Original Article

Self-regulation Perceptions of Dental Students

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ABSTRACT

Objective: Self-regulation refers to individuals' capacity to govern and oversee their thoughts and actions, enabling them to adjust and react suitably to various things. This skill is important to be a lifelong learner. Dentistry is one profession where self-regulation can differentiate one from being called a "five-star doctor." This study aims to evaluate the perceptions of self-regulation of students in a Philippine dental university.

Material and Methods: The research employed a descriptive cross-sectional research design using survey questionnaires. The Self-Regulation Formative Questionnaire (SRFQ) by Gaumer Erikson & Noonan (2018) consists of 22 items with four components: plan (5 items), monitor (6 items), control (6 items), and reflect (5 items). Participants' responses were evaluated using a 5-point Likert scale. Twenty dental students from the same university were selected to answer the questionnaire as a pilot test. Subsequently, the questionnaire's reliability was assessed, yielding a Cronbach's coefficient alpha value of 0.918.

Results: A total of 338 dental students (18% response rate) across the different year levels answered. Plan (75%) had the lowest percentage among the four components, and Reflect (82%) had the highest percentage. Overall, the students had good self-regulation (78.5%).

Conclusions: Dental students at the university have good self-regulation perceptions. Future studies can look into increasing the sample size and having respondents from other dental universities. Semi-structured interviews can also be done to understand the students' responses better. Likewise, promoting self-regulation among students should be emphasized.

Keywords: Self-regulation, SRFQ, Perception, Dental students

INTRODUCTION

Becoming a dentist takes several years of training. Providing quality and efficient care separates a good dentist from a great dentist. To prioritize high-quality services, a dentist should prioritize a pain-free experience rather than solely focusing on placing a successful dental restoration. Regarding quality care, one of the requisites of being a healthcare provider is to possess the traits of a "five-star doctor."[1]

The World Health Organization's envisioned concept of a "five-star doctor" presents an archetype of a medical professional who possesses a blend of competencies necessary to fulfill a spectrum of healthcare services. These services are designed to address the criteria of significance, excellence, cost-efficiency, and fairness in healthcare provision. To align with the core principles, an individual should possess the following attributes that collectively define the image of a "five-star doctor,"

which are care provider, evaluator, communicator, community influencer, and administrator. To acquire these traits, the dental professional must develop the skill of self-regulation.[2]

Self-regulation refers to a learner's view of their capacity to undertake suitable actions, thoughts, emotions, and conduct to attain significant academic objectives. This involves self-monitoring and introspection regarding their advancement toward accomplishing these goals.[3] The process of self-regulation encompasses four key stages: formulating a plan, overseeing its execution, making adjustments to remain aligned with the plan, and contemplating the procedure and results. Planning lets an individual consider the activities required to achieve the desired outcome. Monitoring is carrying out the strategies established during the planning phase. Controlling is the ability to regulate and alter responses to achieve goals. Reflecting is observing one's thoughts, perceptions, actions, and achievements. Developing the four key stages of self-regulation can be exercised and honed by the individual's environment. This development can start during the dental students' academic years and can be enhanced further through the activities done. Thus, this study aims to answer the question, "What are the self-regulation perceptions of dental students?"

MATERIAL AND METHODS

The research employed a descriptive cross-sectional research design using survey questionnaires. The Self-Regulation Formative Questionnaire (SRFQ) by Gaumer Erikson & Noonan (2018) consists of 22 items with four components: plan (5 items), monitor (6 items), control (6 items), and reflect (5 items). Sample items include: "If an important test is coming up, I create a study plan" (Plan), "I track my progress for reaching my goal" (Monitor), "As soon as I see that things are not going right, I want to do something about it" (Control), and "When I fail at something, I try to learn from my mistakes" (Reflect).[3] Participants' responses were evaluated using a 5-point Likert scale.

Study design

Twenty dental students from the same university were selected to answer the questionnaire as a pilot test. A pilot test was done to confirm the clarity and readability of the questions because it was placed in Google Forms. Subsequently, the questionnaire's reliability was assessed, yielding a Cronbach's coefficient alpha value of 0.918. Upon receiving feedback from the pilot group, the order of the questions was modified because it confused the respondents in answering the reversed Likert scale. Thus, the statements with similar Likert scales were grouped. Item numbers 1-17 were scored from 1 – Not very like me, 2 – Unlikely, 3 – Neutral, 4 – Likely, to 5 – Very like me. Item numbers 18-22 were scored from 1 – Very like me, 2 – Likely, 3 – Neutral, 4 – Unlikely, to 5 – Not very like

me. Since the study was not profit-bearing in nature, written permission from the authors of the questionnaire was not deemed necessary.[3]

The questionnaire was encoded on Google Forms, and the link was disseminated through the official social networks, i.e., Facebook group messengers formed by the Dentistry Student Council of each year level. All participants were provided comprehensive details regarding the study's aims and willingly agreed to participate by responding to the survey without revealing their identities. This was carried out by the provisions outlined in the Philippine Data Privacy Act of 2012 (Republic Act 10173). No time limit was established to complete the survey. To avoid repeating answers from the same respondents, the university email address of each respondent was used. The scores were computed using the total mean scores, considering that item numbers 18-22 had to be reverse coded. Subsequently, the proportions for the four components were calculated and analyzed using the four overall ranges: 22-40% denoting poor, 41-60% indicating average, 61-80% representing good, and 81-100% signifying excellent.

RESULTS

A total of 338 dental students (18% response rate) responded. Table 1 shows the distribution of the students according to year level.

The highest mean score was under the component Reflect (excellent self-regulation). The lowest mean score was under the component Plan (good self-regulation). Overall, the self-regulation of the dental students was interpreted as good. Out of the four components of self-regulation, the Plan component attained the least score. Table 2 shows the total mean score, percentage, and interpretation of the components of self-regulation.

Table 1: Number of respondents according to year level.

Year level	Respondents
First	43
Second	37
Third	63
Fourth	195
Total	**338**

Table 2: Total mean score, percentage, and interpretation of the components of self-regulation.

Components	Total Mean Score	Percentage	Interpretation
Plan	18.72	75%	Good
Monitor	23.41	78%	Good
Control	23.57	79%	Good
Reflect	20.62	82%	Excellent
Overall	86.32	78.5%	Good

DISCUSSION

The highest mean score was under the component Reflect (excellent self-regulation). The lowest mean score was under the component Plan (good self-regulation). Overall, the self-regulation of the dental students was interpreted as good. This overall mean score is higher than scores recorded by earlier studies by Jouhari (2015) and Siddiqui (2019). One explanation for this might be that those who answered the questionnaire are the ones who are good at using self-regulation as a skill.[4,5]

Out of the four components of self-regulation, the Plan component attained the least score. Similarly, this lack of planning is seen in other studies.[6-8] One might wonder how dental students who are excellent in Reflect and only good in Plan, Monitor, and Control. The Kruger-Dunning effect can explain this phenomenon, in which students with lower performance levels tend to oversee their learning progress infrequently. As a result, they are less likely to recognize their subpar performance when compared to students with average performance.[5,9] Students are aware of the deficiencies in their performance but lack execution while monitoring their performance, affecting their ability to plan.[10]

In a qualitative study by Jouhari (2015), it was mentioned that the factors affecting self-regulation encompass family, peers, educators, the learning environment, and the physiological attributes of the students.[4] Emotional support from the family, peers who provide motivation and educational support, effective teaching methods and instructors' high self-regulation, a learning environment that encourages student participation, and highly motivated characteristics of students can facilitate self-regulation.

This study has a few limitations that should be considered. The small sample size could have resulted in a response bias. Students who struggle with self-regulation might have opted not to respond to the survey due to their deficiency in effective planning. This cross-sectional study provided only a picture of the self-regulation perceptions of the students at a specific point in time. Longitudinal studies can be considered in the future.

CONCLUSION

Dental students at the university have good self-regulation perceptions. Future studies can look into increasing the sample size and having respondents from other dental universities. Semi-structured interviews can also be done to better understand the students' responses. Likewise, promoting self-regulation among students should be emphasized.

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REFERENCES

1. Boelen C. Frontline doctors of tomorrow. World Health 1994;47:4–5.
2. Bowman M. The transition to self-regulated learning for first-year dental students: Threshold concepts. Eur J Dent Educ 2017;21:142–50.
3. Gaumer Erickson AS, Noonan PM. The skills that matter: Teaching interpersonal and intrapersonal competencies in any classroom. Thousand Oaks, CA: Corwin, 2018. p. 177–8.
4. Jouhari Z, Haghani F, Changiz T. Factors affecting self-regulated learning in medical students: a qualitative study. Med Educ Online 2015;20:28694.
5. Siddiqui F, Malik AA. Promoting self-regulated learning skills in medical students the need of time. J Taibah Univ Med Sci 2019;14: 277–81.
6. Brydges R, Manzone J, Shanks D, Hatala R, Hamstra SJ, Zendejas B, *et al*. Self-regulated learning in simulation-based training: a systematic review and meta-analysis. Med Educ 2015;49: 368–78.
7. Thomas L, Bennett S, Lockyer L. Using concept maps and goal-setting to support the development of self-regulated learning in a problem-based learning curriculum. Med Teach 2016;38:930–35.
8. Holden ACL. Self-regulation in dentistry and the social contract. Br Dent J 2016;221:449–51.
9. Kruger J, Dunning D. Unskilled and unaware of it: how difficulties in recognizing one's own incompetence lead to inflated self-assessments. J Pers Soc Psychol 1999;77: 1121–34.
10. Eilam B, Aharon I. Students' planning in the process of self-regulated learning. Contemp Educ Psychol 2003;28: 304–34.