Level and Associated Factors Predicting Happiness Among Princess Nourah University Students in Saudi Arabia During Covid-19 Pandemic

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ABSTRACT

Background: Happiness is considered as an important part of people's lives, and it has become part of Saudi Arabia's 2030 vision.

Objective: Measure the levels and identify the demographic, family status, and academic factors associated with happiness among students in Princess Nourah Bint Abdulrahman University (PNU).

Methods: A cross-sectional study with 771 participants selected from health, humanities, and science colleges by quota-sampling techniques. The data were collected by an online questionnaire consisting of four sections including the Oxford happiness questionnaire. Inferential analysis was done using Chi-square, ANOVA test, and logistic regression.

Results: The average mean of happiness between the three colleges were found to be 3.97 using the Oxford questionnaire. In the demographic factors, only household income and mother employment were found to be significantly associated with students' happiness. Regarding family status, only family type and the number of family members were found to be statistically significant. However, in the academic factors, all variables were found to be significant, except the field of study and academic level. Multivariable analysis found that household income, mother employment, family number, satisfaction with specialty, environment and classmates can successfully predict the level of happiness.

Conclusion: The mean level of happiness among all colleges is nearly similar, but slightly higher among health colleges. The most associated domain with happiness was found to be academic. Six variables were found to be predictive of students' happiness. This study recommends conducting regular screening to identify any variations of students' happiness levels.

Keywords: Happiness, University Students, Demographic factors, Family status, Academic factors, Saudi Arabia

INTRODUCTION

Happiness is usually defined as good fortune and positive external situations although it has diverse meanings across societies, which changed over time. Nevertheless, **the** American dictionary, defined happiness as a positive internal feeling[1]. Presently, happiness is also known as life satisfaction or subjectively as well-being in social sciences[2]. According to the world happiness report in 2020, the highest happiness index is (7.889) in Finland which holds 1st place and the lowest happiness index is to Zimbabwe with (3.160) where it holds the last place, while the population's happiness index in Saudi Arabia is (6.560) with 21st rank among other countries. The increase in index value indicates that people are happier compared with other countries[3].

Regarding factors affecting happiness, many researchers had studied the psychological, biological, and social dimensions of happiness[4]. Findings showed that genetic factors are the main predictors of happiness by 40 % to 50%[5]. In addition, demographic factors (age, gender, education of level, marital status, etc.) were estimated to have a 10% effect on happiness. Purposeful actions (positive thinking, altruism, coping with stress, etc.) were found to have a 40% effect on happiness[4,6]. Some studies showed that marital status, occupation, educational level, and lack of stress in the past six months are considered as the factors that affect the level of happiness[7,8]. In addition, medical fields were found to have a considerable effect on happiness due to the stressful environment of the specialty[9]; another factor is education due to the challenges that students face[10]. In line with these findings, a conducted survey in the USA, 2018, revealed that the lowest level of happiness was among the age group of 21, due to the hard work in the

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hospital environment[11]. Another study conducted by Kulkarni, Sanjeev 2019 in India to assess the level of happiness among medical students, suggests that the percentage of happiness is higher in students who have hobbies, and those who are living with their families. The study also found that as the academic year progresses, the level of happiness slightly decreases[9].

Measurement of Happiness can through objective and subjective point of view domains. The difference is essential as each domain involves different types of measurements[12]. Objective happiness includes measuring one's mind waves (physiological method); which directly measures the cardinal function[13]. On the contrary, most sociologists favor subjective happiness, because it is easy to measure by self-report surveys, which is the most common technique to evaluate an individual's subjective well-being or happiness[12,14]. Another method to measure subjective happiness is rating by others, although it is not a perfect technique due to its lack of accuracy in estimating others' feelings, for instance, parents tend to overestimate the happiness of their kids[14]. Furthermore, the family unit and the strength of relationships between family members are significantly related to happiness. Many studies showed that the family factor is the most influential factor regarding happiness[15].

The importance of recognition of happiness for students' is clear as positive psychological states creation and maintenance affects their functioning ability and quality of life[16]. The significance of specifically addressed in this topic among university students is primarily linked to the importance of college students for any country's future and the effect of happiness on various aspects of their lives. Many students struggle with educational challenges during their study period, which results in extreme stress and sometimes affects their physical health[16]. Therefore, to overcome these challenges, a psychological factor needs to be assessed which is called happiness[17].

Students' happiness can be considered an important resource which contribute to positive future outcomes since Saudi Arabia has developed twelve strategic programs including quality of life which will be assessed by happiness measurement in order to compare and determine the level of growth with other countries worldwide as well as achieving the objectives of the 2030 vision[18].

The objectives of the research. Firstly, to measure the happiness levels of students. Secondly, to identify the demographic, family status and academic factors that are associated and predicted with happiness among health, humanities, and science colleges in Princess Nourah Bint Abdulrahman University.

METHODS

The study used a descriptive cross-sectional study at Princess Nourah Bint Abdulrahman University in Riyadh, Saudi Arabia from November 2020 to April 2021. The total number of bachelor's students in the university was estimated to be 22817 female students.

Sampling Procedure: The sample size of this research was calculated to be 768 using the formula of infinite population proportion[19]. ($n = (z^2 pq)/d^2 \times df$) Where: n= sample size (for population above 10,000). Z= level of confidence of standard normal distribution, usually set at 1.96 which corresponds to 95% confidence. p= proportion of the characteristic under study when it is unknown use 0.5 q= 1-p, the proportion of not having the characteristic under study. d= the degree of accuracy, usually set at 0.05 level. df= design effect. Then the sample was divided into three strata equally (health, humanities and science colleges). Each strata is (256). The collected sample size from each strata is 257. Thus, the final sample size was concluded to be 771. Participants were recruited by quota sampling technique.

Data Collection Tools: An online questionnaire contains 51structerd questions, arranged in four sections was distributing via social media. The first section consists of eight closed-ended questions about sociodemographic factors. The second section includes five closed-ended questions about family status. The third section contains two parts, the first part contains four closed-ended questions about the academic factors, and the second part contains five questions 5-point Likert scale (1= very dissatisfied, 2= dissatisfied, 3= neutral, 4= satisfies, 5= very satisfied) about satisfaction with the academic environment. The final section is Oxford Happiness Questionnaire, and it includes 29 questions in six -point Likert scale (1= strongly disagree, 2= moderately disagree, 3= slightly disagree, 4= slightly agree, 5= moderately agree, 6= strongly agree). Regarding scoring high score was indicated if a participant strongly agreed or agreed (scale 5-6) / satisfied or very satisfied (scale 4-5) in positive questions and reverse scoring was used for negatively quoted questions. The total maximum score for the satisfaction with academic environment was calculated to be 25 and the total minimum score was 5. For the Oxford section total maximum score was 174 and the total minimum score was 29. In addition, for arranging the references of the study Mendeley (version v1.19.8) was used.

Validity and Reliability: The questionnaire was originally written in English then translated into Arabic, adjusted to apply to Saudi Arabians, and then translated back into English to confirm the equivalence and appropriateness of translation, and a bilingual expert for confirmation reviewed it. In addition, a pilot study was conducted to assess the face validity and internal consistency of the questionnaire among 20 Arabic native speakers, questions were modified according to participants' feedback and any ambiguous questions were clarified by further explanation. The Cronbach alpha reliability test was used to assess the internal consistency of the questionnaire. For academic factors one question was deleted to enhance the questionnaire's reliability, as a result, Cronbach alpha value was considered good with a value of 0.768. While Cronbach's alpha value of the standard Oxford happiness questionnaire was 0.9.

Statistical Analysis: Data were entered, coded, and then analyzed using JMP® (Version <14>. SAS Institute Inc., Cary, NC, 1989-2019). Categorical variables were reported as frequency (%). Quantitative variables were presented as mean and standard deviations (Std). The data were approximately normal due to the large sample size. The cut-off point of happiness was taken from the average mean of happiness for the study population (3.97), participants who got above the cut-off point were considered happier than those who are below the average. Therefore, a One-way Analysis of variance (ANOVA) test was used to compare the level of happiness between; Health, Humanities and Science colleges. Chi-square was also used to assess the association between the level of happiness and academic factors, family status as well as demographic factors. All variables with a p-value of 0.16 and less from the chi-square test were included in the univariable analysis. Backward stepwise logistic regression was used in multivariable analysis to exclude non-significant variables, the final model included variables with a p-value less than 0.15, adjusting for mother education, household income, mother employment, family number, GPA, choosing the specialty, satisfaction with specialty, environment and classmates. The results of the logistic regression were presented as Odds Ratio (OR) and 95% confidence interval (CI) with 0.05 point of significance.

Ethical Consideration: Ethical approval was taken from the Institutional Review Board in princess Nourah University (Approval IRB number 20-0518). Afterward, Informed consent was obtained from the participants at the beginning of the survey to confirm their voluntary participation in addition to explaining their right to withdraw from the study at any time. Also, the consent includes the objectives of the study and its benefit for society. The confidentiality of the data was taken into consideration; no one has access to data files except the research team. Data were coded and analyzed anonymously and were used for research purposes only.

RESULTS

Table 1 demonstrates the average mean of happiness among three different colleges: Humanities colleges, health colleges, sciences colleges, the calculation was based on 5- point Likert scale. It was found that the highest students who achieved above the average score of happiness (3.97) were from health colleges (4.03), followed by humanities (3.95), and colleges of sciences (3.93) who scored below the average. This difference is not statistically significant by the One-way ANOVA test (F= 1.09) (P= 0.33).

Table 2 shows the association between happiness levels and demographic factors. A series of Chi-square tests were conducted to dedicate any significant association. The results indicate that (64.88%) of those who are below the happiness average were aged between 17-20, and (97.24) of the participants who are above the happiness average were single. Also, (98.39%) of those who are below the average were living in their homes. As regards parents' level of education, (46.92%) of those who were below the average had a father who graduated from university, and (47.24%) who were above the happiness average had a mother who also graduated from university. All of the previous variables were not statistically significant (p>0.05). About (75%) of those who are above the happiness average had enough household income with a highly significant association P-value (<.0001). The participants whose fathers were employed full-time were above the happiness average (51.46%), and this association was not statistically significant p-value (0.3933). Regarding mother's employment, (61.03%) who were above the happiness average had an unemployed mother with a significant association p-value (0.0273).

Table 3 shows the association between happiness levels and family-type factors. A series of Chi-square tests were conducted to dedicate any significant association. The results represent that (67.8%) of those who are above the average happiness level have a nuclear family type. And this association was statistically significant with a p-value of (0.0118*). While (92.76%) of those who are below the average happiness level have alive parents, this association was not statistically significant with a p-value of (0.8464). Regarding the parents' marital status (86.7%) of participants above the average happiness level has parents who are currently married. Which has no significant association with a p-value of (0.1532). In addition, (60.05%) of participants above the average happiness level have a family composed of 6-8 members, and this association was found to be a highly significant association with a p-value of (<.0002*). Furthermore, (62.2%) of those who are

below the average happiness level were ranked as the middle child in their family, and this association was not statistically significant with a p-value of (0.5902).

Table 4 demonstrate the association between academic factors and happiness levels in the studied sample. Statistical significance was tested after applying the Chi-square test for the result, and it shows that (33.92%) of the participants who are above the happiness average were students from health college, and this association was not statistically significant P value (0.9347). However, (41.55%) of those who are below the happiness average were in 1-2 academic level, and this association was not statistically significant with a P-value (0.5158). Also, regarding the GPA, (50.50%) of those who are above the happiness average were obtained 4.5-5 with a highly significant association P-value (<.0001). In addition, (73.87%) participants who are above the happiness average were choose their specialty because of personal decisions, and this association was found highly significant P value (<.0001). Moreover (47.74%) of participants were above the average happiness level, and they were very satisfied with their specialties. While (42,9%) of those who were below the happiness average were neutrally satisfied with their college environment. Also, (44.4%) of the participants who were below the happiness average were neutrally satisfied with faculty members. Almost half of the participants (47.72) who were below the average happiness level were neutral in their satisfaction with their classmates. All previous findings of their satisfaction were highly significant P value with (<.0001).

Table 5 shows the results of univariable and multivariable analysis using logistic regression testing 12 variables. It was found that six variables can successfully predict the level of happiness. The household income showed a strong association with the level of happiness (overall p-value = 0.00001), with enough income decreased the odds of being above the happiness average by 88.8% times (95% CI 0.031-0.397; p = 0.0007), and somehow enough decreased the odds by 49.7% times (95% CI 0.344-0.736; p = 0.0004). Also, mother employment (overall p-value = 0.00013), with employed mothers (part-time) raised the odds by 7.334 times (95% CI 2.530-21.257; p = 0.0002). The number of family members has an overall p-value of 0.01580 without any significance in its specific options. Moreover, the satisfaction with specialty (overall p-value = 0.00028), had an increase in the odds of being above the average level of happiness by 3.598 times (95% CI 1.335-9.695; p = 0.0113) for those students who are satisfied with their specialty and for who is very satisfied by 4.748 times (95% CI 1.715-13.143; p = 0.0027). Also, the satisfaction of the college environment has an overall p-value of 0.02632, those dissatisfied students have decreased the odds of being above the happiness average by 71.7% times (95% CI 0.089-0.903; p = 0.02632). Lastly, the satisfaction with classmates also showed a strong association with the level of happiness with an overall p-value = 0.00055.

DISCUSSION

Happiness is a valuable part of people's lives, and it has recently become a concern for Saudi Arabia's 2030 vision. The current study aims to assess the relationship between the happiness level of students and

Table 1: Average means of happiness between three different colleges calculated based on 5 points Likert scale

Colleges	Number	Happiness Score			ANOVA test
		Mean	Classification	Std Dev	
Humanities colleges	257	3.95	Below the average mean	0.75	F Ratio = 1.09
Health colleges	257	4.03	Above the average mean	0.76	Prob > F = 0.33
Colleges of Sciences	257	3.93	Below the average mean	0.85	
Average mean of happiness for study population = 3.97					

Table 2: Association between demographic factors and happiness (n=771)

Variable		Happiness		Chi-square test
		Above the average (n=398) Frequency (column%)	Below the average (n=373) Frequency (column%)	
1- Age	17-20	253 (63.57)	242 (64.88)	$X^2 = 0.398$ P= 0.9406
	21-24	136 (34.17)	124 (33.24)	
	25-28	7 (1.76)	6 (1.61)	
	+29	2 (0.50)	1 (0.27)	
2-Marital states	Single	387 (97.24)	358 (95.98)	$X^2 = 2.988$ P= 0.3935
	Married	10 (2.51)	14 (3.75)	
	Divorced	-	1 (0.27)	
	Widowed	1 (0.25)	-	
3-Residency	Home	389 (97.74)	367 (98.39)	$X^2 = 0.434$ P= 0.8065
	Dormitory	6 (1.51)	4 (1.07)	
	With relatives	3 (0.75)	2 (0.54)	
	Other	-	-	
4-Father's level of education	Uneducated	6 (1.51)	7 (1.88)	$X^2 = 2.817$ P= 0.7281
	Primary school	13 (3.27)	20 (5.36)	
	Secondary school	34 (8.54)	29 (7.77)	
	High school	103 (25.88)	87 (23.32)	
	Bachelor's degree	183 (45.98)	175 (46.92)	
	Post-graduate	59 (14.82)	55 (14.75)	
5-Mother's level of education	Uneducated	30 (7.54)	13 (3.49)	$X^2 = 9.313$ P= 0.0972
	Primary school	37 (9.30)	45 (12.06)	
	Secondary school	34 (8.54)	44 (11.80)	
	High school	91 (22.86)	80 (21.45)	
	Bachelor's degree	188 (47.24)	173 (46.38)	
	Post-graduate	18 (4.52)	18 (4.83)	
6-Household income	Enough	300 (75.38)	215 (57.64)	$X^2 = 32.264$ P=0.0001*
	Somehow enough	94 (23.62)	138 (37.00)	
	Not Enough	4 (1.01)	20 (5.36)	
7-Father's employment	Employed (full-time)	194 (51.46)	165 (46.61)	$X^2 = 2.989$ P=0.3933
	Employed (Part-time)	17 (4.51)	14 (3.95)	
	Unemployed	6 (1.59)	10 (2.82)	
	Retired	160 (42.44)	165 (46.61)	
8-Mother's employment	Employed (full-time)	101 (25.90)	105 (28.46)	$X^2 = 9.153$ P=0.0273*
	Employed (Part-time)	24 (6.15)	9 (2.44)	
	Unemployed	238 (61.03)	217 (58.81)	
	Retired	27 (6.92)	38 (10.30)	

Table 3: Association between family type and happiness levels (n=771)

Variable		Happiness		Chi-square test
		Above the average (n=398) Frequency (column%)	Below the average (n=373) Frequency (column%)	
Family type	Stepfamily	5 (1.26)	14 (3.75)	$X^2 = 10.986$ P= 0.0118*
	Single parent family	13 (3.27)	26 (6.97)	
	Extended family	110 (27.64)	93 (24.93)	
	Nuclear family	270 (67.84)	240 (64.34)	
Parents alive	Only my mother is alive	24 (6.03)	19 (5.09)	$X^2 = 0.813$ P= 0.8464
	Only my father is alive	7 (1.76)	5 (1.34)	
	Both parents are alive	365 (91.71)	346 (92.76)	
	Don't know/no answer	2 (0.50)	3 (0.80)	
Parents marital status	Widow	5 (1.26)	12 (3.22)	$X^2 = 5.267$ P= 0.1532
	Married	345 (86.68)	310 (83.11)	
	Divorce parents	21 (5.28)	28 (7.51)	
	Separated	27 (6.78)	23 (6.17)	
Number of family members	2 or less	-	9 (2.41)	$X^2 = 19.545$ P= 0.0002*
	3-5	40 (10.05)	64 (17.16)	
	6-8	239 (60.05)	191 (29.22)	
	9-11	119 (29.90)	109 (29.22)	
	12 or more	0 (0.00)	0 (0.00)	
Rank in the family	First child	107 (26.88)	99 (26.54)	$X^2 = 1.054$ P= 0.5902
	Middle child First child	273 (59.55)	232 (62.20)	
	Last child	54 (13.57)	42 (11.26)	

associated factors including academic factors, demographic factors, and family status in Saudi Arabia at Princess Nourah University. The mean of happiness among three different colleges shows that health colleges had slightly higher happiness levels than humanities and science colleges. These findings are similar to another study that was conducted by Mahmoudi et al in Iran 2019 which showed that medical science students have a high level of happiness, this can be explained by that the students in medical fields have a high level of cognitive capacity and intelligence which can enhance the self-esteem thus happiness and also it can be due to the moral aspect of health-related specialties which is helping the others and seeing the difference that can be made to others gives them a sense of pleasure and happiness[16].

This fact is also found from another study conducted in Kurdistan by Moghadam in 2016 which displayed that the high level of happiness among medical sciences students was attributed to the high quality of the facilities, the status of their field study, and the prospects for their careers[20].

The findings of the demographic factors demonstrate that students who have unemployed mothers and enough income showed a significant statistical association with happiness than those who are not. As for the logistic regression, part-time employment mothers and somewhat enough household income are the significant ones. This might be attributed to the reduction of stress, risky behaviors, and negative

Table 4: Association between academic factors and happiness levels (n=771)

Variable		Happiness		Chi-square test
		Above the average (n=398)	Below the average (n=373)	
		Frequency (column%)	Frequency (column%)	
Field of study:	Humanities colleges	132 (33.17)	125 (33.51)	$X^2 = 0.135$ P= 0.9347
	Health colleges	135 (33.92)	122 (32.71)	
	Colleges of Sciences	131 (32.91)	126 (33.78)	
Academic level:	1-2	157 (39.45)	155 (41.55)	$X^2 = 4.237$ P= 0.5158
	3-4	78 (19.60)	80 (21.45)	
	5-6	67 (16.83)	68 (18.23)	
	7-8	85 (21.36)	61 (16.35)	
	9-10	10 (2.51)	9 (2.41)	
	Other	1 (0.25)	-	
GPA:	2- 2.75	-	7 (1.88)	$X^2 = 22.490$ P= 0.0001*
	2.76- 3.74	32 (8.04)	55 (14.75)	
	3.75- 4.49	165 (41.46)	169 (45.31)	
	4.5- 5	201 (50.50)	142 (38.07)	
Causes for choosing the Specialty:	Family pressure	4 (1.01)	11 (2.95)	$X^2 = 48.247$ P= 0.0001*
	My friend	-	3 (0.80)	
	My GPA	79 (19.85)	106 (28.42)	
	Society perception	-	7 (1.88)	
	Other specialties are unavailable	21 (5.28)	49 (13.14)	
	Personal decision	294 (73.87)	196 (52.22)	
	Other	-	1 (0.27)	
Satisfaction with with specialty:	1= Very dissatisfied	11 (2.76)	49 (13.14)	$X^2= 96.753$ P= 0.0001*
	2= Dissatisfied	15 (3.77)	46 (12.33)	
	3= Neutral	80 (20.10)	119 (31.90)	
	4= Satisfied	102 (25.63)	82 (21.98)	
	5= Very satisfied	190 (47.74)	77 (20.64)	
Satisfaction college Environment:	1= Very dissatisfied	12 (3.02)	26 (6.97)	$X^2= 81.970$ P= 0.0001*
	2= Dissatisfied	19 (4.77)	53 (14.21)	
	3= Neutral	104 (26.13)	160 (42.90)	
	4= Satisfied	124 (31.16)	84 (22.52)	
	5= Very satisfied	139 (34.92)	50 (13.40)	
Satisfaction with the faculty members:	1= Very dissatisfied	17 (4.27)	41 (10.99)	$X^2= 35.624$ P= 0.0001*
	2= Dissatisfied	49 (12.31)	66 (17.69)	
	3= Neutral	162 (40.70)	165 (44.24)	
	4= Satisfied	115 (28.89)	83 (22.25)	
	5= Very satisfied	55 (13.82)	18 (4.83)	
Satisfaction with classmates:	1= Very dissatisfied	7 (1.76)	22 (5.90)	$X^2= 82.404$ P= 0.0001*
	2= Dissatisfied	21 (5.28)	32 (8.58)	
	3= Neutral	101 (25.38)	178 (47.72)	
	4= Satisfied	121 (30.40)	90 (24.13)	
	5= Very satisfied	148 (37.19)	51 (13.67)	

Table 5: Univariable and Multivariable Analysis using Logistic Regression

		Univariable Analysis			Multivariable Analysis		
		Unadjusted OR [95% CI]	p-value	Overall p-value	Adjusted OR [95% CI]	p-value	Overall p-value
Mother education	Uneducated	1	-		1	-	
	Primary school	0.356 [0.162 - 0.779]	0.0098*		0.380 [0.144 - 1.002]	0.0506	
	Secondary school	0.334 [0.151 - 0.737]	0.0066*		0.252 [0.093 - 0.681]	0.0066*	
	High school	0.492 [0.240 - 1.009]	0.0531	0.0908	0.404 [0.163 – 1.004]	0.0511	0.09013
	University	0.470 [0.237 - 0.932]	0.0306*		0.304 [0.118 - 0.778]	0.0131*	
	Post-graduate	0.433 [0.172 - 1.089]	0.0755		0.225 [0.066 - 0.768]	0.0173*	
Household income	Enough	0.143 [0.048 - 0.425]	0.0005*		0.112 [0.031 – 0.397]	0.0007*	
	Somehow enough	0.488 [0.356 - 0.669]	0.0001*	<.0001*	0.503 [0.344 - 0.736]	0.0004*	0.00001*
	Not enough	1	-		1	-	
Mother employment	Employed (full-time)	1.140 [0.820 - 1.584]	0.4349		1.243 [0.774 – 1.996]	0.3671	
	Employed (part-time)	2.772 [1.229 - 6.252]	0.0140*		7.334 [2.530 - 21.257]	0.0002*	
	Unemployed	1	-	0.0243*	1	-	0.00013*
	Retired	0.738 [0.420 - 1.298]	0.292		0.670 [0.350 – 1.286]	0.2293	
Family type	Nuclear family	2.25 [1.150 - 4.610]	0.0174*		-	-	
	Extended family	2.365 [1.169 - 4.995]	0.0162*		-	-	
	Stepfamily	0.714 [0.196 - 2.377]	0.5846	0.0105*	-	-	-
	Single parent family	1	-		-	-	
Parents marital status	Married	1.565 [0.710 - 3.490]	0.2669		-	-	
	Divorce parents	1	-		-	-	
	Separated	1.054 [0.592 - 1.878]	0.1856	0.1476	-	-	-
	Widow	0.555 [0.156 - 1.751]	0.3220		-	-	
Number of family members	2 or less	1	-		1	-	
	3-5	6803113.9 [0]	0.9886		10072107 [0]	0.9918	
	6-8	1360275 [0]	0.9881	<.0001*	16890750 [0]	0.9915	0.01580*
	9-11	11883605 [0]	0.9882		15104407 [0]	0.9916	
GPA	Less than 2	-	-		-	-	
	2-2.75	1	-		1	-	
	2.76-3.74	2329809.6 [3.386]	0.0134*		8897746.8 [0]	0.9931	
	3.75-4.49	3909582.5 [3.061]	0.0022*	<.0001*	13174627 [0]	0.9929	0.10048
	4.5-5	5668143.7 [4.438]	0.0005*		13783334 [0]	0.9929	
Causes of choosing the specially	Family pressure	0.848484 [0]	0.1186		1		
	My friend	2.1436 [0]	0.1486		2.261 [0]	0.9953	
	My GPA	1.738 [0.965 - 3.132]	0.0607		0.925 [0.443 - 1.932]	0.8362	
	Society perception	2.1436 [0]	0.0299*		1.7018 [0]	0.9932	
	Other specialties are unavailable	1	-	<.0001*	1	-	0.05641
	Personal decision	3.5 [2.035 - 6.019]	<.0001*		1.206 [0.592 - 2.457]	0.656	
	Other	2.1436 [0]	0.4003		3.4312 [0]	0.9975	
Satisfaction with specialty	Very dissatisfied	1	-		1	-	
	Dissatisfied	1.452 [0.604 - 3.4877]	0.4035		1.394 [0.472 - 4.111]	0.5468	
	Neutral	2.994 [1.468 - 6.107]	0.0026*		1.882 [0.716 - 4.944]	0.1995	
	Satisfied	5.541 [2.708 - 11.334]	<.0001*	<.0001*	3.598 [1.335 - 9.695]	0.0113*	0.00028*
	Very satisfied	10.991[5.428 - 22.256]	<.0001*		4.748 [1.715 - 13.143]	0.0027*	
Satisfaction with the college environment	Very dissatisfied	1	-		1	-	
	Dissatisfied	0.776 [0.328 - 1.838]	0.5655		0.283 [0.089 - 0.903]	0.0331*	
	Neutral	1.408 [0.680 - 2.914]	0.3561		0.564 [0.197 - 1.612]	0.2854	
	Satisfied	3.198 [1.529-6.689]	0.002*	<.0001*	0.602 [0.201 - 1.801]	0.3644	0.02632*
	Very satisfied	6.023 [2.826-12.834]	0.000*		0.880 [0.285 - 2.710]	0.8243	
Satisfaction with the faculty members	Very dissatisfied	1	-		-	-	
	Dissatisfied	1.790 [0.911- 3.518]	0.0910		-	-	
	Neutral	2.367 [1.292 - 4.33]	0.0053*		-	-	
	Satisfied	3.341 [1.776 - 6.286]	0.0002*	<.0001*	-	-	-
	Very satisfied	7.369 [3.390 - 16.019]	<.0001*		-	-	
Satisfaction with classmates	Very dissatisfied	1	-		1	-	
	Dissatisfied	2.062 [0.748 - 5.680]	0.1614		1.191 [0.363 - 3.906]	0.7729	
	Neutral	1.783 [0.736 - 4.320]	0.2001		0.667 [0.223 - 1.993]	0.4691	
	Satisfied	4.225 [1.729 - 10.322]	0.0016	<.0001*	1.167 [0.378 - 3.604]	0.7876	0.00055*
	Very satisfied	9.120 [3.678 - 22.615]	<.0001*		1.925 [0.620 - 5.974]	0.2566	

thoughts by the financial stability as well as spending, more time with their mother can increase communication and strengthen the bonds. Regarding family income, the results can align with another study conducted in Jeddah by Aboalshamat et al in 2018 among dental and medical students showed that those with high family income were happier and more satisfied with their lives[21]. However, concerning mother employment effects on happiness, the current study results are inconsistent with another study conducted in Harvard school by Professor Kathleen McGinn 2018, which suggests that children n of working mothers grow up to be just as happy as children of stay-at-home mothers[22].

Regarding the effects of family status on the level of happiness of university students, the results displayed that, two out of five variables are significant. One of them is family type or structure, slightly higher than two-thirds of the participants who are above the happiness average have a nuclear family type. Similarly, to many other studies, in Thailand, a study conducted by Gray 2013, with a 905 sample size shows that participants who live in nuclear families were the happiest compared to the other family types or structures[15]. It might be due to this family structure being natural and balanced, and characterized with stability and strength, which can be reflected on its members. The second variable is the number of family members or family size, three-fifths of the participants who are above the happiness average have a family size of 6 to 8 members and this association is not only significant but highly significant. Also for this study, the number of family members was a significant predictor of happiness level after applying logistic regression analysis. The findings of this study are similar to the results of previous studies. In 2013 a study conducted by Yiwei shows that the number of household members was a significant predictor of happiness[23]. It can be attributed to the experience alongside having many siblings, it can teach how to get along and accepts diversity, solves difficult situations together, and also have a bigger social network that can last lifelong. But there is an inconsistent study conducted in Iran by Khodarahimi 2011, which shows that the bigger the family gets, the lower life satisfaction and tendency to pay attention to the emotions of the young adults[24].

As for the effects of academic factors on students' level of happiness, most of the academic variables (six out of eight variables) presented in the result section were highly significant. As expected, half of the students who are above the happiness average level have a GPA starting from 4.5 to 5. Similarly, another study conducted among university students in Iran by Tabbodi 2015, found that there is a positive significant correlation between students' happiness and academic performance. A happier student has a higher GPA. This could be attributed to the fact that achieving high grades and getting excellent marks will reflect on the student's happiness status[25]. While the majority of students who are above the happiness average level have chosen their specialty by their own decision. The reason for that could be because students are in the field of the study they have chosen to be in by their own will and as what they desired. As the chi-square test shows that less than three-quarters of students who are above the happiness average level are currently satisfied with their specialty, logistic regression has also shown that satisfied students with their specialty can predict having their level of happiness to be above the average, and this result is significant. This is similar to another study conducted by Han YS and Young M 2015, among nursing students in Korea indicates that there is a significant positive association between students' level of happiness and students' satisfaction about their specialty. These results could be due to most students entering the specialty they have chosen by themselves. Thus, the students are already aware and accepted to study in this field. It also could be due to that after interning the specialty they get to know it better and like it or they will be already by now transferred their specialty to another that they like[26].

In addition, most of the students who are above the happiness average level are satisfied with their classmates, faculty members, and college environment. Same as the results from logistic regression, the overall significance of these variables can successfully predict having a level of happiness above the average except for the satisfaction of faculty members which wasn't significant. This result aligns with another study conducted by (Chan G, Miller PW, and Tcha M) 2005, among students at the university of western Australia that shows that the majority of students are satisfied with the environment of the college. The reason behind that might be the good surrounding environment the best the students will perform, which eventually will affect their level of happiness[27].

CONCLUSION AND LIMITATIONS

In conclusion, the mean level of happiness among all colleges is almost the same. The three domains including; demographic factors, family status, and academic factors, all of them have some variables linked to students' happiness levels, and the academic factors had the most associated factors. From all the domains, only six variables were found to be predictive factors of happiness. This study recommends improving and regulating the environment surrounding the students, and facilities the transferring procedures between the colleges. However, to enhance and maintain the happiness level of students, perform regular screening to identify any changes in students' happiness levels. Further study is needed to investigate other factors that affect the happiness level of students and to provide practical solutions.

There are some limitations and strengths of this study that should be highlighted and taken into consideration. The Inability of using a random sampling procedure was due to the situation of the COVID19 pandemic caused the inability to generalize the results which remains only applicable to students of Princess Nourah Bint Abdulrahman University. However, it was enhanced by the quota sampling technique as well as retching the maximum sample size, and the reliability of the questionnaire was considered high.

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