

# Locus of Control - A Dental Student Perspective

Othman Wali<sup>1</sup>, Shanthi Vanka<sup>2</sup>, Amit Vanka<sup>3</sup>, Nouf Alamoudi<sup>4</sup>

<sup>1, 2, 3, 4</sup> Dentistry Program, Ibn Sina National College for Medical Studies, Jeddah, Saudi Arabia.

## ABSTRACT

### BACKGROUND

Students from various backgrounds and places join graduation courses in Dentistry. The environmental influence on them is varied. Academic self-concept also has been found to be a significant predictor of students' academic achievement in the college resulting in an increase in the grade point average of the students. This study was conducted to examine the relationship between the student and their academic relationship to the environment in the dental school which is the internal and external locus of control.

### METHODS

This is a cross-sectional study. The method of collection of data is through a questionnaire. The questionnaire had details related to the demographic data of gender and year of study in the dental school. Questions on locus of control have been adapted from the Rotter's Locus of Control Scale. Statistical analysis was conducted using IBM SPSS version 23. Chi square test was used to test the associations between the variables and a value of  $< 0.05$  was considered statistically significant.

### RESULTS

402 participants including students from 2<sup>nd</sup> year to internship filled the survey questionnaire. In general, majority of the participants displayed a higher external locus of control.

### CONCLUSIONS

The study participants who responded showed more external locus of control compared to the internal locus of control. Strategies should be planned and tailored to improve student support and student education. They should include a very comprehensive orientation to the students including both long term and short-term objectives.

### KEY WORDS

External Locus of Control, Internal Locus of Control, Cross Sectional Study

*Corresponding Author:*

*Dr. Shanthi Vanka,  
Ibn Sina National College for  
Medical Studies, Jeddah,  
Saudi Arabia.  
E-mail: shanthiamit@rediffmail.com*

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## BACKGROUND

Students from various backgrounds and places join graduation courses in dentistry. The environmental influence on them is varied. It details about the various dimensions that are present in a personality which will help in explanation of their behaviour.<sup>1,2</sup> Evidence related to locus of control supports that it is related to the academic environment of the students.<sup>3</sup> The locus of control is about how much control he or she has over events in his or her life.<sup>4,5</sup> Locus of control is about the person's perception about the causes of success or failure in his / her life.<sup>5,6</sup> When individuals believe that their success and failure are due to factors within their control, they are viewed as having an internal locus of control. If individuals most often believe their successes and failures are due to something outside of their control they are regarded as having an external locus of control. Locus of control is explained to be any person's tendency to being controlled either internally or externally. Many studies have concluded that locus of control or person's belief are about how much control he or she has over events in his or her life.<sup>5,7</sup> It is very essential for us to assess the students inclination towards external or internal locus of control to plan strategies to improve the academic self-concept of students to be successful in and outside a dental college.<sup>8</sup> Academic self-concept also has been found to be a significant predictor of students' academic achievement in the college resulting in an increase in the grade point average of the students. People with internal locus of control get influenced majorly by the outcomes of the workplace on the contrary people with external locus of control understand that the outcomes may be due to external stimuli and forces like luck, chance and fate.<sup>9,10,11</sup>

There was a hypothesis for the study determined (alternative hypothesis)

1. Hypothesis 1: There will be a significant difference between the external and internal locus of control and the year of study of the students
2. Hypothesis 2: There will be a significant difference between the external and internal locus of control and the gender of the students

This study was conducted to examine the relationship between the students and their academics to the environment in the dental school which is the internal and external locus of control.

## METHODS

This is an analytical cross-sectional study. The method of collection of data was through a questionnaire. The questionnaire had the details related to the demographic data of gender and year of study in the dental school. The questions on locus of control have been adapted from the Rotter's Locus of Control Scale. The questionnaire has been modified as per the student's responses in the dental school after pilot testing the questionnaire on a sample of students. The final questionnaire has 27 questions with two options each. The student has to choose the best one option from the choices

given to them. The two options were coded as A and B. The analysis of the results is taken as external locus of control if A score is high compared to the B option and internal locus of control if A score is low compared to the B option.<sup>12</sup>

The questions included details about the following points:

1. Reason for the students getting into trouble
2. Result of the unhappy things in students' lives
3. Politics
4. Respect given to the students
5. Teachers being unfair
6. Leadership quality
7. Getting along with others
8. Relationship between heredity and one's personality
9. Students trust in fate
10. Results of exams
11. Hard work and success
12. Planning
13. Person's character
14. Luck
15. Ability to be lucky
16. Accidental happenings
17. Willingness to accept mistakes
18. Nice character of the students
19. Misfortunes
20. Politics in dental office
21. Grading by the teachers
22. Good leader
23. Influence over the things happening around the students
24. Lonely feeling
25. Athletics in the dental school
26. Control over life
27. Behaviour of politicians

The reliability of the questionnaire was assessed using Cronbach alpha and after determining the test value was 0.85. The questionnaire was distributed to the students during their free time and sufficient time was given to them to fill the questionnaire. The hard copy of the questionnaire was distributed to the students and a written consent was taken from them before they filled the questionnaire. The inclusion criteria of the study was all the students who gave a consent to participate in the study. The exclusion criteria for the study was all the students who did not agree to participate in the study and those who were not present on the day the questionnaire was distributed.

Ethical approval was taken from the Ethical Committee of Ibn Sina National College for Medical studies. All the students of Ibn Sina National College; Dentistry program available on the day of distributing the questionnaire were included in the study.

### Statistical Analysis

The statistical analysis was conducted using IBM SPSS version 23. Frequencies and percentages were calculated for the dependant and independent variables. Chi square test was used to test the associations between the dependant and the independent variables. Probability value of < 0.05 was considered statistically significant for the study. The power of the study was determined to be 80 %.

**RESULTS**

The participants of the survey questionnaire were 402 which included the students from 2<sup>nd</sup> year to internship. The responses included: 2<sup>nd</sup> year students 61 (15.2 %), 3<sup>rd</sup> year students 58 (14.4 %), 4<sup>th</sup> year students 70 (17.4 %), 5<sup>th</sup> year students 95 (23.6 %), 6<sup>th</sup> year students 44 (10.9 %) and internship students 74 (18.4 %). The details of the year of the study of the students versus the external and internal locus of control is been detailed in the table 1. There were 232 (57.7 %) students who responded to have external locus of control with 33 (8.2 %) second year students, 31 (7.7 %) third year students, 49 (12.2 %) fourth year students, 56 (13.9 %) fifth year students, 19 (4.7 %) sixth year students and 44 (10.9 %) interns. And there were 170 (42.3 %) students who responded to have internal locus of control with 28 (7 %) second year students, 27 (6.7 %) third year students, 21 (5.2 %) fourth year students, 39 (9.7 %) fifth year students, 25 (6.2 %) sixth year students and 30 (7.5 %) interns.

Overall general majority of the participants displayed a higher external locus of control compared to the internal locus of control. Table 2 revealed the responses of the gender versus external and internal locus of control. Table 2 describes that the female participants are 299 (74.4 %) and male participants are 103 (25.6 %). External locus of control was seen among 175 (43.5 %) females as compared to 57 (14.2 %) males. Comparing the locus of control of both the year of study and gender did not reveal a significant difference. The hypothesis for the study determined (alternative hypothesis) was rejected.

Year of Study	External Locus of Control	Internal Locus of Control	Total
2 <sup>nd</sup> year	33	28	61
	54.1 %	45.9 %	100.0 %
% of total	8.2 %	7.0 %	15.2 %
3 <sup>rd</sup> year	31	27	58
	53.4 %	46.6 %	100.0 %
% of total	7.7 %	6.7 %	14.4 %
4 <sup>th</sup> year	49	21	70
	70.0 %	30.0 %	100.0 %
% of total	12.2 %	5.2 %	17.4 %
5 <sup>th</sup> year	56	39	95
	58.9 %	41.1 %	100.0 %
% of total	13.9 %	9.7 %	23.6 %
6 <sup>th</sup> year	19	25	44
	43.2 %	56.8 %	100.0 %
% of total	4.7 %	6.2 %	10.9 %
Internship	44	30	74
	59.5 %	40.5 %	100.0 %
% of total	10.9 %	7.5 %	18.4 %
<b>Total</b>	<b>232</b>	<b>170</b>	<b>402</b>
	57.7 %	42.3 %	100.0 %
% of total	57.7 %	42.3 %	100.0 %

**Table 1. Year of the Study of the Students versus External and Internal Locus of Control**

Year of Study	External Locus of Control	Internal Locus of Control	Total
Male	57	46	103
	55.3 %	44.7 %	100.0 %
% of total	14.2 %	11.4 %	25.6 %
Female	175	124	299
	58.5 %	41.5 %	100.0 %
% of total	43.5 %	30.8 %	74.4 %
<b>Total</b>	<b>232</b>	<b>170</b>	<b>402</b>
	57.7 %	42.3 %	100.0 %
% of total	57.7 %	42.3 %	100.0 %

**Table 2. Gender of the Students versus External and Internal Locus of Control**

**DISCUSSION**

The study is aimed to assess the association between locus of control of dental students and the relationship to their academic environment. A questionnaire was administered to obtain students demographic details and locus of control assessment.

Rotter internal and external locus of control scale was used to assess students' perception. Internals have more control of the environment and tend to handle stress differently than externals.<sup>13</sup> This study helps to focus on the framework of inquiry that has been long neglected in economic education as in the study by Ahmed A Kader.<sup>13</sup> The importance of this study is that it helps to quantify the attributes in student motivation and academic achievement.

The results of the current study have shown an indication towards external locus of control. Externals worry more about the expected outcome. The study results are in line with the study by Fredric Linder which shows there was no statistical significance between demographic variables and locus of control which is similar to our study.<sup>14</sup>

Externals respond to stress emotionally and withdraw from stressful situations as compared to the internals who are more adaptive to stress and attempt to reduce it through problem solving strategies.<sup>15,16</sup> The students who show internal locus of control pursue deep learning strategies as compared to the students showing external locus of control. This is also reflected with respect to the terms of learning material and learning outcomes.<sup>13</sup> The present study did not present with any findings showing a statistical difference between males and females responses which is in line with a study conducted in Gulbarga city by Naik AR.<sup>18</sup> Studies by Meghan M<sup>19</sup>, Stocks<sup>20</sup> and Clarke<sup>21</sup> also supports the same findings as our study that there is no statistical significance between demographic variable gender and locus of control. The reason that may be attributed for lack of any statistical difference could be due to the attitudes of the students which is the same and shows no change with the gender.

This study focuses on the influence of locus of control on the achievement goals of the students. Locus of control is associated with a fear of failure among the students.<sup>17</sup> The belief of locus of control may be characterized as the two sides of a coin with one side showing the features of external locus of control and the other side depicting the internal locus of control. Locus of control and stress are important determinants of student achievement. There are strategies to be developed to overcome stress of the students about the outcomes of learning and future of life so as to breach the gaps in economic education. Students' academic self-concept also plays a very important role in his or her success in school. It also is a very important predictor of students' academic achievement.<sup>10</sup> There should be many coping mechanisms utilized by the students to overcome stress. The coping mechanism of the students to reduce stress and improve academic self-concept may be possible if they will have clarity in goals through increased focus on improving knowledge and skills in the field of dentistry. There is a need for a comprehensive orientation program planned for the students including the various factors that can help in controlling stress as majority of them responded to having external locus of

control which is an indication towards not adapting to stressful situations. Faculty should provide continuous support to all the students specially during the education years where they will be attending dental clinics and working on patients. Students should be made aware of the importance of the various stress mechanisms to shift them from externals to internals.

Locus of control is an expression of a very qualitative measurement of an individual's perception on the various outcomes of their life. Further research should examine factors that are associated with locus of control associated to the academic grades of the students. Grades of the students might help in understanding the gap that may exist between the actual and the perceived outcomes of the students. Research may be replicated among many institutions to ensure generalizability of the study to a larger sample of students.

### CONCLUSIONS

The study participants who responded showed more external locus of control compared to the internal locus of control. Strategies should be planned and tailored to improve student support and student education. They should include a very comprehensive orientation to the students including both long term and short term objectives.

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