assessment at the end of each semester. Each of the 12 dimensions is assessed with 10 questions using an 11-point Likert-type scale ranging from 0 (*lowest point*) to 10 (*highest point*). There are no reverse score items. The Wellness Inventory (Travis, 1981) presents scores for each individual dimension of wellness; there is no comprehensive wellness score for the Wellness Inventory. The Wellness Inventory asks questions assessing a rating of how true that statement is for the respondent (i.e., a wellness score) and how motivated the person is for that statement (i.e., a motivation score). For example, a statement from the breathing dimension states, "I recognize that my breathing may become restricted when I am experiencing feelings

of anxiety, fear, anger or sadness." The 11-point Likert scale assesses wellness on a 0 to 10 scale and motivation on a 10 to 10 scale for 10 statements for each dimension. There are a total of 120 questions (10 per dimension) that produce a wellness and motivation score for each dimension of wellness.

### Statistical Analysis

Scores for the 12 dimensions of wellness were collected from the Wellness Inventory database for all the course sections offered each semester. To analyze changes from the start to the end of the semester, paired *t*-tests were conducted for each of the dimensions. Statview Statistical Software (SAS) was used to run the paired-*t* tests. Pre-determined level of significance was $p = 0.05$ and effect sizes were calculated using an online effect size calculator (*Effect size calculator for T-test*, 2023) Effect sizes used were determined small = 0.2, medium = 0.5 and large = 0.8 (Sullivan & Feinn, 2012).

## RESULTS

### Demographics

See Table 1 for participant demographics by semester, age group, sex, self-reported frequency of exercise and self-reported health status.

**Table 1**

*Demographics*

| Semester | Age group | Sex | Freq of exercise | Health status |
|---|---|---|---|---|
| Fall 2019 | 18-24: 1495 | Male: 614 | High: 163 | Excellent: 371 |
| (*N* = 1686) | 25-34: 125 | Female: 1075 | Moderate: 783 | Good: 1003 |
| | 35-44: 48 | | Low: 440 | Fair: 288 |
| | 45+: 18 | | | Poor: 24 |
| Spring 2020 | 18-24: 1046 | Male: 454 | High: 391 | Excellent: 268 |
| (*N* = 1222) | 25-34: 112 | Female: 768 | Moderate: 534 | Good: 722 |
| | 35-44: 46 | | Low: 297 | Fair: 214 |
| | 45+: 18 | | | Poor: 18 |
| Fall 2020 | 18-24: 1379 | Male: 593 | High: 403 | Excellent: 357 |
| (*N* = 1593) | 25-34: 135 | Female: 1000 | Moderate: 738 | Good: 922 |
| | 35-44: 56 | | Low: 452 | Fair: 289 |
| | 45+: 23 | | | Poor: 25 |
| Spring 2021 | 18-24: 1345 | Male: 514 | High: 354 | Excellent: 334 |
| (*N* = 1559) | 25-34: 121 | Female: 1045 | Moderate: 481 | Good: 893 |
| | 35-44: 56 | | Low: 230 | Fair: 334 |
| | 45+: 37 | | | Poor: 26 |
| Fall 2021 | 18-24: 1419 | Male: 542 | High: 479 | Excellent: 412 |

| Semester | Age group | Sex | Freq of exercise | Health status |
|---|---|---|---|---|
| (*N* = 1655) | 25-34: 134 | Female:1113 | Moderate: 630 | Good: 935 |
| | 35-44: 64 | | Low: 399 | Fair: 294 |
| | 45+: 38 | | | Poor: 14 |
| Spring 2022 | 18-24: 1340 | Male: 537 | High: 488 | Excellent: 317 |
| (*N* = 1539) | 25-34: 102 | Female: 1002 | Moderate: 642 | Good: 877 |
| | 35-44: 65 | | Low: 409 | Fair: 323 |
| | 45+: 32 | | | Poor: 22 |
| Fall 2022 | 18-24: 1531 | Male: 626 | High: 657 | Excellent: 420 |
| (*N* = 1688) | 25-34: 96 | Female: 1062 | Moderate: 669 | Good: 970 |
| | 35-44: 42 | | Low: 362 | Fair: 281 |
| | 45+: 19 | | | Poor: 17 |
| Spring 2023 | 18-24: 1337 | Male: 527 | High: 597 | Excellent: 338 |
| (*N* = 1489) | 25-34: 92 | Female: 941 | Moderate: 570 | Good: 883 |
| | 35-44: 37 | NonBinary: 18 | Low: 322 | Fair: 251 |
| | 45+: 19 | Transgender: 3 | | Poor: 17 |
| Fall 2023 | 18-24: 1452 | Male: 562 | High: 603 | Excellent: 355 |
| (*N* = 1582) | 25-34: 73 | Female: 993 | Moderate: 661 | Good: 960 |
| | 35-44: 38 | NonBinary: 16 | Low: 318 | Fair: 254 |
| | 45+: 19 | Transgender: 5 | | Poor: 13 |
| Spring 2024 | 18-24: 1475 | Male: 553 | High: 639 | Excellent: 415 |
| (*N* = 1602) | 25-34: 73 | Female: 1031 | Moderate: 637 | Good: 919 |
| | 35-44: 33 | NonBinary: 10 | Low: 326 | Fair: 252 |
| | 45+: 22 | Transgender: 9 | | Poor: 17 |
| Total = 15,615 | | | | |

**Overall Wellness Scores**

Pre- and post-assessment analysis showed significant increases in all 12 dimensions of five-years of wellness (Table 2). Effect sizes (Cohen's *d*) ranged from small to large (*d* = 0.24 to 1.13), with most of the effect sizes being medium to large. Each semester there were significant changes in wellness dimension scores from the start to the end of the semester (Tables 2-7).

**Table 2**

*Five-years of Wellness Pre/Post (All academic years)*

| Dimension (N = 15,615) | Pre | | Post | | | | |
|---|---|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | *t-value* | *p* | *d* |
| Self-Resp & Love | 73.94 | 15.12 | 80.93 | 12.85 | 58.97 | <.0001*** | 0.50 |
| Breathing | 55.85 | 17.82 | 71.47 | 18.06 | 106.65 | <.0001*** | 0.87 |
| Sensing | 65.68 | 14.64 | 75.85 | 15.18 | 89.66 | <.0001*** | 0.68 |
| Eating | 56.29 | 21.17 | 67.71 | 19.87 | 73.11 | <.0001*** | 0.56 |
| Moving | 60.00 | 20.72 | 73.38 | 20.50 | 83.83 | <.0001*** | 0.65 |
| Feeling | 65.28 | 16.94 | 74.89 | 18.02 | 71.80 | <.0001*** | 0.55 |
| Thinking | 61.86 | 17.25 | 73.20 | 17.29 | 87.15 | <.0001*** | 0.66 |
| Playing & Working | 64.14 | 17.51 | 75.04 | 17.24 | 85.46 | <.0001*** | 0.63 |
| Communicating | 75.69 | 15.06 | 81.05 | 15.41 | 49.54 | <.0001*** | 0.35 |
| Intimacy | 77.31 | 15.74 | 82.56 | 14.97 | 49.68 | <.0001*** | 0.34 |
| Finding Meaning | 67.94 | 17.29 | 76.65 | 16.54 | 71.44 | <.0001*** | 0.51 |
| Transcending | 66.98 | 18.59 | 75.96 | 18.33 | 69.86 | <.0001*** | 0.49 |

*Note*. The effect sizes for each semester ranged from medium to high. *<.01, **<.001, ***<.0001

**Table 3**

*Wellness Pre/Post Academic Year 1 (Fall 2019/Spring 2020) (pre-COVID)*

| Dimension (N = 1222) | Pre | | Post | | | | |
|---|---|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | *t-value* | *p* | *d* |
| Self-Resp & Love | 73.37 | 12.84 | 81.09 | 12.94 | 31.58 | <.0001*** | 0.60 |
| Breathing | 55.40 | 17.75 | 72.04 | 17.53 | 49.02 | <.0001*** | 0.94 |
| Sensing | 65.94 | 14.74 | 76.72 | 14.84 | 39.54 | <.0001*** | 0.73 |
| Eating | 54.51 | 17.99 | 67.76 | 18.29 | 40.92 | <.0001*** | 0.73 |
| Moving | 59.79 | 20.29 | 72.70 | 18.48 | 37.56 | <.0001*** | 0.67 |
| Feeling | 65.60 | 16.94 | 75.28 | 16.65 | 33.72 | <.0001*** | 0.58 |
| Thinking | 62.87 | 17.13 | 74.31 | 16.82 | 37.89 | <.0001*** | 0.67 |
| Playing & Working | 64.52 | 17.31 | 75.48 | 17.18 | 36.63 | <.0001*** | 0.64 |
| Communicating | 74.50 | 19.53 | 79.40 | 20.52 | 14.39 | <.0001*** | 0.24 |
| Intimacy | 77.53 | 15.41 | 82.89 | 14.72 | 21.28 | <.0001*** | 0.36 |
| Finding Meaning | 68.30 | 17.27 | 76.82 | 16.44 | 30.04 | <.0001*** | 0.51 |
| Transcending | 66.02 | 17.26 | 75.77 | 16.89 | 34.52 | <.0001*** | 0.57 |

**Table 4**

*Wellness Pre/Post Academic Year 2 (Fall 2020/Spring 2021) (COVID)*

| Dimension (N = 1593) | Pre | | Post | | | | |
|---|---|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | *t-value* | *p* | *d* |
| Self-Resp & Love | 73.90 | 13.24 | 80.34 | 13.34 | 31.07 | <.0001*** | 0.48 |
| Breathing | 55.78 | 17.93 | 71.60 | 18.50 | 48.83 | <.0001*** | 0.87 |
| Sensing | 65.90 | 14.87 | 75.81 | 15.48 | 40.69 | <.0001*** | 0.65 |
| Eating | 60.00 | 29.84 | 69.47 | 24.19 | 19.53 | <.0001*** | 0.35 |
| Moving | 57.37 | 20.79 | 72.20 | 19.45 | 44.18 | <.0001*** | 0.74 |
| Feeling | 65.22 | 17.16 | 74.72 | 17.37 | 32.99 | <.0001*** | 0.55 |
| Thinking | 61.99 | 17.22 | 72.70 | 17.90 | 37.86 | <.0001*** | 0.61 |
| Playing & Working | 63.81 | 17.87 | 74.47 | 17.82 | 37.20 | <.0001*** | 0.60 |
| Communicating | 76.08 | 14.09 | 81.20 | 14.51 | 23.80 | <.0001*** | 0.36 |
| Intimacy | 77.09 | 16.42 | 82.12 | 15.48 | 21.16 | <.0001*** | 0.32 |
| Finding Meaning | 67.91 | 17.54 | 76.12 | 17.25 | 30.50 | <.0001*** | 0.47 |
| Transcending | 55.63 | 17.98 | 75.71 | 17.62 | 33.68 | <.0001*** | 1.13 |

**Table 5**

*Wellness Pre/Post Academic Year 3 (Fall 2021/Spring 2022) (COVID)*

| Dimension (N = 1559) | Pre | | Post | | | | |
|---|---|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | *t-value* | *p* | *d* |
| Self-Resp & Love | 73.57 | 12.68 | 80.64 | 12.91 | 31.95 | <.0001*** | 0.55 |
| Breathing | 55.32 | 17.84 | 71.50 | 18.52 | 49.66 | <.0001*** | 0.89 |
| Sensing | 65.47 | 14.71 | 75.88 | 15.54 | 40.39 | <.0001*** | 0.69 |
| Eating | 54.97 | 18.43 | 66.81 | 19.06 | 39.01 | <.0001*** | 0.63 |
| Moving | 59.46 | 21.33 | 73.07 | 19.36 | 41.34 | <.0001*** | 0.67 |
| Feeling | 64.80 | 17.00 | 74.71 | 16.85 | 35.94 | <.0001*** | 0.59 |
| Thinking | 61.22 | 17.29 | 72.94 | 17.55 | 40.44 | <.0001*** | 0.67 |
| Playing & Working | 63.80 | 17.60 | 74.85 | 17.62 | 39.20 | <.0001*** | 0.63 |
| Communicating | 75.99 | 13.59 | 81.46 | 13.92 | 25.00 | <.0001*** | 0.40 |
| Intimacy | 77.10 | 15.53 | 82.89 | 15.06 | 23.26 | <.0001*** | 0.38 |
| Finding Meaning | 67.57 | 17.41 | 76.72 | 16.77 | 33.94 | <.0001*** | 0.65 |
| Transcending | 69.80 | 22.22 | 76.80 | 22.49 | 20.42 | <.0001*** | 0.31 |

**Table 6**

*Wellness Pre/Post Academic Year 4 (Fall 2022/Spring 2023) (COVID)*

| Dimension (N = 1655) | Pre | | Post | | | | |
|---|---|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | *t-value* | *p* | *d* |
| Self-Resp & Love | 74.79 | 21.88 | 81.91 | 12.51 | 18.62 | <.0001*** | 0.40 |
| Breathing | 56.81 | 18.42 | 72.52 | 18.11 | 47.30 | <.0001*** | 0.86 |
| Sensing | 65.78 | 14.83 | 76.32 | 15.24 | 41.93 | <.0001*** | 0.70 |
| Eating | 56.05 | 18.66 | 68.04 | 18.98 | 39.89 | <.0001*** | 0.64 |
| Moving | 61.42 | 20.81 | 75.08 | 26.00 | 30.58 | <.0001*** | 0.58 |
| Feeling | 65.38 | 17.11 | 75.44 | 17.06 | 36.06 | <.0001*** | 0.59 |
| Thinking | 62.10 | 17.54 | 74.04 | 17.50 | 39.76 | <.0001*** | 0.68 |
| Playing & Working | 64.44 | 17.71 | 75.87 | 17.13 | 39.99 | <.0001*** | 0.66 |
| Communicating | 76.27 | 14.04 | 82.08 | 14.05 | 26.08 | <.0001*** | 0.41 |
| Intimacy | 77.36 | 15.84 | 82.91 | 15.09 | 23.60 | <.0001*** | 0.36 |
| Finding Meaning | 68.33 | 17.36 | 77.69 | 16.77 | 33.29 | <.0001*** | 0.55 |
| Transcending | 66.37 | 17.58 | 76.58 | 17.25 | 36.37 | <.0001*** | 0.59 |

**Table 7**

*Wellness Pre/Post Academic Year 5 (Fall 2023/Spring 2024) (post-COVID)*

| Dimension (N = 1539) | Pre | | Post | | | | |
|---|---|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | *t-value* | *p* | *d* |
| Self-Resp & Love | 74.03 | 12.54 | 80.37 | 12.47 | 29.46 | <.0001*** | 0.51 |
| Breathing | 55.92 | 17.10 | 69.75 | 17.44 | 43.99 | <.0001*** | 0.80 |
| Sensing | 65.32 | 14.07 | 74.59 | 14.68 | 38.28 | <.0001*** | 0.64 |
| Eating | 55.83 | 17.75 | 66.49 | 17.97 | 37.13 | <.0001*** | 0.60 |
| Moving | 61.91 | 20.04 | 71.78 | 17.83 | 38.56 | <.0001*** | 0.52 |
| Feeling | 65.33 | 16.50 | 74.61 | 21.55 | 25.45 | <.0001*** | 0.48 |
| Thinking | 61.23 | 17.00 | 72.17 | 16.52 | 38.95 | <.0001*** | 0.65 |
| Playing & Working | 64.17 | 17.05 | 74.56 | 16.38 | 38.07 | <.0001*** | 0.62 |
| Communicating | 75.50 | 13.56 | 80.97 | 13.32 | 26.64 | <.0001*** | 0.41 |
| Intimacy | 77.46 | 15.44 | 82.44 | 14.49 | 24.77 | <.0001*** | 0.33 |
| Finding Meaning | 67.61 | 16.88 | 75.94 | 15.94 | 31.95 | <.0001*** | 0.51 |
| Transcending | 66.00 | 16.99 | 74.93 | 16.55 | 35.77 | <.0001*** | 0.53 |

## DISCUSSION

Overall, the results show that when a wellness curriculum is delivered through an online IPAP to a college population, even during a pandemic, positive changes can occur. These findings suggest that providing a conceptual-based IPAP may have served as a buffer to the negative effects of a pandemic on college age students' wellness. These results are also in alignment with the Lothes et al. (2021) research that found that wellness scores can be increased during a hurricane disrupted semester. The college age population is a vulnerable time for establishing lifelong healthy habits, and data has consistently shown an increase in mental and behavioral health concerns during these transformative years. Utilizing IPAP may be an important tool to offset additional damaging effects of a crisis or disruption during a university semester. Moreover, because these effects were also seen to occur prior to the pandemic as well as after show that IPAP, particularly conceptual-based, can have a positive impact on college student whole-person wellness (Cardinal et al., 2012).

Cardinal et al. (2015) has argued that a well-rounded approach to teaching and assessing wellness should be implemented with college students. As an added benefit, the online nature of class lectures via a Learning Management System allowed for more flexible scheduling of curricular content during the pandemic, allowing students to adapt to changes in the course. This indicates that IPAP (or physical educators) can go beyond the traditional face-to-face model of physical education teaching and scope and achieve positive results within student wellness.

The findings support the concept that, when aspects of wellness are focal topics in IPAP, wellness scores should increase (Cardinal, 2014). Individual illness related issues (e.g., flu seasons, colds, etc.) and natural disruptions (Lothes et al., 2021) are more likely to occur during future academic semesters, and universities should have a plan in place to deliver wellness content to students. With this information, universities should have an established plan to deliver wellness content to students during periods of isolation or distance learning. Given the findings of this study, wellness can be enhanced when a university offers wellness courses in an online format. Providing and maintaining a healthy academic environment for students is critical during times of social disruption, and through formatted online wellness courses this is feasible.

One of the predominant roles of health educators is to assist students on their wellness journey and promote well-being (Cardinal, 2020; Casebolt et al., 2017; Lothes, 2020; Lothes & Kantor, 2021; Travis & Ryan, 2004). Through effective education on the dimensions of wellness, educators can help college students maintain or enhance their wellness journey, developing skills and awareness that may benefit students even after graduation. This study contributes to the literature on student wellness by looking at wellness changes prior to the COVID pandemic, during, and after students went back to traditional in-person learning. Future studies should be conducted following a similar nature, comparing how different environments, delivery modalities, and various models of wellness impact college student wellness. It is also suggested that future studies include a longitudinal assessment to measure the impact of student wellness over time.

### Limitations and Recommendations

There are limitations to this study. First, there was no control group to see if the perceived developments were the outcomes of the online course or if the developments were an outcome of attending college or using a group of students that have never taken a wellness course as a matched control group. It is advised that future studies include

a control group for comparison. One possible way of doing this would be assessing the overall wellness of an incoming freshman class and then comparing those scores to when they take their wellness/physical education course. Assessing an incoming freshman class could also provide some very insightful longitudinal information on how a wellness curriculum may affect university students' wellness during their academic stay.

## CONCLUSION

The results of this study offer evidence that when a college wellness course is designed to address different dimensions of wellness, even if delivered in the midst of worldwide disruption, students can enhance their whole person wellness. During all semesters and academic years, pre-COVID, during the COVID pandemic, and post COVID, wellness scores showed significant increases. When all semesters were combined and examined, 5-year wellness scores and all 12 wellness dimensions showed statistically significant increases in scores from the start of the semester to the end of the semester. Providing fundamental principles of wellness and PA during the student's college years can have lifelong implications. Promoting innovative, online IPAP during a pandemic, when university support services and in person peer support is less available, is a recommended strategy to support student well-being.

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