Title

**Financial Stress and Its Impact on Life Satisfaction and Well-Being among University Students during the COVID-19 Pandemic: Evidence from a Secondary City in Bangladesh**

**Running title**

**Happiness among Students During COVID-19**

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**Conflict of Interest Statement**

Authors declare no conflicts of interest.

**Data Accessibility Statement**

Data is available on request.

**Abstract:** This study aimed to explore how financial circumstances affect the perception of life satisfaction and well-being among university students in a secondary city of Bangladesh during the COVID-19 pandemic. A sample of 1125 university students provided relevant information in response to the questionnaire provided through a Google Form. Basic statistical methods, canonical correlation analysis, ANOVA, and Duncan multiple comparison tests have been used for analysis. The study has identified that the COVID-19-generated social environment was a latent reality that had a seriously negative impact on all aspects of students’ life satisfaction and well-being. Despite the students being forced to adjust themselves to the situation in order to gain life satisfaction by having the basic needs of life, the students did not feel better. Those who lost their jobs, had their gross family income reduced, had their living environment decline due to any financial crisis, and were unable to eat nutritious meals for lack of money after the start of COVID-19 reported significantly lower levels of both life satisfaction and well-being than the corresponding rest. Moreover, in terms of life satisfaction and well-being levels, several distinct and non-distinct homogeneous groups that originated from other important recognized financial measures were also identified. For almost all the financial measures, the proportion of students who fall into the "unprivileged" category is half or higher. As a result, policymakers should be concerned about the financial crisis and mental health problems that COVID-19 has caused among university students and take the necessary steps to alleviate them.

**Keywords:** Financial circumstances; Life satisfaction; Well-being; University students; COVID-19 pandemic; Bangladesh

**1. Introduction**

Life satisfaction and well-being, which are components of health outcomes, have a significant impact on people's perspectives and lives ([Charlemagne-Badal, Lee, Butler, & Fraser, 2015](#_ENREF_12)). In general, life satisfaction depends on a person's position in obtaining basic needs (such as food, housing, and income) as well as the ability and right to access modern amenities (e.g., transportation, electricity, cell phone usage, etc.) ([CDC, 2011](#_ENREF_9)). Well-being describes the degree of life satisfaction in addition to other aspects such as physical, economic, social, developmental, and recreational activities, as well as emotional and psychological aspects, engaging activities and work, and so on. It is a positive outcome that can be described as judging life positively and feeling good ([CDC, 2011](#_ENREF_9); [Ruggeri, Garcia-Garzon, Maguire, Matz, & Huppert, 2020](#_ENREF_41)). Identification of perception in terms of quantifying the two intangibles, "life satisfaction" and "well-being," would be beneficial in assessing a person's life perspectives. It may be possible to determine the happiness that exists in a community from how its members rate their level of life satisfaction and well-being.

Social communication and life satisfaction are inextricably linked ([Chen, Yang, & Feng, 2019](#_ENREF_13)). However, among the university students, those with a higher socioeconomic position, better grade point averages, were happier with their academic experiences, self-esteem, romantic relationships, and superior living conditions reported feeling significantly more satisfied with life ([Chow, 2005](#_ENREF_14)). The Satisfaction with Life Scale (SWLS) is a quick 5-item survey on a 7-point Likert scale that has been found to be internally consistent in assessing one's overall cognitive perceptions of life satisfaction ([Diener, Emmons, Larsen, & Griffin, 1985](#_ENREF_19); [Esnaola, Benito, Agirre, Freeman, & Sarasa, 2017](#_ENREF_22)).

In addition to interpersonal communication, small group communication, organizational communication, and even mass communication are associated with personal well-being ([Michalos, 2014](#_ENREF_34)). Moreover, tobacco use, depression, having ever received mental health services, personality traits, physical activity, and sleep quality have all been demonstrated to be predictors of mental health and well-being among tertiary students ([Cha, 2003](#_ENREF_10); [Rahman et al., 2021](#_ENREF_37); [Ridner, Newton, Staten, Crawford, & Hall, 2016](#_ENREF_38); [Urmi, Rahman, Uddin, & Hasan, 2022](#_ENREF_50)). There is no unique method to describe and assess how well-being is perceived. The World Health Organization Well-Being Index (WHO-5) is a brief questionnaire that asks five straightforward, non-intrusive questions on a 6-point Likert scale. It has been successfully used in a variety of study fields, particularly in the screening for depression ([Topp, Østergaard, Søndergaard, & Bech, 2015](#_ENREF_48)).

Under normal circumstances, several studies ([Denovan & Macaskill, 2017](#_ENREF_18); [Mahmoud, Staten, Hall, & Lennie, 2012](#_ENREF_33); [Watson, Barber, & Dziurawiec, 2015](#_ENREF_51); [Xiao, Tang, & Shim, 2009](#_ENREF_52)) have found that monetary strain is one of the most common experiences among university students, having an impact on their mental life satisfaction and well-being. Generally, students who do not live with their parents have much greater levels of perceived financial stress, depression, and life satisfaction ([Watson, et al., 2015](#_ENREF_51)). The level of overall life satisfaction and financial stability of an individual are significantly influenced by the family's financial situation ([Brown & Gray, 2016](#_ENREF_7)). Income and wealth are important contributors to well-being and life satisfaction. As income increases, people's quality of life usually increases as well ([Gallo & Matthews, 2003](#_ENREF_23)). Debt is commonly linked to declining subjective health indices and psychological well-being([Bridges & Disney, 2010](#_ENREF_6)). Financial difficulties that are caused by expanding debts, particularly unsecured debts, are associated with the deteriorating mental and physical health of students ([Kim & Chatterjee, 2019](#_ENREF_29)). Students who begin their academic program with savings and no debt are more likely than those who have debt but no savings to pass all their courses on the first attempt ([Harding, 2011](#_ENREF_24)). Longer periods of work outside of university, as well as financial challenges in meeting academic expenses, are associated with poorer mental health. The psychological and physical health of students who think about quitting their studies for financial reasons has been found to be worse, as have their levels of social functioning and liveliness ([Roberts, Golding, Towell, & Weinreb, 1999](#_ENREF_39)).

During the COVID-19 pandemic, a major disaster prevailed that hindered the normal functioning of the whole world, including academic activities at universities. To control the outbreak, social-distance was maintained, and consequently, educational institutions were kept closed, which could have resulted in social isolation among students. Social isolation is related to poor life satisfaction ([Arslan, 2019](#_ENREF_3); [Bayram, Aytac, Aytac, Sam, & Bilgel, 2012](#_ENREF_4)), and it also has a detrimental impact on well-being ([Chappell & Badger, 1989](#_ENREF_11); [Stanley, Hensher, Stanley, & Vella-Brodrick, 2011](#_ENREF_45)). Since the isolation was essential, there was very limited commerce and economic activity, which had a significant impact on the financial circumstances of people from all walks of life. Therefore, as COVID-19 spread over the world, it was crucial to examine the prevailing life satisfaction and well-being among university students in developed and developing countries to lessen the negative effects on higher education. Furthermore, it was necessary to assess how the students' mental health might be affected by the altered financial circumstances.

According to studies, the situation of university students' life satisfaction and well-being deteriorated as a result of the global pandemic crisis, though the level of well-being appeared to be more severely affected ([Aristovnik, Keržič, Ravšelj, Tomaževič, & Umek, 2020](#_ENREF_2); [Kohls, Baldofski, Moeller, Klemm, & Rummel-Kluge, 2021](#_ENREF_30); [Lopes & Nihei, 2021](#_ENREF_32); [Tran et al., 2022](#_ENREF_49)). In different countries, students' financial circumstances at the time had a big impact on their lives, and it was the most influential indicator of their life satisfaction and well-being ([Birmingham et al., 2021](#_ENREF_5); [Cao et al., 2020](#_ENREF_8); [Kokkinos, Tsouloupas, & Voulgaridou, 2022](#_ENREF_31); [Lopes & Nihei, 2021](#_ENREF_32)). The individual's assessment of these two measures was slightly unaffected by the country's respective economic condition.

In Bangladesh, according to government instructions, on-campus academic activities in all educational institutions were suspended between March 17, 2020, and September 11, 2021 ([Correspondent, 2021](#_ENREF_16)). To our best knowledge, along with others’, there is an unpublished study on mental well-being and satisfaction with life among university students ([Hossain Sujan et al., 2022](#_ENREF_25); [Khan et al., 2020](#_ENREF_28)), but there have been absolutely no such studies done on a university in the secondary city of Sylhet, Bangladesh, over their financial circumstances. Therefore, the purpose of this study was (i) to use a unique approach to evaluate the university students’ life satisfaction and well-being during the COVID-19 pandemic and (ii) to assess the impact of the financial circumstances of the students on their perception of life quality. In addition to its contribution to the literature, it will assist the relevant authorities in taking the required actions to lessen the suffering of students.

**2. Materials and Methods**

*2.1. Data collection*

From March 25 to May 16, 2021, a cross-sectional online survey among the approximately 10 thousand running students at “<BLINDED>”, was conducted, which produced the relevant data from a random sample of 1125 responses. Participating students gave their consent to the study by typing their own registration numbers on the online form. The nine affiliated medical, dental, and nursing colleges under the School of Medical Sciences were beyond the scope of reach, and thus the students from remaining 27 departments under six different schools were included in this study ([“<BLINDED>”, 2022](#_ENREF_47)). When the survey was administered, every undergraduate participant was enrolled in the second semester of their respective year, and therefore, all replies came from those who were taking the second, fourth, sixth, and eighth semesters, as well as two semesters of the master's program. As declared on the online form, five respondents were selected at random to provide 1000 BDT each as winners from the participants.

*2.2. Survey Instruments*

The survey was intended to take less than 10 minutes to complete and was pilot tested with ten students to ensure understanding and readability. This survey consisted of four dimensions: socio-demographic characteristics, the Satisfaction with Life Scale (SWLS), the WHO Well-Being Index (WHO-5), and financial circumstances, Socio-demographic characteristics integrated general parameters like gender (male or female), age, religion, division of permanent residence, living place (urban or rural), etc. To determine the financial circumstances and their impact, students were also asked questions about their financial supporters, months to live off savings, engaged in any job, whether they lost it or not, monthly gross family income, whether it was reduced, what percentage it was reduced, debt status, their living environment, their ability to eat nutritious meals, and their ability to pay academic expenses.

*2.3. Analysis*

To assess both the socio-demographic and financial backgrounds, we used descriptive analysis. Chi-square tests were used to assess the association between different measures of financial circumstances. The Cronbach’s Alpha reliability coefficient was calculated for the SWLS and WHO-5, and then factor analysis was performed to reveal the factorial structure of these two scales. We conducted a Canonical Correlation Analysis to investigate the relationship between the aforementioned two indices. Finally, t-tests, ANOVA (analysis of variance), and Duncan tests were performed to identify the significant groups.

**3. Results**

*3.1. Socio-demographic Background*

All the participating students from the SUST were young; of them, 91.5% are between 18 and 23 years old. The majority of participants were male (71.5%). The average height and weight of the students are 65.48 (±3.52) inches and 61.93 (±12.23) kg, respectively. According to the religious backgrounds of the students, Islam has the highest representation (83.5%), while a substantial minority identified themselves as Hindu (16.5%), and the rest are others. Students are typically from well-educated families (75.7% of fathers and 67.2% of mothers of the students have an educational status of secondary or above). The fathers of the students have a diverse range of occupations, with the majority doing jobs or providing services (46%). The basic information of the students according to different schools is summarized in Table 1.

**Table 1.** Gender, Age, and Semester according to different schools.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Domain of study | | | | | | Total |
| Variables |  | **Agriculture & Mineral Sciences** | **Applied Sciences & Technology** | **Life Science** | **Management & Business Administration** | **Physical Sciences** | **Social Sciences** |
| What is your gender? | Female | 17 (26.6%) | 77 (20.4%) | 31 (33.3%) | 9 (27.3%) | 51 (19.5%) | 136 (45.9%) | 321 (28.5%) |
| Male | 47 (73.4%) | 300 (79.6%) | 62 (66.7%) | 24 (72.7%) | 211 (80.5%) | 160 (54.1%) | 804 (71.5%) |
| What is your age? | < 20 | 8 (12.5%) | 35 (9.3%) | 8 (8.6%) | 2 (6.1%) | 17 (6.5%) | 15 (5.1%) | 85 (7.6%) |
| 20 - 21 | 36 (56.3%) | 182 (48.3%) | 55 (59.1%) | 15 (45.5%) | 122 (46.6%) | 135 (45.8%) | 584 (48.5%) |
| 22 - 23 | 17 (26.6%) | 126 (33.4%) | 26 (28.0%) | (13 39.4%) | 96 (36.6%) | 121 (41.0%) | 399 (35.5%) |
| ≥ 24 | 3 (4.7%) | 34 (9.0%) | 4 (4.3%) | 3 (9.1%) | 27 (10.3%) | 24 (8.1%) | 95 (8.5%) |
| In which semester do you study? | 1/2 | 29 (45.3%) | 135 (35.8%) | 34 (36.6%) | 8 (24.2%) | 66 (25.2%) | 96 (32.4%) | 368 (32.7%) |
| 2/2 | 22 (34.4%) | 79 (21.0%) | 31 (33.3%) | 8 (24.2%) | 73 (27.9%) | 55 (18.6%) | 268 (23.8%) |
| 3/2 | 3 (4.7%) | 76 (20.2%) | 12 (12.9%) | 7 (21.2%) | 43 (16.4%) | 72 (24.3%) | 213 (18.9%) |
| 4/2 | 10 (15.6%) | 81 (21.5%) | 15 (16.1%) | 7 (21.2%) | 69 (26.3%) | 66 (22.3%) | 248 (22.0%) |
| Masters’ 1st | 0 (0.0%) | 4 (1.1%) | 1 (1.1%) | 0 (0.0%) | 1 (0.4%) | 2 (0.7%) | 8 (0.7%) |
| Masters’ 2nd | 0 (0.0%) | 2 (0.5%) | 0 (0.0%) | 3 (9.1%) | 10 (3.8%) | 5 (1.7%) | 20 (1.8%) |

Besides, differences in living arrangements and family situations are also observed. When the university campus was closed due to the COVID-19 outbreak, 55.8% of the students resided in rural areas with their families. During their off-campus days at that time, approximately one-third of students lived in Dhaka Division, where the capital of Bangladesh is also located. More than half of the students (60.4%) have 4 or 5 members in their family, while a few of them (2.8%) have more than 10 members. Among the families, 28.2% have at least one senior citizen age 65 or older. 13.7% of students reported that they have at least one frontline worker for COVID-19 in their families, including health workers and doctors.

*3.2. Financial Circumstances*

Half of the students (49.6%) reported that their families took care of all of their financial requirements, while 36.7% claimed that they and their families shared the cost of meeting those requirements. A countable proportion (10.8%) of students claimed to finance themselves, with the remaining students relying on their relatives or other funding options like scholarships. Moreover, in terms of live-off capacity, 30.1% of students reported a miserable condition of ability for less than one month, and 24% reported poor ability for 1 to 3 months. Among the remaining around 46%, 20% students anticipated that they would live off more one year.

When all family members who were employed were taken into account, 40.9% of students reported having a monthly family gross income of less than 20,000 Bangladesh Taka (BDT). As the range of total income climbed with an interval of 20,000 BDT, the percentage quickly decreased to 30.1%, 16.9%, 6.4%, and 5.7%, respectively. Students who had the highest monthly family gross income level (more than 80,000 BDT) anticipated they could live off savings for more than a year. In terms of gross family income, there are huge discrepancies amongst the students (= 184.54, df = 16, p < 0.001). A majority (72.8%) of students reported that their monthly gross income had been reduced due to the COVID-19 pandemic. Additionally, 29.5% of the students estimated that the reduction in monthly gross income was 10–30%, while 17.7% assessed it at 30–50%, and 14.8% and 10.8% reported a reduction of 1–10% and more than 50%, respectively.

Most students (59.1%) had jobs prior to the pandemic's onset, such as house tuition, internet outsourcing, etc., but the majority of them (68.7%) had lost the opportunity. When compared to female students, male students had a higher likelihood of losing their jobs (= 21.804, df = 2, p < 0.001). Comparatively to other students who fit the same criteria, students who lost their jobs (= 62.569, df = 2, p < 0.001), had the lowest monthly gross income level (0–20,000BDT) (= 77.13, df = 4, p < 0.001), and had fathers who worked in non-agricultural occupations (= 86.95, df = 3, p < 0.001) were more likely to experience a fall in monthly gross income.

In the survey, 46.2% of students mentioned they had no debt, 26.7% mentioned they had about the right amount, 19.1% mentioned they had a little too much, and 8.1% mentioned they had way too much. The risk of having any sort of debt increased for students who lost their jobs due to the pandemic (=22.994, df = 2, p < 0.001). A reduction in monthly gross income was found also significantly associated with having debt (= 31.192, df = 1, p < 0.001).

Any decline in financial ability, according to 41.1% of the students, had an adverse effect on their living environment (i.e., the physical condition of their place of residence) or living arrangement (i.e., the people with whom they lived during the off-campus days of the pandemic). Students were more likely to experience a declining living situation when they had debt (= 47.245, df = 1, p < 0.001), lost jobs (= 46.425, df = 2, p < 0.001), and lived in rural areas during COVID-19 (= 85.79, df = 1, p < 0.001).

For lack of money, 39.2% of the students were often or sometimes unable to eat nutritious meals. It was also more likely to happen when they had debt (= 38.781, df = 1, p < 0.001). A total of 34.9% of students had paid their tuition on time or planned to do so; 31.6% had paid late or would do so; and 30.9% had struggled to pay their tuition. Despite being non-significant (2.6%), several students indicated worry about the possibility of quitting academic life.

*3.3. Validity and Reliability Analyses*

The validity and reliability of the two scales— the Satisfaction with Life Scale Index (SWLS) and the WHO Well-being Index (WHO-5) —used in this study have been examined using factor analysis and Cronbach's Alpha.

The SWLS scale demonstrated strong internal consistency. For this scale, the Cronbach's Alpha reliability coefficient was 0.796. In addition, while factor analysis was used to evaluate the scale's validity, it accounted for 56.18% of the total variation and displayed a single factor structure (KMO = 0.804, Chi-square = 1790.391, df = 10, p < 0.001).

The WHO-5 as a scale also showed high internal consistency. The Cronbach’s Alpha reliability coefficient for this scale was 0.891. The scale was found to be valid using factor analysis. . As a single-factor structure, this scale explained 69.92% of the total variance. Hence, this scale could be considered a single-factor structure (KMO = 0.865, Chi-square = 3183.893, df = 10, p < 0.001).

**Table 2.** Canonical Correlations and the Tests for Dimensions.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Dimension | Canonical Correlation | Eigenvalue | Wilks Statistic | F | P - values |
| 1 | 0.518 | 0.367 | 0.712 | 15.88 | <0.001 |
| 2 | 0.131 | 0.018 | 0.973 | 1.89 | 0.017 |
| 3 | 0.078 | 0.006 | 0.991 | 1.19 | 0.299 |
| 4 | 0.059 | 0.003 | 0.997 | 0.97 | 0.422 |
| 5 | 0.003 | 0.000 | 1.000 | 0.01 | 0.926 |

*3.4. Relationship between SWLS and WHO-5*

The SWLS has a mean score of 3.99 and a standard deviation of 1.32. Similarly, the mean score of the WHO-5 is 1.79, with a standard deviation of 1.11.

The relationship between the SWLS and the WHO-5 has been investigated using a canonical correlation analysis (Table 2). Five variables make up every set. Therefore, five canonical variates have been produced. Between the sets of variables, there is a canonical correlation of 0.518, 0.131, 0.078, 0.059, and 0.003 for each of the five dimensions. However, the canonical correlation analysis's dimensionality test reveals that only the first two canonical variates, with p-values of 0.001 and 0.017, respectively, are significant at the 5% level of significance. Moreover, the first canonical variate explained 93.15% of the total variation of the data.

Table 3 displays the canonical loadings for the first two dimensions of the SWLS and WHO-5 items. With the exception of the last item (If I could my life over, I would change almost nothing.) for the SWLS, Dimension 1 had a major influence on every item for the SWLS and the WHO-5, and it had a negative association with everyone. However, only the first item for the SWLS (In most ways, my life is close to my ideal.) and the second item for the WHO-5 (Over the last 2 weeks, I feel calm and relaxed.) were relevant for Dimension 2, with a positive and a negative sign, respectively.

**Table 3.** Canonical Loadings.

|  |  |  |  |
| --- | --- | --- | --- |
| Satisfaction with life scale |  | Canonical Loadings | |
|  | Dimension 1 | Dimension 2 |
| In most ways, my life is close to my ideal. | -0.64 | 0.65 |
| The conditions of my life are excellent. | -0.94 | -0.24 |
| I am satisfied with my life. | -0.84 | 0.02 |
| So far, I have gotten the important things I want in life. | -0.65 | 0.36 |
| If I could my life over, I would change almost nothing. | -0.43 | 0.12 |
| WHO Well-Being Index |  | Canonical Loadings | |
|  | Dimension 1 | Dimension 2 |
| Over the last 2 weeks, I feel cheerful and in good spirits. | -0.84 | -0.19 |
| Over the last 2 weeks, I feel calm and relaxed. | -0.83 | -0.53 |
| Over the last 2 weeks, I feel active and vigorous. | -0.84 | 0.16 |
| Over the last 2 weeks, I wake up feeling fresh and rested. | -0.77 | 0.22 |
| Over the last 2 weeks, my daily life is filled with things that interest me. | -0.86 | 0.14 |

*3.5. Role of Financial Circumstances on Life Satisfaction and Well-Being*

The financial measurements that revealed the participating students' financial situation were evaluated in relation to their self-reported scores on the SWLS and WHO-5 scales. Table 4 shows the results of the t-tests, ANOVA, and Duncan tests as well as the significant groups that were defined accordingly. The t test has been used for measurements of dichotomous categories, while an ANOVA with the F test has been used for measurements of more than two categories. Following the significant F test, the Duncan test was subsequently used to determine the homogenous groups within a particular group. The categories of each measurement have been represented by the numerals 1, 2,..., etc.

In addition to job holders in normal circumstances, those who lost their jobs, had their gross family income reduced, had their living environment decline due to any financial crisis, and were unable to eat nutritious meals for lack of money after the start of COVID-19 reported significantly lower levels of both life satisfaction and well-being than the corresponding rest. As described in subsection 3.2, the proportion of students who fall under the "unprivileged" category of each of the aforementioned criteria is roughly half or higher.

According to the scores for life satisfaction among students, there were several types of two distinct homogeneous groups, namely, amount of savings: those who could live off them for less than six months and those who could do so for more than six months; gross family income: between 0 and 40000 BDT and over 40000 BDT; the percentage of reduction in gross family income: more than 50% and between 1-50%; and the ability to pay academic expenses: those who had problems in paying and those who had no obstacles. In each case, the former group scored significantly lower than the latter. However, financial supports resulted in two non-distinct homogeneous groups: one that did not include scholarship-facilitated students and another that did not consider solely relatives' supported students; and lastly, debt status resulted in three non-distinct groups with the help of secured scores on the SWLS.

**Table 4.** Impact of financial circumstances on WHO-5 and SWLS.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Measures | ­Life Satisfaction (SWLS-5) |  | Well-Being (WHO-5) |  |
| Mean | SD | Mean | SD |
| Financial supporters  My relative(s)1  Myself and my relative(s)2  Myself3  Myself and my family4  My family5  Other (like scholarship)6 | 3.1800  3.5176  3.7884  3.9918  4.0717  4.1667 | 0.80802  1.55251  1.37775  1.29474  1.30758  1.52534 | 1.3000  1.5765  1.4347  1.8102  1.8692  1.3667 | 0.6128  1.0721  0.9625  1.082  1.1517  1.0539 |
| F = 2.223, p = 0.05  Duncan: 1-5, 2-6 |  | F = 3.817, p = .002  Duncan: 1-6 |  |
| Months of living on savings  Less than 1 month1  1-3 months2  4-6 months3  More than 6 months4  More than a year5 | 3.8106  3.9104  3.8910  4.2137  4.3049 | 1.28713  1.34826  1.28884  1.23660  1.32369 | 1.6065  1.6822  1.8303  1.9247  2.0756 | 1.02007  1.04254  1.03450  1.13189  1.27314 |
| F = 6.419, p < .001  Duncan: 1-3, 4&5 |  | F = 7.438, p < .001  Duncan: 1-3, 3&4, 4&5 |  |
| Job prior to the COVID-19  No  Yes | 4.0961  3.9269 | 1.31035  1.31608 | 1.9665  1.6656 | 1.18370  1.03774 |
| t = 2.123, p = 0.034 |  | t = 4.513, p < .001 |  |
| Lost the job during COVID-19  No  Yes | 4.3066  3.7671 | 1.21446  1.3256 | 1.9756  1.535 | 1.11182  0.9771 |
| t = 4.91, p< .001 |  | t = 5.092, p < .001 |  |
| Monthly family gross income  0 - 20,0001  20,000 - 40,0002  40,000 - 60,0003  60,000 - 80,0004  More than 80,0005 | 3.8135  3.9145  4.2463  4.4833  4.4500 | 1.32115  1.31505  1.21296  1.29169  1.28483 | 1.5539  1.8301  2.0379  2.1306  2.1312 | 1.02685  1.07612  1.08625  1.28531  1.34198 |
| F = 8.873, p < .001  Duncan: 1-2, 3-5 |  | F =11.304, p < .001  Duncan: 1, 2&3, 3-5 |  |
| Monthly income was reduced  No  Yes | 4.2026  3.9189 | 1.19342  1.35129 | 1.9935  1.7121 | 1.13367  1.09074 |
| t = 3.231, p = .001 |  | t = 3.809, p < .001 |  |
| The percentage, if reduced  1 - 10%1  10 - 30%2  30 - 50%3  more or equal to 50%4 | 4.0754  3.9801  3.9337  3.5107 | 1.31820  1.29128  1.40059  1.41231 | 1.9102  1.7548  1.7246  1.3008 | 1.19127  1.03171  1.05589  1.06806 |
| F = 6.143, p <0.001  Duncan: 1-3, 4 |  | F = 9.321, p < .001  Duncan: 1&2, 2&3, 4 |  |
| Current debt status  Do not have any debt1  A right amount to debt2  Have a bit too much debt3  Have a far too much debt4 | 4.1619  3.9847  3.8364  3.4615 | 1.27063  1.29000  1.33257  1.43935 | 1.8804  1.8100  1.6505  1.5187 | 1.16702  1.05806  1.04530  1.01805 |
| F = 9.006, p < .001  Duncan: 1&2, 2&3, 4 |  | F = 4.162, p = .006  Duncan: 1-3, 3&4 |  |
| Declination of the living environment  No  Yes | 4.1170  3.8225 | 1.26975  1.36190 | 1.9460  1.5628 | 1.13560  1.03005 |
| t = 3.715, p < .001 |  | t = 5.783, p < .001 |  |
| Any inability to eat nutritious meals  No  Yes | 4.1582  3.7447 | 1.28992  1.31744 | 1.9573  1.5270 | 1.14354  1.00001 |
| t = 5.205, p < .001 |  | t = 5.467, p < .001 |  |
| Inability of academic expenses  The risk of withdrawal from academic life1  Struggled / will struggle to pay2  Paid / will pay in delay3  Paid / will pay on time4 | 3.3862  3.7690  3.8918  4.3364 | 1.25006  1.35109  1.29877  1.23053 | 1.4759  1.5132  1.7572  2.0840 | 1.15933  1.01740  1.00966  1.19658 |
| F = 15.625, p< .001  Duncan: 1-3, 4 |  | F =18.093, p < .001  Duncan: 1-3, 4 |  |

In terms of students' well-being, all forms of financial support comprised one homogeneous group; however, only “the ability to pay academic expenses” produced two distinct homogeneous groups: those who had problems paying and those who had no obstacles. The remaining financial measures, such as living off savings, gross family income, percentage reduction in gross family income, and debt status, resulted in more than one non-distinct homogeneous group among the students in terms of their scores on the WHO-5.

**4. Discussion**

This study has used the Satisfaction With Life Scale (SWLS) and the World Health Organization Well-Being Index (WHO-5) to assess life satisfaction and well-being among university students and found both scales to be valid and reliable. It is supported by the earlier studies that used the SWLS among Turkish and Hong Kong university students ([Durak, Senol-Durak, & Gencoz, 2010](#_ENREF_21); [Sachs, 2003](#_ENREF_42)) and the WHO-5 among Canadian and Iranian university students ([Dehshiri & Mousavi, 2016](#_ENREF_17); [Downs, Boucher, Campbell, & Polyakov, 2017](#_ENREF_20)). As a result, for any sample of Bangladeshi university students, the SWLS and the WHO-5 may be regarded as good measures of life satisfaction and wellbeing, respectively.

As far as we are aware, no studies have looked at the relationships between items from the WHO-5 and the SWLS using canonical correlation analysis. This study has found two significant dimensions in the correlation among the items of the WHO-5 and the SWLS. The first dimension has negative canonical loadings from each item of the WHO-5 and the SWLS. This dimension could be related to the effects of the COVID-19-generated social environment on the perception of life satisfaction and well-being among participating university students. That is, the COVID-19-generated social environment was a latent reality that had a seriously negative impact on all aspects of students’ well-being and life satisfaction. This may be the result of depression, anxiety, and stress symptoms due to isolation and movement restrictions. Our findings match those of other studies ([Lopes & Nihei, 2021](#_ENREF_32); [Tran, et al., 2022](#_ENREF_49)) conducted on university students in Brazil and Vietnam. Furthermore, the SWLS item "life is close to ideal" is highly strongly correlated with the second dimension of canonical correlation, whereas the WHO-5 item "calm and relaxed" is significantly negatively linked with it. The sign and size of the loads of other items from both the SWLS and the WHO-5 imply that, despite being forced to adjust themselves to the situation in order to gain life satisfaction by having the basic needs of life, the students did not feel better. As a result, the students' perception of well-being, which describes the degree of life satisfaction, was essentially nonexistent. A study in Spanish society produced similar results ([Odriozola-González, Planchuelo-Gómez, Irurtia, & de Luis-García, 2020](#_ENREF_35))

The finding of a lower level of life satisfaction and well-being among job holders in normal circumstances indicates that, because of the financial crisis, students are more likely to take jobs in order to lead their lives than they are to do so on a whim. It disagrees with those of Chinese medical students ([Shi, Wang, Bian, & Wang, 2015](#_ENREF_43)). But other studies have reported similar findings to those of this study about the negative effects of job losses, reduced income, and living conditions on the perception of life satisfaction and well-being ([Clair, Gordon, Kroon, & Reilly, 2021](#_ENREF_15); [Lopes & Nihei, 2021](#_ENREF_32); [Özmen, Özkan, Özer, & Yanardağ, 2021](#_ENREF_36); [Sugawara, Masuyama, & Kubo, 2022](#_ENREF_46)). The previous findings based on living conditions and consuming nutritious meals were also the same as in this study ([Afzali, Ryazantsev, & Shakeri, 2020](#_ENREF_1); [Rudert & Janke, 2022](#_ENREF_40)).

Although emergency savings (up to three months) in times of pandemic ([Singh, Bhatia, & Nigam, 2021](#_ENREF_44)) were found to have a negative impact on life satisfaction, the period that was known in this study was six months. This might be because students are less likely to be responsible for covering other family members' expenses. Life satisfaction was significantly lower in US adults with a monthly household income of less than $ 3,000 ([KAMİLÇELEBİ, 2020](#_ENREF_27)), but it was less than 40,000 BDT for Bangladeshi university students during COVID-19. There are no other studies that have found, as this one did, that a 50% decrease in gross family income has a significant impact on life satisfaction. The finding of obstacles to paying academic expenses was a crucial reality, and thus, international students withdrawing from academic studies was an extreme case in China([Jiang, Yuen, & Horta, 2020](#_ENREF_26)). The generation of two non-distinct groups based on financial supporters, one that did not include scholarship-facilitated students and another that did not consider solely relatives' supported students, was logical in the sense that both are, as indicated by their scores, reversely satisfied with their lives. This is due to the fact that students who receive scholarships generally live in greater comfort without the risk of incurring debt. In addition, earlier studies found that debt is linked with life satisfaction because it generates financial issues that ultimately have an impact on students' physical and mental health as well as their academic performance ([Bridges & Disney, 2010](#_ENREF_6); [Harding, 2011](#_ENREF_24); [Kim & Chatterjee, 2019](#_ENREF_29)). Therefore, in this regard, this study revealed three overlapping homogeneous groups since the status of carrying debt has a variety of effects on students.

According to the canonical analysis, perceived well-being among university students in this study was almost nonexistent during COVID-19. Thus, most financial measurements could not clearly identify non-overlapping homogeneous groups when considering well-being. However, as the students are usually concerned with paying academic expenses, the distinct groups of those who had problems paying and those who had no obstacles were clearly identified by the perception of well-being of the participating students. Finally, all forms of financial support did not significantly differ among themselves to create groupings among students in terms of their perceived well-being.

**5. Conclusions and Limitations**

This investigation on how the financial circumstances under the COVID-19 pandemic influenced the perspectives of university students on their lives is the first of its kind for the secondary city of Sylhet, Bangladesh. In addition to the socio-demographic background, the direct effects of the pandemic on life satisfaction and well-being were clearly detected by the appropriate canonical correlation analysis. The perspectives among the students in terms of life satisfaction and well-being differ according to various financial factors. According to the findings, the student’s overall perceptions of their life satisfaction were not at a satisfactory level, whereas the well-being state was almost absent. Students with unprivileged and vulnerable financial conditions marked relatively low scores in both the SWLS and WHO-5 indices. Students who were unable to pay their academic expenses suffered the most in terms of life satisfaction and well-being. Though the form differs, the suffering from financial circumstances caused by the pandemic was fairly evident, and it significantly hampered the normal level of life satisfaction and mental well-being of a large portion of students. As a result, policymakers are expected to be concerned about the mental distress and financial crisis that COVID-19 has caused among university students and take the necessary steps to alleviate them at the national level.

Because of the COVID-19 pandemic, data was collected using an online survey, which may have some errors and gaps. Though the scores of the participants regarding the life satisfaction scale as well as the well-being scale showed statistically significant differences according to all the financial measurements, we did not find out which measurement was said to be more important than the others. In this study, no causal association was investigated but only statistical relationships. The present study was conducted on a representative group of university students in a secondary city in Bangladesh. A further, improved study could be done with people of all ages to understand the overall condition.

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