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A gender study on college students' self-efficacy in health care behavior

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Abstract: The purpose of the present gender study is to compare college students' self-efficacy profiles in health care behavior. The overall sample consisted of 1,995 subjects: 862 women and 1,133 men. All subjects were freshman students enrolled in The Autonomous University of Chihuahua. The average age was 18.18 years ($SD=0.68$). A quantitative methodology aided in the survey-like descriptive design. The self-efficacy perception differences found between men and women suggest that any kind of action aimed at improving perceived self-efficacy must take gender into consideration. Further research should seek these findings in larger samples.

Keywords: Student's Beliefs, Gender Differences, Higher Education, Academic Performance, Student's Characteristics

1. Introduction

Everybody sets specific goals, and it is through self-motivation that man assumes specific behavior to achieve such objectives. However, it is neither enough to clearly know where one is headed towards nor to have the necessary means to succeed. Moreover, it is not enough to be able to reach such aim, for one must be aware of one's personal skills in the face of quite diverse circumstances [1]. The individual's perception of his/her own self-efficacy is a fundamental requirement to successfully achieve personal goals [2]. Such self-perception, known as self-efficacy, deeply influences the choice of tasks and activities, and the effort and perseverance when facing specific challenges, including emotional reactions to difficult situations. As a result, self-efficacy beliefs are a cognitive mechanism bridging knowledge and action, which, together with other variables, determines the individual's success based on his/her own doing [3].

Based on Bandura's Theory of Social Learning, it is assumed that self-efficacy expectations are an important intention and action predictor under diverse circumstances. A high level of self-efficacy acts as a cushioning lining increasing motivation and decreasing emotional distress, thus enhancing healthy behavior in body care. In fact,

self-efficacy has consistently outstood as a key factor to motivate adoption of health-promoting behavior and deter harmful conduct [4].

The individual's perception of his/her own self-efficacy plays a key role in human performance since it affects behavior directly as well as through its impact on aims, aspirations, expected outcomes, affective trends, and obstacle-and-opportunity notions in the social environment [5]. Beliefs on self-efficacy influence people's thoughts, course of action, challenges and goals, and commitment; moreover, these beliefs also determine the effort invested in specific tasks, expected outcomes based on such efforts, perseverance against obstacles, resistance against adverse situations, stress and depression levels experienced under challenging environmental demands and the aims achieved [6].

The present gender study is a description comparing and contrasting Mexican college students' self-efficacy profiles in health-care behavior. The purpose of this study is to provide evidence and data to foster educational intervention focusing on a diversity perspective.

2. Method

2.1. Participants

The sample consists of 1,995 Autonomous University of Chihuahua undergraduate students, 862 women and 1,133 men. Convenience sampling was used to represent the various undergraduate programs at the university (Table 1). Subject age ranges between 17 to 20 years, with a mean of 18.18 (SD 0.68).

Table 1. Subject distribution according to academic field and gender.

Academic Field	Gender		Total
	Female	Male	
Physical Education	81	209	290
Education and Liberal Arts	94	70	164
Health Sciences	116	105	221
Administration and Social Sciences	170	118	288
Political Sciences	194	85	279
Engineering and Technology	131	425	556
Farming Sciences	76	121	197
Total	862	1133	1995

2.2. Instrument

The Escala Autoeficacia en Conductas de Cuidado de la Salud (EACCS), (Health-Care Behavior Self-efficacy Scale) was used. This is a computer-assisted, Likert-type survey including 8 health-care behavior items (nutrition, physical health, hydration, and alcohol and tobacco consumption). The subject responded on the basis of actual performance, using a 0-10 scale, according to current frequency and ideal behavior if change is pursued. Later, based on the subjects' responses, 5 indexes were obtained:

1. Perceived self-efficacy, based on the current scenario.
2. Desired self-efficacy, based on an ideal scenario.
3. Reachable self-efficacy, based on a change scenario.
4. Self-efficacy dissatisfaction or dissonance, based on the difference between indexes 2 and 1 (desired minus perceived).
5. Possibility for improving perceived self-efficacy, based on the difference between Indexes 3 and 1 (reachable minus perceived).

The structure of four factor: nutrition, physical health, hydration and alcohol and tobacco consumption (table 2) for this scale, and based on the statistical and substantial criteria, proved adequate adjustment, reliability, and validity indicators [7].

Table 2. Items of the Health-Care Behavior Self-efficacy Scale.

Factor	Item
nutrition	4 I have set hours for my meals
	2 I take three meals per day
physical health	1 I take good care of physically
	3 I perform physical exercise during...
hydration	5 I drink more than 6 glasses of water per day
	6 I eat 2 or more pieces of fruit a day
alcohol and tobacco consumption	8 I drink alcoholic beverages
	7 I smoke tobacco

2.3. Design and Variables

A quantitative approach with a descriptive and transversal survey design was used [8]. The independent variable was gender (male and female), and the dependent variables were the mean scores on the five Self-efficacy indexes of the subscales nutrition, physical health, hydration, and items tobacco and alcohol consumption.

2.4. Procedure

All freshman university students from each undergraduate program at the Autonomous University of Chihuahua were invited to participate in the present study. These university students were fully informed about all the features of the project. Then, all the students who had agreed to participate were asked to sign a written informed consent. After the students' approvals were obtained, participants completed the above mentioned questionnaire by means of the instrument module administrator of the Scales Editor Version 2.0 [9].

During a class meeting session, participants completed the questionnaire in the computer labs in their schools. At the beginning of the session, the researchers gave a general introduction about the importance of the research and how to access the questionnaire through the software. When the participants were in the editor, the instructions about how to fill out the questionnaire correctly appeared before the instrument. Additionally, the participants were advised to ask for help if confused concerning either the instructions or the clarity of a particular item. Completion of the entire questionnaire took approximately 15 minutes. At the end of the session their participation was welcomed. Afterwards, when all the participants had completed the questionnaire, the data was collected by means of the Scales Editor Version 2.0 results generator module [9].

2.5. Data Analysis

Descriptive statistics (mean and standard deviations) for all the variables were calculated. Subsequently, after verifying that the data met the assumptions of parametric statistical analyses, a one-way multivariate analysis of variance (MANOVA) followed by the one-way univariate analysis of variance (ANOVA) were used to examine the differences between men and women in the reported self-efficacy in nutrition, physical health, hydration and tobacco and alcohol consumption scores. Moreover, the effect size was estimated using the eta-squared (η^2). All statistical analyses were performed using the SPSS version 20.0 for Windows (IBM® SPSS® Statistics 20). The statistical significance level was set at $p < .05$.

3. Results

3.1. Nutrition Factor

Table 3 shows mean and standard deviation values for the nutrition factor self-efficacy. In addition, Table 2 also introduces MANOVA and ANOVAs results. MANOVA

findings indicate significant global differences according to gender scores on the nutrition factor self-efficacy (Wilks' $\lambda = .982$; $p < .001$; $\eta^2 = .018$). Furthermore, ANOVAs results show higher perceived self-efficacy in male subjects ($F1 = 27.181$, $p < .001$), as well as lower nutrition factor

dissatisfaction than female subjects ($F1 = 33.820$, $p < .001$); however, male subject results presented lower possibility for improving their perceived self-efficacy than females ($F1 = 31.018$, $p < .001$). In the desirable and reachable self-efficacy indexes, there were no significant differences ($p > .05$).

Table 3. MANOVA results for gender differences in the five self-efficacy indexes for the nutrition factor.

	Women(n = 862)	Men(n = 1133)	F	p	η^2
Perceived self-efficacy	6.19 (2.71)	6.80 (2.49)	11.981	< .001	.018
Desired self-efficacy	8.76 (1.63)	8.78 (1.67)	27.181	< .001	.013
Reachable self-efficacy	8.78 (1.59)	8.88 (1.59)	0.119	.730	.000
Dissatisfaction or dissonance in self-efficacy	2.56 (2.33)	1.98 (2.14)	1.790	.181	.000
Possibility for improving perceived self-efficacy	2.59 (2.14)	2.08 (1.96)	33.820	< .001	.017
			31.018	< .001	.015

Note. Descriptive values are reported as mean (standard deviation)

3.2. Physical Health Factor

Table 4 shows the mean and standard deviation values on the physical health factor self-efficacy, as well as the MANOVA and ANOVAs results. MANOVA findings indicate significant global gender differences in the physical health factor self-efficacy (Wilks' $\lambda = .950$; $p < .001$; $\eta^2 = .050$). ANOVAs results show male higher perceived self-efficacy ($F1 = 98.097$, $p < .001$), desired self-efficacy ($F1 = 7.025$, p

< .01), and reachable self-efficacy ($F1 = 19.100$, $p < .001$). In addition, male subjects demonstrate lower dissatisfaction in the physical health factor than female participants ($F1 = 94.581$, $p < .001$); even though, there is a male score of lower possibility for improving their perceived self-efficacy ($F1 = 89.809$, $p < .001$) than the ($F1 = 89.809$, $p < .001$) outcome reported for women.

Table 4. MANOVA results for gender differences in the five self-efficacy indexes for the physical health factor.

	Women(n = 862)	Men(n = 1133)	F	p	η^2
Perceived self-efficacy	6.32 (2.50)	7.40 (2.33)	34.944	< .001	.050
Desired self-efficacy	9.07 (1.33)	9.22 (1.26)	98.097	< .001	.047
Reachable self-efficacy	9.08 (1.25)	9.31 (1.13)	7.025	< .01	.004
Dissatisfaction or dissonance in self-efficacy	2.74 (2.26)	1.82 (1.96)	19.100	< .001	.009
Possibility for improving perceived self-efficacy	2.75 (2.07)	1.91 (1.87)	94.581	< .001	.045
			89.809	< .001	.043

Note. Descriptive values are reported as mean (standard deviation)

3.3. Hydration Factor

Table 5 portrays the mean and standard deviation values for the hydration factor as well as the MANOVA and ANOVAs findings. MANOVA results show significant global gender differences in the hydration factor self-efficacy (Wilks' $\lambda = .994$; $p < .01$; $\eta^2 = .006$). ANOVAs findings indicate lower male desired self-efficacy ($F1 = 5.075$, $p < .05$) and lower

hydration factor dissatisfaction ($F1 = 9.614$, $p < .01$) than women; nevertheless, results also show male subjects lower possibility for improving their perceived self-efficacy ($F1 = 4.851$, $p < .05$) than female participants. There were no significant differences in the perceived as well as reachable self-efficacy indexes ($p > .05$).

Table 5. MANOVA results for gender differences in the five self-efficacy indexes for the hydration factor.

	Women(n = 862)	Men(n = 1133)	F	p	η^2
Perceived self-efficacy	5.85 (2.48)	5.99 (2.32)	3.954	< .01	.006
Desired self-efficacy	8.70 (1.63)	8.53 (1.69)	1.660	.198	.000
Reachable self-efficacy	8.85 (1.49)	8.79 (1.47)	5.075	< .05	.003
Dissatisfaction or dissonance in self-efficacy	2.85 (2.34)	2.54 (2.09)	0.921	.337	.000
Possibility for improving perceived self-efficacy	3.00 (2.11)	2.88 (2.05)	9.614	< .01	.005
			4.851	< .05	.002

Note. Descriptive values are reported as mean (standard deviation)

3.4. Tobacco Consumption

Table 6 presents the mean and standard deviation values for the tobacco consumption avoidance factor self-efficacy and the MANOVA and ANOVAs findings. MANOVA results indicate significant global gender differences in the tobacco

consumption avoidance factor self-efficacy (Wilks' $\lambda = .993$; $p < .01$; $\eta^2 = .007$). Furthermore, ANOVAs findings show male lower perceived ($F1 = 10.991$, $p < .001$), desired ($F1 = 5.392$, $p < .05$), and reachable ($F1 = 8.749$, $p < .01$) self-efficacy, as well as higher dissatisfaction in the tobacco consumption avoidance item than female subjects ($F1 = 6.136$,

$p < .05$). No significant differences were found in the possibility for improving perceived self-efficacy ($p > .05$).

Table 6. MANOVA results for gender differences in the five self-efficacy indexes for tobacco consumption.

	Women(n = 862)	Men(n = 1133)	F	p	η^2
Perceived self-efficacy	8.29 (3.15)	7.80 (3.40)	4.531	< .01	.007
Desired self-efficacy	9.32 (2.10)	8.99 (2.42)	10.991	< .001	.005
Reachable self-efficacy	9.35 (1.99)	9.05 (2.44)	5.392	< .05	.003
Dissatisfaction or dissonance in self-efficacy	0.936 (2.15)	1.19 (2.34)	8.749	< .01	.004
Possibility for improving perceived self-efficacy	1.06 (2.31)	1.25 (2.41)	6.136	< .05	.003
			3.205	.074	.002

Note. Descriptive values are reported as mean (standard deviation)

3.5. Alcohol Consumption

Table 7 shows the mean and standard deviation, MANOVA and ANOVAs values for alcohol consumption avoidance self-efficacy. MANOVA results show significant global gender differences on alcohol consumption avoidance self-efficacy scores (Wilks' $\lambda = .967$; $p = < .001$; $\eta^2 = .033$). ANOVAs findings indicate lower male perceived (F1 =

64.994, $p < .001$), desired (F1 = 51.282, $p < .001$), and reachable (F1 = 39.381, $p < .001$) self-efficacy. Moreover, male subjects also show higher dissatisfaction in alcohol consumption avoidance than women (F1 = 8.192, $p < .01$); however, males have a higher possibility for improving perceived self-efficacy than female participants (F1 = 13.176, $p < .001$).

Table 7. MANOVA results for gender differences in the five self-efficacy indexes for alcohol consumption.

	Women(n = 862)	Men(n = 1133)	F	p	η^2
Perceived self-efficacy	7.05 (2.74)	6.02 (2.91)	22.520	< .001	.033
Desired self-efficacy	8.28 (2.21)	7.48 (2.61)	64.994	< .001	.032
Reachable self-efficacy	8.58 (2.12)	7.90 (2.59)	51.282	< .001	.025
Dissatisfaction or dissonance in self-efficacy	1.22 (1.76)	1.46 (1.96)	39.381	< .001	.019
Possibility for improving perceived self-efficacy	1.52 (2.01)	1.73 (2.16)	8.192	< .01	.004
			13.176	< .001	.007

Note. Descriptive values are reported as mean (standard deviation)

4. Discussion and Conclusions

According to researched health care behavior, results indicate that in the physical health factor (taking good care of one's body, exercising on a regular basis, at least 30 minutes, thrice a week), men, compared to women, see themselves as more self-efficient, with a higher need and possibility of improving their self-efficacy, while experiencing lower dissatisfaction and dissonance in the physical health aspect. Nevertheless, it is women who perceive themselves as more self-efficient at and less dissatisfied with avoiding tobacco and alcohol consumption. The outcome of the present study agrees with Blanco's [10] similar research on the gender differences on health care self-efficacy perception.

Moreover, in the past few years, the theoretical framework on male and female self-efficacy perception has been laid down through coherent ground concepts. Being one such cornerstone Bandura's Social Cognitive Theory [11], which defines self-efficacy expectations as one of the main gender variables, setting differences on decision-making. Such differences are the result of socialization, since it provides men and women with a differentiated gender-biased perception of tasks, activities, and occupations. Therefore, according to the outcome of the present study, and along the lines of the aforementioned theory, improvement of one's capability perception is an important educational goal with positive side effects on the individual's self-esteem and

personal growth.

Finally, the differences of perceived self-efficacy between men and women suggest that the gender variable must be taken into consideration as part of any contribution aimed at improving perceived self-efficacy. Besides, this study points out the relevance and need of further research on the topic in México, since almost all other studies on perceived self-efficacy have been pursued in other countries.

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