International Journal on Science and Technology (IJSAT)
E-ISSN: 2229-7677 ● Website: www.ijsat.org ● Email: editor@ijsat.org

Exploring Patient Compliance with Oral Health Care Regimens: A Mixed-Method Study on Barriers, Motivators, and Demographic Influences in a Tertiary Hospital Setting

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Abstract

Objective: This study explores patient compliance with oral health care regimens in a tertiary hospital, focusing on barriers, motivators, and demographic influences using a mixed-method approach.

Methods: A total of 300 patients completed surveys assessing demographic factors, adherence levels, and barriers, while 30 participants participated in in-depth interviews. Quantitative data were analyzed using descriptive and inferential statistics, and qualitative data were thematically analyzed.

Results: Financial constraints 35%), time limitations 25%), and systemic issues 20%) were identified as primary barriers. Motivators included perceived benefits, external reinforcement, and professional support. Demographic factors, such as age, education, and socioeconomic status, significantly influenced adherence levels. Integration of findings emphasized the need for targeted interventions addressing both individual and systemic factors.

Conclusion: Addressing financial and systemic barriers while enhancing motivation through tailored strategies can improve oral health compliance, particularly in diverse patient populations within tertiary care settings.

Keywords: Oral Health Compliance, Barriers, Motivators, Demographics, Tertiary Hospital, Mixed-Method Study.

Introduction

Oral health compliance directly prevents dental diseases as well as promotes health. Improving dental care and complying with the prescribed regimen is still a challenge that dentists face with their patients. Some studies have shown that compliance with prescribed oral behaviors stems from individual, social, and systemic barriers (Göstemeyer et al., 2019). For example, with dependent populations like children or the elderly, adequate capability and access to proper oral hygiene support is a constant hurdle (Hillebrecht et al., 2024).

In addition to the need for oral health maintenance, motivation is equally crucial since it determines the level of effort invested in seeking attention. Research indicates that younger populations display considerable adherence behavior when offered positive reinforcement or when motivated externally (Erwin et al., 2022). Nevertheless, patients' oral health compliance can also be affected by their socio-demographic characteristics, including financial, educational, and health resource factors (Donaldson et al., 2008).

The effect of parental influence on a child's oral health self-care behaviors sheds light on the complex network of barriers and motivators at work. Parents' knowledge and attitudes towards oral health and their preventive practices strongly determines the child's health compliance behavioral gaps that unwarranted failure to comply (Duijster et al., 2015 ; Amin et al., 2009).

In addition, systemic challenges, such as the way dental services are provided and the ability to pay for care, create different levels of compliance within different population segments. These barriers stress the importance of not only considering the individual level factors, but also other components such as social determinants in designing compliance interventions (Hollister &Anema, 2004; Rabiei et al., 2012).

This investigation seeks to understand the dynamics affecting oral self-care compliance at a tertiary hospital with particular reference to the barriers, motivators, and demographic factors using a mixed-methods approach. This research seeks to fill the voids in existing literature and aid in the creation of purposeful strategies targeting compliance to oral health practices.

Literature Review

The central focus of the research revolves around how oral hygiene routines are followed which has a great effect on the health of the individual. This article compiles all the literature related to the barriers and facilitators of adherence with maintaining oral hygiene across genders and age groups for future work at a tertiary care hospital.

Obstacles to Compliance

The reasons preventing compliance to oral health care practices stem from social or individual as well as structural issues. Research suggests that most elderly people and other dependent groups suffer from lack of mobility and support for adequate oral hygiene practices (Gostemeyer et al., 2019). Children tend to suffer in this aspect as well due to a non compliant attitude stemming from fear of dental work and lack of active supervision from parents (Erwin et al., 2022). Cost and availability of dental services poses some further socio-economic barriers that do not assist in compliance (Donaldson et al., 2008).

The manner in which dental services are provided constitutes systemic barriers hindering compliance. For instance, profound structural inequalities result in underutilization of dental care services among the poor and other marginalized population groups (Rabiei et al., 2012). Such studies suggest the adoption of policies that would alter these systemic approaches together with personal behavior modification policies.

Motivators for Compliance

Motivational factors are essential in enhancing compliance with oral health maintenance. Positive feedback, teaching, and even professional help can motivate them. Parents' motivation and knowledge are very important in determining children's oral health practices (Duijster et al, 2015). In younger populations, external motivators like reminders and rewards have also been shown to enhance compliance (Erwin et al, 2022).

Health behavior models give some perspective towards motivational strategies meant to boost adherence to oral health issues. For example, the Health Belief Model explains reliance on perceived benefits as an important factor in self-efficacy which shows positive health behavior (Hollister &Anema, 2004). These frameworks signal the need to design specific interventions that take into account possible individual motivators and barriers.

Demographic Influences

Age, sex, socio-economic status, and level of education are among the demographic factors that affect compliance with oral health maintenance. Older adults often have poor oral health as their age increases because of physical processes and reduced availability and utilization of dental services (Hillebrecht et al., 2024), and children are typically dependent on their parents and on readily available pediatric dentistry (Amin & Harrison, 2009).

These challenges are modified by variables like socioeconomic status. As a consequence of lack of mobility and awareness, financially weaker groups tend to miss out on receiving services which could allow them to maintain an acceptable standard of health (Donaldson et al., 2008). Educational outreach programs aimed at these populations might help eliminate the gap towards more favorable health results.

Combination of Barriers, Influencing Factors And Population Characteristics

It is important to note the combination of barriers and the motivating as well as demographic factors while developing appropriate steps to take regarding oral health. A lot of research indicates that barrier compliance rates can be improved dramatically by addressing self care, systemic inequities, and demographic disparities all at once. For instance, separating education from systemic changes in the manner healthcare services are delivered will remove barriers, increase motivation, and broaden access to services us (Göstemeyer et al., 2019; Rabiei et al., 2012).

The literature demonstrates that adherence to oral health practices is shaped by several factors that are in conflict and tend to interact with one another. Personal motivation and education are very important, but so are social changes and policies that directly address structural inequalities. This review illustrates the case for employing an exploratory sequential approach using quantitative followed by qualitative methods at a tertiary hospital in order to construct optimum conditions towards compliance with oral health care practices.

Methodology

This mixed-method study was conducted in a tertiary hospital to explore patient compliance with oral health care regimens, focusing on identifying barriers, motivators, and demographic influences. The

study comprised two phases: a quantitative survey to assess patient compliance patterns and a qualitative interview component to explore in-depth perspectives.

Study Design

A convergent mixed-method design was employed, integrating quantitative and qualitative data to provide a comprehensive understanding of factors influencing oral health compliance. This approach allowed for the validation and triangulation of findings from both datasets.

Study Population

The study population consisted of adult patients receiving oral health care at the dental outpatient department of the tertiary hospital. Inclusion criteria included patients aged 18 years or older, with at least one dental visit in the past year. Patients with cognitive impairments or communication difficulties were excluded. A total of 300 patients participated in the survey phase, and 30 patients were selected for in-depth interviews through purposive sampling to ensure a diverse representation of demographic characteristics.

Data Collection

1. Quantitative Phase: Patient Survey

- A structured questionnaire was used to collect data on patient demographics age, gender, education level, income, and employment status), oral health behaviors, and adherence to oral health care regimens.
- The survey also included validated scales to assess motivational factors e.g., Health Belief Model constructs such as perceived benefits and self-efficacy) and perceived barriers to compliance e.g., financial, time, or systemic constraints).
- The questionnaire was administered in person by trained research assistants during patient visits to the dental department.

2. Qualitative Phase: Semi-Structured Interviews

- Semi-structured interviews were conducted with a subset of patients to explore their experiences and perspectives on oral health care compliance.
- Interview questions focused on barriers to adherence, motivators for maintaining oral health, and how demographic and systemic factors influenced their behaviors.
- Interviews were audio-recorded and transcribed verbatim for analysis. Each session lasted approximately 30–40 minutes.

Data Analysis

1. Quantitative Analysis

- Survey data were analyzed using descriptive and inferential statistics. Frequencies and percentages were calculated for categorical variables, while means and standard deviations were used for continuous variables.
- Chi-square tests and logistic regression models were applied to examine associations between demographic factors and patient compliance.

2. Qualitative Analysis
- Transcribed interviews were analyzed using thematic analysis. A coding framework was developed based on pre-existing literature and emergent themes from the data.
- NVivo software was used to manage and analyze qualitative data, ensuring systematic identification of patterns and relationships.

3. Integration of Data
- Quantitative and qualitative findings were integrated during the interpretation phase. Convergent themes from both datasets were identified to provide a holistic understanding of barriers, motivators, and demographic influences on oral health compliance.

Ethical Considerations
Ethical approval was obtained from the ethics committee. Informed consent was obtained from all participants prior to their involvement in the study. Participants were assured of the confidentiality and anonymity of their data, and they were free to withdraw from the study at any time without penalty.

Findings
Quantitative Findings
The quantitative analysis provided insights into the demographic distribution of the study population, patient adherence levels to oral health regimens, and perceived barriers to compliance. Below are the detailed findings:

Demographic Summary
The study population was diverse in terms of age, gender, education, and income levels. The key demographic details are summarized in the table below:

Demographic Factor	Subcategories
Age Group (years)	18-30: 25%, 31-50: 40%, >50: 35%
Gender	Male: 45%, Female: 55%
Education Level	Primary: 20%, Secondary: 35%, Tertiary: 45%
Income Level	Low: 30%, Medium: 50%, High: 20%

Patient Adherence to Oral Health Regimens
Patient adherence was categorized into three levels: high, moderate, and low adherence. The distribution is as follows:

Adherence Category	Percentage
High Adherence	40%
Moderate Adherence	35%
Low Adherence	25%

Perceived Barriers to Compliance
Patients reported several barriers that affected their adherence to oral health regimens. The most significant barriers and their corresponding percentages are shown below:

Barrier Type	Percentage
Financial Constraints	35%
Time Constraints	25%
Lack of Awareness	20%
Systemic Issues	20%

1. Patient Adherence to Oral Health Regimens:
  - High adherence was reported by 40% of the participants, while 35% exhibited moderate adherence, and 25% reported low adherence.

2. Perceived Barriers to Compliance:
  - Financial constraints 35%) were the most commonly reported barrier, followed by time constraints 25%), lack of awareness 20%), and systemic issues 20%).

Qualitative Findings
The qualitative analysis revealed several themes and sub-themes related to patient compliance with oral health regimens. These were derived from the interviews with participants, which highlighted barriers, motivators, and the role of demographic factors in shaping oral health behaviors. Below are the detailed findings:

Theme 1: Barriers to Compliance
Sub-themes:
1. Financial Constraints:

- The respondents pointed out that the expenses incurred during dental therapies portray a major hindrance.

- Participant A (Male, aged 35): ‘The reason why I don’t visit the dentist is due to costs, and unfortunately, insurance does not cover most of the treatments.’

- Participant B (Female, aged 48): ‘I understand the importance of dental care but I cannot afford it, as there are other expenses that need to come first.’

2. Time Constraints:

- A number of respondents noted their workload as a contributing factor to their poor oral and dental health.

- Participant C Male, 28 years: “I work long days, so by the time I’m free, clinics are already closed."

- Participant D Female, 40 years: “I don’t have time for regular dental checkups with work and family responsibilities.”

3. Lack of Awareness:

- Issues regarding the significance of prevention care were not clearly articulated.

- Participant E Male, 52 years): ""I did not forsee how ignoring my gums could jeopardize my health..."

- Participant F Female, 30 years): “I don’t think anybody really went into detail about what happens when you neglect oral hygiene.”

Theme 2: Motivators for Compliance
Sub-themes:
1. External Support:

- The motivational factors mentioned include professional reminders and familial support.

- Female Participant G 38 Years: “I am assisted by my dentist’s reminder messages that help me remember my appointments.”

- Male Participant H 45 Years: “My wife makes sure to always tell me to go see the dentist and, of course, I would forget otherwise.”

2. Perceived Benefits:

- Participants motivated by improvements in their oral health maintained an oral health routine.

- Participant I Female, 25 years old): “I feel really good after a cleaning which further contributes to my improvement.”

- Participant J Male, 60 years old): “I’ve had a root canal before, and it was excruciating. These days, I try to do everything to prevent that from happening again.”

Theme 3: Influence of Demographic Factors
Sub-themes:
1. Socioeconomic Status:

- Participants with low income indicated more difficulties in receiving care.

- Interview K Female, 42 years: “I have to save up to even afford a basic cleaning.”

- Interview L Male, 50 years: “I know I need dental work. But I just don’t have the money.”

2. Age and Health Awareness:

- The older respondents showed more worry regarding oral health due to the health risks related to it.

- Participant M (Female, 63 years): “With age, I understand the relationship that oral health has with one’s overall health.”

- Participant N (Male, 70 years): "I've prioritized oral hygiene to prevent larger chronic health issues in the future."

Theme 4: SystemicBarriers
Sub-themes:
1. Accessibility of Services:
- Participants reported on difficulties of accessing nearby dental clinics.

- Participant O (F, 34): "There is no dental clinic in my location and because of that it is hard to get to one."

- Participant P (M, 45): "People from the countryside have a hard time, it's not only transportation"

2. Appointment Availability:

- Another challenge people faced was the restricted booking of appointments.

- "Scheduling an appointment around my other commitments is difficult", participant Q (female, age 29) said.

- "I don't bother going sometimes. I usually have to wait too long for a slot, which makes it difficult", participant R (male 55).

Discussion
The results of this case provide valuable understanding to the intricate factors of patient compliance with oral health care services in a tertiary hospital. The mixture of barriers, motivators and demographic data gives a comprehensive understanding of the adherence behaviors which are intricate systems by themselves.

Key Findings and Implications
Barriers to Compliance
This gaps study highlighted systemic and economic issues as primary barriers to compliance which is in line with previous literature that examined cost and access to care as salient factors of oral health disparities (Göstemeyer et al., 2019). Patients in the focus groups always mentioned high dental treatment costs and inadequate insurance coverage as primary reasons for avoiding or postponing treatment. This aligns with existing evidence on low-income populations as well (Donaldson et al., 2008). Moreover, inflexible appointment times and long waits, which were noted in both the survey and interview data, create additional problems in many systems and practices.

Motivators for Compliance
The self-reported reasons that seem to motivate patients to adhere to good oral hygiene include claimed rewards of wellness, praise, and help from other people, and these were more prevalent among highly compliant patients. This aligns with health behavior models which posit self efficacy and other external incentives influence self care activities more than health behavior (Hollister &Anema, 2004). Patients

who were continuously motivated with specific techniques and tailored care shown enhanced commitment to oral health.

Demographic Influences

Various demographic aspects such as age, gender, and education level greatly impacted compliance patterns. Adults were more likely to report barriers associated with mobility and other systemic issues, whereas younger patients tended to report time as the major barrier. Education level emerged as a key predictor of oral health practices, with patients having tertiary education showing increased oral health practices. This clearly indicates that efforts need to be made in all the identified sub groups for better effectiveness (Hillebrecht et al., 2024).

Integration of Quantitative and Qualitative Findings

The gathering of results from both approaches shows how barriers, motivators, and demographics are interconnected. For example, quantitative findings indicated that financial limitations impacted 35% of respondents and interviews earlier conducted revealed why such barriers existed. This illustrates the usefulness of mixed-methods integration for understanding the nuances of compliance to oral health.

Practical Implications

Policies and practice will be impacted by these findings. Tackling financial and systemic challenges calls for an integrated approach which includes increasing insurance coverage, implementing sliding fee scales, and reorganizing the structure of dental services to facilitate access. Moreover, motivational strategies, such as reminders and personalized instruction, can improve adherence among different populations. Furthermore, such interventions should be demographic specific and target groups such as older patients and those from lower socioeconomic backgrounds.

Limitations and Future Directions

This research had certain limitations. In the first place, the work was done in one tertiary hospital which could affect the generalizability of the results to other settings. In the second place, the data collected was self-reported which could lead to recall bias. In the future, studies should investigate the use of longitudinal designs to measure compliance over time and also extend the scope of the study to cover other healthcare facilities.

Conclusion

This analysis stresses the complex barriers and facilitators that affect compliance with oral health in a tertiary hospital institution. These elements can be solved by a systemic approach with specific reforms, multi-faceted interventions, and motivational drivers to strengthen the adherence and equity of oral health practices. Further investigation is necessary to expand these conclusions and develop practical applications policies.

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