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Practice of Self Medication for Dental Problems among low Socioeconomic Status Population of Western Maharashtra a Questionnaire Study

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ABSTRACT: Self-medication for dental problems is a common practice, particularly among populations of low socioeconomic status, often resulting from a combination of limited access to healthcare, financial constraints, and insufficient health literacy. This study investigates the prevalence and patterns of self-medication for dental issues within low-income communities in Western Maharashtra. Utilizing a cross-sectional design, data were collected through a structured questionnaire administered to 300 participants aged 18 years and above, adhering to the modified B.G. Prasad classification for socioeconomic status. Results show that a significant proportion (81.0%) of respondents experienced dental problems in the past six months, with self-medication reported by 54.3% of participants primarily using herbal remedies (47.3%) and over-the-counter painkillers (17.7%). High treatment costs were cited as the dominant reason for self-medication (45.0%), while a notable 58.0% were aware of the associated risks. Statistical analysis revealed significant correlations between education level, income, and self-medication behaviors, with higher education correlating with better risk awareness and consultation behavior. The findings underscore an urgent need for educational interventions to improve health literacy regarding oral health and to enhance access to professional dental care in underserved communities. Future public health strategies must address these systemic barriers to reduce reliance on self-medication and promote better oral health outcomes.

I. INTRODUCTION

Self-medication is a prevalent practice in many countries, encompassing both developed and developing nations. It refers to the use of medications, herbal remedies, or home treatments without consulting a healthcare professional. Individuals may choose to self-medicate for various reasons, including convenience, high costs of medical visits, prior experiences with similar health issues, and cultural influences. In India, particularly in low-income areas, this practice is especially common due to barriers such as limited access to healthcare services, high expenses related to medical consultations, and long waiting times at public health clinics. A study done by Chakaraborty et al. in 2016 noted that a significant number of individuals in developing countries engage in self-medication primarily due to these challenges ^(1,2).

In low-income communities across India, many individuals rely on over-the-counter medications, home remedies, and advice from family and friends when they encounter health issues. This reliance stems from a critical need for immediate relief, often overriding concerns about understanding underlying health conditions. While self-medication can occasionally provide temporary relief, it may also lead to serious long-term health risks. According to Alshammari et al. (2020), without professional diagnosis, health conditions can worsen, necessitating more intensive and costly treatments later ^(3,4). This concern is particularly salient with respect to dental health, where the consequences of inappropriate self-medication can lead to exacerbated oral health issues ^(5,6).

Furthermore, the relationship between self-medication, mental health, and social context cannot be overlooked. Primack et al. (2016) highlight the role of social media in influencing individuals' perceptions regarding self-medication behaviors through social comparisons and peer dynamics ⁽⁷⁾. In addition, Twenge and Campbell (2018) point out a connection between social media use and increased anxiety, potentially leading individuals to resort to self-medication in an attempt to cope with mental stress ⁽⁸⁾. The prevalence of these phenomena in lower socioeconomic groups amplifies the challenges faced by individuals who may lack both awareness and the resources needed to seek appropriate medical care.

Given the pressing nature of these challenges, this study aims to investigate the factors that contribute to self-medication practices specifically for dental issues among populations within low-income communities. The study seeks to explore what drives individuals to choose self-medication over professional dental care, focusing on variables such as socioeconomic status, education levels, cultural beliefs, and accessibility to healthcare services. Additionally, it aims to illuminate how these factors vary among different demographic groups within low-income settings and to identify common misconceptions regarding oral health that may perpetuate self-medication habits. The ultimate goal is to provide

insights that will help in developing targeted interventions to improve access to affordable dental care and educate populations about proper oral health practices.

II. METHODOLOGY

A cross-sectional study was conducted in western , Maharashtra, to assess the practice of self-medication for dental problems among individuals from low socioeconomic status. The study included participants aged 18 years and above, residing in low- socio economic income areas of Pune for at least 6 months, and belonging to socioeconomic classes IV and V according to modified B.G. Prasad classification 2021. Individuals with cognitive impairment, healthcare professionals, and those unwilling to provide informed consent were excluded from the study. The pilot study helped establish the questionnaire's reliability using Cronbach's alpha ($\alpha = 0.82$) and enabled necessary modifications to improve clarity and comprehension. The sample size was calculated using OpenEpi version 3.01, considering the prevalence of dental self-medication as 42% from previous studies, with a 95% confidence interval and 5% margin of error. The calculated sample size was adjusted for a 10% non-response rate, resulting in a final sample size of 300 participants.

A structured questionnaire was developed based on extensive literature review. The questionnaire comprised of four sections: demographic information, socioeconomic status assessment, dental health status, and self-medication practices. Face validity was assessed through cognitive interviews. A pilot study was conducted among 30 participants who met the inclusion criteria but the result of the pilot study were not included in the final study sample. In this study, a door-to-door data collection methodology was employed to maximize participant engagement and minimize selection bias, enhancing the quality of the gathered data.

Data management and statistical analysis were performed using Microsoft Excel 2019 and IBM SPSS Statistics version 26.0. The collected data were entered into Excel spreadsheets and Descriptive statistics were computed for demographic variables and presented as frequencies and percentages. Chi-square tests were utilized to overview affiliations between categorical variables. A p-value < 0.05 was considered statistically significant. The information were shown utilizing appropriate tables.

III. RESULT

In this study 54.3% were female and 45.7% were male, with a mean age of 40.8 ± 15.7 years. Educational background revealed 25.7% with no formal education, 24.7% with primary education, 19.7% graduates or higher, 18.7% with secondary education, and 11.3% with higher secondary education. Employment status showed 47.0% unemployed, 21.7% employed, 16.0% self-employed, 14.0% students, and 1.3% in other categories.

In the last six months 81.0% had experienced dental problems, leaving 19.0% who did not. Additionally, it details the distribution of specific dental issues among respondents. Toothache was the most common complaint (42.3%), followed by bleeding gums (16.3%), with other issues, cavities, and swelling reported by 15.0%, 13.7%, and 12.7% of respondents, respectively.

Table 1 shows Self-medication Patterns among study population .This table is divided into two sections. Section (a) provides the types of self-medication used, where herbal/home remedies are favored by 47.3% of respondents, followed by OTC painkillers (17.7%), oral gels (13.3%), and even non-prescribed antibiotics (13.0%). To obtain these medications. The primary source is friends or family (40.7%), followed by medical stores (32.7%). Other sources include general stores (17.0%), online platforms (5.3%), and additional sources (4.3%).

Table 2 shows reasons for Self-medication and Risk Awareness among the study population. In part (a), the table lists the reasons for choosing self medication, with 45.0% citing high treatment costs as the primary factor, followed by 24.0% noting the absence of nearby clinics, 16.0% reporting a lack of time, and 12.3% perceiving their dental issue to be minor. Only 2.7% indicated other reasons. Part (b) presents the level of risk awareness, showing that 58.0% of respondents were aware of the risks associated with self-medication, whereas 42.0% were not.

Table 1 Self-medication Patterns among study participants

a. Types of Medications Used

Type	Percentage (%)
Herbal/home remedies	47.3
OTC painkillers	17.7
Oral gels	13.3

Antibiotics (without prescription)	13.0
Other remedies	8.7

b. Sources of Medication

Source	Percentage (%)
Friends/Family	40.7
Medical stores	32.7
General stores	17.0
Online	5.3
Other	4.3

Table 2 Reasons for Self-medication and Risk Awareness among study participants**a. Reasons for Self-medication**

Reason	Percentage (%)
High treatment costs	45.0
No nearby clinic	24.0
Lack of time	16.0
Perception of minor problems	12.3
Other reasons	2.7

b. Risk Awareness

Awareness	Percentage (%)
Aware	58.0
Not aware	42.0

Table 3: Association between Demographic Variables and Self-Medication Practices in Dental Conditions among study participants

Variables Compared	p-value	Significance
Age vs Self-medication frequency	0.032	Significant
Education level vs Medicine choice	0.005	Highly significant
Income vs Professional consultation	0.001	Highly significant
Gender vs Self-medication preference	0.210	Not significant
Employment vs Treatment seeking behavior	0.015	Significant
Education vs Risk awareness	0.003	Highly significant
Age vs Home remedy usage	0.042	Significant

Chi square test where $p < 0.5$ is statically significant

Table 3 shows how different background factors, such as age, education, income, gender, and employment, relate to the way people handle dental issues through self-medication. In our study, this reveals that education level and income had the strongest influence on self-medication behavior, where higher educated individuals showed more awareness of risks and higher income groups were more likely to seek professional consultation. Age also played a notable role in both frequency of self-medication and home remedy usage, while gender differences were not significant in determining self-medication choices. These findings suggest that socioeconomic factors, particularly education and income, are key determinants in how people manage their dental problems without professional consultation.

IV. DISCUSSION

The practice of self-medication for dental problems among individuals from low socioeconomic backgrounds in Western Maharashtra raises considerable concerns regarding health outcomes and access to professional care. Self-medication, defined as the use of medications without professional guidance, is prevalent in economically disadvantaged



communities, where individuals often turn to over-the-counter (OTC) drugs and home remedies due to factors such as cost, accessibility, and lack of awareness. Olawuyi et al. (2019) highlight that self-medication often emerges from inadequate knowledge regarding diagnosis and appropriate treatments (9). Similarly, studies conducted by Kazemioula et al. (2022) underline the risks associated with self-diagnosis and inappropriate medication use, particularly in low-income environments where healthcare literacy is often limited (10). These findings are corroborated by the current study, which reveals a critical need for educational interventions aimed at improving understanding of health conditions and the dangers of self-medication.

Factors influencing self-medication practices are multifaceted, with studies illustrating the significant impact of educational level and income on healthcare choices. Authors like Jain et al. (2024) found that individuals with higher educational backgrounds not only demonstrate better awareness of health risks but also exhibit lower tendencies to engage in self-medication practices (11). Conversely, individuals in lower socioeconomic groups often lack access to reliable health information, leading them to rely on informal sources for diagnoses and treatments. The current study indicates that 45.0% of respondents cited high treatment costs as their primary reason for self-medication, reinforcing the findings of Essa et al. (2019), who argue that financial constraints compel individuals to seek immediate relief through self-medication rather than professional care (12).

Moreover, the available evidence suggests that the consequences of self-medication can be especially detrimental in the realm of dental health. Primack et al. (2020) explored the nexus between mental health and self-medication, noting that individuals experiencing psychological distress may resort to inappropriate medication practices as a coping mechanism (13). This phenomenon was reflected in our findings, where a significant number of respondents reported using painkillers and antibiotics without consulting healthcare professionals. These actions not only endanger individual health but may lead to broader public health concerns, such as antibiotic resistance, as highlighted by Titisuk et al. (2023) (14). The implications of these findings are manifold and emphasize the urgent need for targeted educational interventions within these communities. Effective public health initiatives must focus on informing individuals about the risks of self-medication and the critical importance of seeking professional care for dental issues. Studies conducted by Seabrook et al. (2016) advocate for community health programs designed to improve health literacy and emphasize the risks associated with self-treatment, particularly in low-income areas (15). For example, mobile health clinics and free dental camps could serve as practical solutions to mitigate barriers to accessing dental care (16).

This study also identified the role of social media in shaping health behaviors. As noted by Schønning et al. (2020), social media platforms can influence individuals' perceptions regarding medication and treatment options, sometimes encouraging self-medication through shared misinformation (17). Targeting these digital platforms to disseminate accurate health information could be a cost-effective approach to reduce reliance on self-medication and improve oral health outcomes among vulnerable populations.

Based on the findings, a few recommendations can be made. First, public health education campaigns should be designed to improve awareness of the risks associated with self-medication, emphasizing the importance of professional consultation for dental issues. These campaigns can use various methods, including community workshops and engagement through social media platforms to reach a wider audience. Second, the establishment of mobile health clinics could enhance access to professional dental care in underserved areas, providing immediate assistance and guidance. Third, future research should focus on exploring the specific barriers low-income individuals face in accessing dental care, including transportation issues and health literacy challenges. Finally, collaborations with local leaders and healthcare providers can facilitate community engagement and trust in public health initiatives, ultimately reducing reliance on self-medication.

In this several limitations are present which ought to be acknowledged. First, the cross-sectional design limits the ability to draw causal conclusions regarding self-medication practices and associated factors. Second, the reliance on self-reported data may lead to biases, as participants might underreport or overreport their self-medication behaviors due to societal stigma or lack of awareness. Third, the sample was drawn from specific low-income areas in Western Maharashtra, which may not represent the broader population of individuals in similar socioeconomic conditions across India. Finally, the study did not explore the actual health outcomes resulting from self-medication, which could provide a more comprehensive understanding of the implications of this practice.

V. CONCLUSION

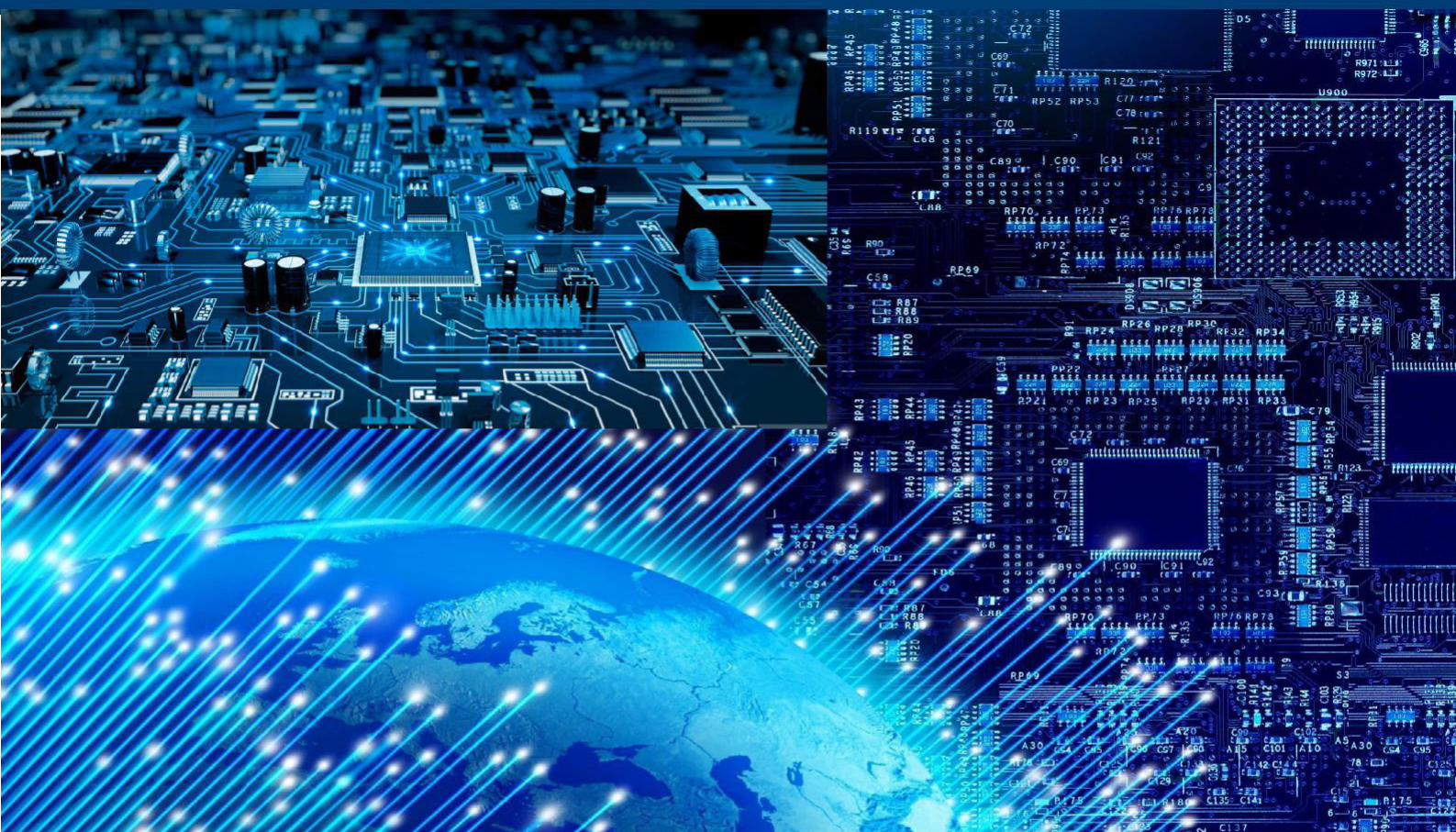
The challenging landscape of self-medication practices for dental problems among individuals of low socioeconomic status in Western Maharashtra necessitates a multifaceted approach to intervention. Future research should not only explore the long-term impacts of self-medication on oral health but also investigate the effectiveness of varying



educational strategies aimed at improving health literacy. By engaging with the specific needs of these populations and addressing the barriers that prevent access to professional dental care, public health authorities can foster a more informed and healthier community.

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