

Factors Associated with Hidden Curriculum Perceptions in Nursing Education: A Cross-Sectional Study

Abstract

Background: The hidden curriculum refers to unintentional learning outcomes that occur during the educational process. Identifying its positive and negative effects is essential. Each institution has its own hidden curriculum, and educators should approach it with curiosity.

Aim: This study aimed to determine nursing students' perceptions of the hidden curriculum in nursing education and the factors associated with these perceptions.

Methods: This descriptive, cross-sectional study was conducted with 658 nursing students enrolled at a university in Istanbul, Türkiye. After ethical approval was obtained, data were collected using the Personal Information Form and the Hidden Curriculum Assessment Scale in Nursing Education. Descriptive methods, univariate linear regression, and multiple linear regression analyses were employed for data analysis.

Results: The mean age of the students was 20.25 years (standard deviation, SD=1.59), and 36.7% were registered in their fifth semester. Perceptions of the hidden curriculum in nursing education were moderate, with a mean score of 147.34 ± 21.59 . Multiple regression analysis revealed that nursing students with positive perceptions of education satisfaction ($B=1.988$; $p=0.000$) and education quality ($B=4.270$; $p=0.000$) were more likely to have higher perceptions of the hidden curriculum in nursing education. The regression model demonstrated a statistically significant explanatory power of 29.9%.

Conclusion: The findings suggest that creating satisfying and high-quality learning environments can enhance nursing students' utilization of the hidden curriculum in nursing education.

Keywords: Hidden curriculum, nursing education, nursing students

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Introduction

John Dewey¹ in 1938 expressed his perspective on the learning-teaching process with the statement, "Perhaps the greatest of all pedagogical fallacies is the notion that a person learns only the particular thing he is studying at the time" in his book *Experience and Education*.² This statement emphasizes the importance of adopting a multidimensional perspective to explore the various aspects of knowledge that nursing students acquire during their education. Consequently, when designing nursing education programs, it is essential to consider both formal and informal sources of learning.

Nursing education curricula are structured according to the standards set by the Nursing National Core Education Program.³ However, the curriculum encompasses not only learning content but is also shaped by various role models, including faculty members, lecturers, nurse mentors, nurse managers, and peers, who influence nursing students throughout their educational journey. From these sources, students learn about topics such as developing professional behaviors, acquiring professional skills, exhibiting positive and negative attitudes during education and practice, shaping professional perceptions, and undergoing professional socialization.^{4,5} Therefore, students can acquire knowledge through the nursing curriculum, which may be either explicit or implicit.

The term *hidden curriculum* refers to the values, beliefs, and expectations that shape a student's learning experience within institutional and professional cultures. Another definition describes the hidden curriculum as implicit messages, unintentional learning outcomes, unstated expectations, and a curriculum informally developed by students

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themselves.⁶ It reflects the knowledge, concepts, perceptions, performance, and values that students acquire outside of the classroom setting.⁷ It is a collection of unwritten social and cultural values, roles, assumptions, and expectations that significantly influence an individual's behavior, often more than the formal, openly available curriculum.^{8,9} The inconsistency between the formal curriculum and the hidden curriculum can lead students to encounter complex emotional and ethical problems.¹⁰ Research indicates that factors such as students' personality traits, the behaviors and feedback of educators, the approaches of clinical nurses, and institutional characteristics play a role in learning the hidden curriculum.^{4,11} Studies have shown that students acquire occupational and professional behaviors from various sources, including the hidden curriculum.^{12,13} However, the hidden curriculum can create a disconnect between institutional knowledge and practical application, which may affect the readiness of new graduates to assume professional roles. Additionally, it increases the likelihood of workplace harassment or bullying by colleagues.^{14,15}

The educational program comprises two components: the visible curriculum and the hidden curriculum.² The hidden curriculum plays a crucial role in shaping students' professional identity, values, and understanding of their professional roles.^{14,16} However, it can also contribute to negative attitudes and behaviors among students.^{14,15} In the literature, limited research has been conducted to explore the role and significance of the hidden curriculum in nursing education.^{7,17} This study aims to examine nursing students' perceptions of the hidden curriculum in nursing education and the factors associated with these perceptions, addressing the gap in the literature.

Study Questions

1. What are the perception levels of nursing students regarding the hidden curriculum?
2. What factors are associated with nursing students' perceptions of the hidden curriculum?

Materials and Methods

Design and Setting

A descriptive, cross-sectional study was conducted from November 15 to December 15, 2020, in Istanbul, Türkiye. The study was set in a four-year baccalaureate nursing program at a foundation university. Nursing students complete this program after completing the eight-semester theoretical and practical courses.

Sample and Participants

The study population consisted of 710 students enrolled in the third semester or beyond in the nursing program at the time of the study. The inclusion criteria were: (a) enrollment in the third semester or later and (b) willingness to participate voluntarily. Based on these criteria, 690 students were eligible for the study. Exclusion criteria included: (a) transferring into the nursing program from another university or program and (b) enrollment in the first or second semester. After applying these criteria, 658 completed questionnaires were analyzed, resulting in a response rate of 95%.

Data Collection Tools

Data were collected using a self-administered questionnaire, which included a Personal Information Form and the Hidden Curriculum Evaluation Scale in Nursing Education.

The Personal Information Form, developed by the researchers, collected data on eight personal characteristics, including age, gender, duration of education, and whether the nursing profession was a voluntary choice. Satisfaction level and perception of education quality were assessed using rating questions on a scale from 0 (never) to 10 (completely).^{2,4,14}

The Hidden Curriculum Evaluation Scale in Nursing Education was developed by Akçakoca and Orgun⁷ in 2021 within the context of Turkish culture in 2020. It consists of 43 items divided into three subscales: *School Climate* (21 items), *Professional Acquisitions* (12 items), and *Student-Teacher-School Interaction* (10 items). Each item is rated on a five-point Likert scale: 1 (never), 2 (rarely), 3 (sometimes), 4 (frequently), and 5 (always). The total score is calculated by summing the scores of all items, with a possible range of 43 to 215. Higher scores indicate that the implicit curriculum aligns with the explicit curriculum and supports the development of desired characteristics in students. Cronbach's alpha coefficient was 0.91 for the overall scale and ranged from 0.76 to 0.91 for the subscales.⁷

Data Collection

Before initiating data collection, an online information session was conducted for students across different semesters. A self-administered questionnaire was distributed to students through an online platform. The researchers monitored the database closely, ensuring only completed survey forms were included. Students filled out the questionnaire in approximately 15 to 20 minutes.

Data Analysis

Data analysis was performed using the Statistical Package for the Social Sciences (SPSS, version 25.0; IBM Corp., Armonk, NY, USA), with a significance level set at $P < 0.05$. Categorical variables are presented as numbers and percentages, while continuous variables are presented as means and standard deviations. The Shapiro-Wilk test was used to assess normality, and all variables were found to follow a normal distribution. Descriptive statistical methods (such as frequency, percentage, mean, median, confidence interval [CI], and standard deviation [SD]) were used. Univariate linear regression analysis was conducted as a preliminary step to identify the characteristics of nursing students based on their perceptions of the hidden curriculum. Additionally, the Full Enter model of multiple linear regression analysis was applied to determine the independent factors associated with scale scores, based on the results of the univariate analysis. To validate the model, the Multicollinearity Test and Autocorrelation Test (Durbin-Watson test) were performed to ensure the basic assumptions were met. No multicollinearity or autocorrelation issues were identified. A 95% CI was established, and $P < 0.05$ was considered statistically significant.

Ethical Considerations

The study was conducted in compliance with the principles outlined in the Declaration of Helsinki. The protocol was approved by Istanbul Medipol University Non-Interventional Clinical Research Ethics Committee (Approval Number: 10840098-772.02-E.61602, Date: 17.11.2020), and written permission was obtained from the nursing program. Participants were informed about the study's purpose, and verbal consent was acquired. Permission to use the Turkish version of the scale was granted by the corresponding author via email.

Variables	(n)	(%)	
Gender	Female	542	82.4
	Male	116	17.6
Education Duration	3 rd Semester	227	34.5
	5 th Semester	241	36.7
	7 th Semester	190	28.8
Chosen the Nursing Profession Voluntarily	Yes	315	47.9
	No	343	52.1
Variables	Mean ± SD	Range	
Age, Years	20.25 ± 1.59	18-33	
Level of Satisfaction with Education	6.40 ± 2.19	1-10	
Level of Quality of Education	6.57 ± 1.94	1-10	

SD: Standard Deviation

Results

The mean age of the students was 20.25 years (SD=1.59; range=18-33). Most students were female; 36.7% were registered in the fifth semester, and 47.9% had voluntarily chosen the nursing profession. Students evaluated their educational satisfaction with a mean score of 6.40 (SD=2.19; range=1-10). Perceptions of education quality were rated with a mean score of 6.57 out of 10 (SD=1.94; range=1-10) (Table 1).

Hidden curriculum perceptions in nursing education were found to be moderate, with a mean score of 147.34 (SD=21.59). Among the subscales, the highest scores were observed in *School Climate* (70.80 ± 14.91), *Professional Acquisitions* (46.24 ± 8.81), and *Student-Teacher-School Interaction* (30.21 ± 8.09). The scale demonstrated acceptable reliability (Cronbach's $\alpha=0.91$), as did all subscales (Cronbach's $\alpha=0.82-0.93$) (Table 2).

Univariate regression analysis revealed that perceptions of education satisfaction and education quality were associated with hidden curriculum perceptions in nursing education. Other characteristics, such as age, gender, education level, and the voluntary choice of the

Scale and Subscale	Mean ± SD	Range	Cronbach's Alpha Coefficient
School Climate	70.80 ± 14.91	21-105	0.93
Professional Acquisitions	46.24 ± 8.81	13-60	0.92
Student-Teacher-School Interaction	30.21 ± 8.09	14-49	0.82
Total Scale	147.34 ± 21.59	82-206	0.91

SD: Standard Deviation

nursing profession, did not have significant effects ($P > 0.05$). Based on the results of the univariate analysis, factors associated with hidden curriculum perceptions in nursing education, namely education satisfaction perceptions and education quality perceptions, were further analyzed using multiple linear regression (Table 3).

Multiple linear regression analysis produced a significant regression model ($F=139.60$; $P < 0.001$), which explained 29.9% of the variance ($R^2=0.29$) in hidden curriculum perceptions in nursing education. The variance was accounted for by education satisfaction perceptions and education quality perceptions. Education satisfaction perceptions [$B=1.988$ (95% CI: 1.059–2.916); $t=4.205$; $P < 0.001$] and education quality perceptions [$B=4.270$ (95% CI: 3.209–5.331); $t=7.902$; $P < 0.001$] were both associated with hidden curriculum perceptions. According to the results of the partial correlations squared (pr^2) analysis, the variable most strongly correlated with hidden curriculum perceptions was education quality perceptions ($pr^2=0.29$) (Table 4).

Discussion

Understanding how students perceive the hidden curriculum is essential for fostering open and transparent discussions in nursing education. The hidden curriculum significantly influences the learning process, and analyzing its impact can help educators guide their interactions with students and delineate the boundaries of the formal curriculum.^{7,17}

In this study, students perceived the hidden curriculum as compatible with the formal curriculum and believed it contributed to the

Variables	Unstandardized Coefficients		t	p	95% Confidence Interval for B	
	B	SE			LLCI	ULCI
Age (years)	-0.578	0.612	-0.945	0.345	-1.780	0.624
Gender (1=Female, 2=Male)	-2.868	1.900	-1.510	0.132	-6.598	0.862
Education Level (Semesters)	3.920	0.552	-0.954	0.340	-2.567	0.888
Voluntary Choice of the Nursing Profession (1=No, 2=Yes)	0.922	1.175	0.784	0.433	-1.386	3.229
Education Satisfaction Perceptions (Scale: 1-10)	1.604	0.509	3.150	0.002	0.604	2.604
Education Quality Perceptions (Scale: 1-10)	3.920	0.552	7.108	0.000	2.837	5.003

B: Beta; SE: Standard Error; LLCI: Lower Limit Confidence Interval; ULCI: Upper Limit Confidence Interval.

Table 4. Factors Associated with Hidden Curriculum Perceptions in Nursing Education Using Multivariate Analysis (n = 658)

Variables	Unstandardized Coefficients		t	P	pr ²	VIF	95% Confidence Interval for B	
	B	SE					LLCI	ULCI
Education Satisfaction Perceptions (Scale: 1-10)	1.988	0.473	4.205	0.000	0.162	2.167	1.059	2.916
Education Quality Perceptions (Scale: 1-10)	4.270	0.540	7.902	0.000	0.295	2.167	3.209	5.331
Model Summary	R ² : 0.29 F (2-655): 139.60 P < 0.001 DW: 1.73 Method: ENTER							

B: Beta; SE: Standard Error; LLCI: Lower Limit Confidence Interval; ULCI: Upper Limit Confidence Interval; pr²: Partial Correlations Square; VIF: Variance Inflation Factor; DW: Durbin-Watson; R²: Coefficient of Determination; F: Variance Analysis.

development of desired student characteristics. Limited studies in the literature similarly suggest that the hidden curriculum in the institutions where these studies were conducted aligns with the formal curriculum and supports the cultivation of desirable student traits.^{4,18} However, a national hidden curriculum for nursing education cannot be assumed. Each program has a hidden curriculum shaped by its unique history, culture, and practices.² For this reason, reaching a general conclusion is not easy. However, studies conducted in different nursing programs can offer more detailed insights into the scope of the hidden curriculum.

This study found a close correlation between students' education satisfaction and their perceptions of the hidden curriculum, a relationship supported by the literature.^{2,18} The interaction between students' physical, cognitive, and social environments and the hidden curriculum has been a longstanding area of research.¹⁹ Karimi et al.²⁰ in 2015 highlighted the influence of physical resources and campus facilities on the hidden curriculum in organizational and practical learning settings. Similarly, Benti Terefe and Gemeta Gudeta²¹ in 2022 reported that the quality of hospitals used for clinical practice impacts students' educational satisfaction. Therefore, implementing measures to enhance student satisfaction within the learning environment can positively impact their perceptions of the hidden curriculum.

In the present study, students' perceptions of higher-quality education were associated with higher perceptions of the hidden curriculum. The quality of nursing education depends on various factors, including the educational environment, organizational policies, student-educator ratios, and both the formal and hidden curricula. These variables have been identified as critical determinants of nursing education quality.^{22,23} An educational setting equipped with modern facilities, practical workspaces, and advanced classroom technologies fosters advanced analytical skills and critical thinking among students.²⁴ Moreover, information and communication technologies for continuing education can facilitate online communication, provide collaboration opportunities, and enable the sharing of implicit knowledge.² In nursing education, students encounter diverse situations that impact their knowledge and skills beyond the classroom. They learn through interactions with healthcare professionals, exposure to various techniques during patient care, guidance from lecturers, and even requests for health advice from family members. Each of these resources should be considered significant. The hidden curriculum embedded in organizational policies has been studied as a

factor influencing the internalization of ethical values in the nursing profession.¹⁴ Additionally, Karimi et al.²⁰ in 2015 conducted a qualitative study with nursing students, emphasizing the unique role educators play as integral components of the learning process. Therefore, it is crucial to recognize that the words and actions of lecturers and nurse mentors can serve as valuable lessons within the scope of the hidden curriculum.

In this study, unlike findings in national literature, students' characteristics and their responses to educational experiences were not related to their perceptions of the hidden curriculum. Dedemoglu et al.¹⁸ in 2021 found that students with higher grade levels and greater academic achievement exhibited higher perceptions of the hidden curriculum. Similarly, Orgun et al.⁴ in 2019 reported that being male, over 24 years old, and disliking the profession increased hidden curriculum perceptions. Future research on this subject may contribute to more precise conclusions.

Students acquire numerous professional skills through participation in theoretical lessons and practical experiences. Despite efforts to develop these skills through the formal curriculum, it is crucial to recognize the impact of the hidden curriculum. According to Karimi et al.¹¹ in 2014, individual-centered care, professional autonomy, and professional image are key concepts emphasized within the hidden curriculum of nursing education. However, some nursing students may unintentionally develop weaker decision-making skills due to insufficient autonomy in their training programs. Consequently, these students may face challenges in effectively addressing the healthcare needs of individuals, families, and society after graduation.¹³ According to a study by Kürtüncü and Kurt²⁵ in 2020, nursing students faced numerous challenges during the pandemic. These challenges included limited access to information and communication technologies necessary for the learning process, inadequate infrastructure for distance education or synchronous lessons, the inability to perform practical lessons in a formal setting, and uncertainties about how to compensate for missed lessons. Such learning challenges drive students toward self-directed learning. To address these issues, it is essential to clarify non-formal learning areas and support the positive outcomes of the hidden curriculum.

Limitations and Strengths

The study's strengths include the use of valid and reliable data collection tools and a high student participation rate. However,

several limitations exist. The limitations of the study include challenges in generalizing the results due to data collection being conducted at a single center and the reliance on self-reported methods. Additionally, the absence of specific measurement tools to assess satisfaction and quality perceptions further limits the generalizability of the findings.

Conclusion

This study found that students perceived the hidden curriculum and formal curriculum as compatible. Higher perceptions of educational satisfaction and quality were identified as factors associated with hidden curriculum perceptions in nursing education.

The hidden curriculum comprises unintentional learning outcomes that occur during the educational process. It is crucial to recognize learning resources beyond formal education early in undergraduate education. Each institution has its own hidden curriculum, and educators should approach it with curiosity. Further research can advance nursing education by identifying the hidden curriculum. Nurse educators can use this understanding to clarify message perceptions, better prepare students, enhance program design, and achieve positive long-term outcomes. Implementing educational practices that improve learning satisfaction and perceptions of quality can enhance the outcomes predicted by the formal curriculum. Educators must actively promote positive messages and minimize negative ones within both academic and clinical environments. This approach will improve the quality and safety of clinical decisions and practices made by future nurses. Unacknowledged hidden resources can significantly impact learning outcomes.

Ethics Committee Approval: Ethics committee approval was obtained from Istanbul Medipol University Non-Interventional Clinical Research Ethics Committee (Approval Number: 10840098-772.02-E.61602, Date: 17.11.2020).

Informed Consent: Participants were informed about the study's purpose, and verbal consent was acquired.

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