



Received: 18 May, 2022

Accepted: 23 May, 2022

Published: 24 May, 2022

*Corresponding author: Nandita Gautam, Institute of Dental Sciences, Bareilly, Department of Public Health Dentistry, Institute of Dental Sciences, Bareilly International University, Bareilly, India, Tel: 837706470; E-mail: nanditagautam63552@gmail.com

ORCID: <https://orcid.org/0000-0001-9824-6014>

Keywords: Quit; Smoking; Dentists; Tobacco cessation center

Copyright License: © 2021 Gautam N, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

<https://www.peertechzpublications.com>

Check for updates

Research Article

The influence of smoking on oral health and patient evaluation of tobacco cessation help from dentists working in the dental college of Bareilly city

Nandita Gautam^{1*}, Shivalingesh KK², Satyaki Verma³, Vishal Kumar⁴ and Isha Saxena⁵

¹Institute of Dental Sciences, Bareilly, Department of Public Health Dentistry, Institute of Dental Sciences, Bareilly International University, Bareilly, India

²Professor & Head, Department of Public Health Dentistry Institute of Dental Sciences, Bareilly, India

³Department of Periodontology, Institute of Dental Sciences, Bareilly, India

⁴Department of Periodontology, Kothiwal Dental College, Muradabad, India

⁵Department of Prosthodontics, Institute of Dental Sciences, Bareilly, India

Abstract

Introduction: Dentists play a key role in assisting patients in quitting smoking. Dentists' competence in smoking cessation as part of regular patient treatment is studied in this research.

Methodology: Two hundred twenty-six patients were selected from the Institute of Dental Sciences Bareilly's smoke cessation center to complete in-person cross-sectional research about previous dental visits Patients' smoking patterns, as well as their smoking cessation experience from their dentists, and willingness for dentists to apply smoking cessation recommendations were all covered in the survey.

Results: Overall, 38 percent of the subjects were current smokers, 8% were former smokers, and 68% had tried to stop smoking before. Former/non-smokers had significantly greater plaque index, gingival index, and probing depth levels than smokers (p0.05). The dentists' approach to cessation conversations, on the other hand, was limited to a list of the negative consequences. Only 32% of patients were told about the negative impacts of tobacco, and only a third were encouraged to quit.

Conclusions: Smoking causes dental health issues. Dentists in Bareilly City may inquire about their patients' smoking habits, but they are less likely to provide actual assistance in quitting.

Introduction

Cigarette smoking kills around 8 million people per year around the world. Estimates from prior years predicted that by 2030, millions more people would die from diseases linked to smoking [1,2]. As a result, smoking cessation and prevention should be one of the top goals of healthcare systems. Smoking has several negative consequences, some of which have a

direct influence on dental health, such as periodontitis and periodontal picket formation [3].

Ascending worries regarding social issues such as discolored teeth and halitosis can be excellent motivators to quit the habit. Whichever the reason for initiative for quitting smoking, professionals have the greatest influence either through motivation to quit, or necessitates [4]. Overall, 40.4 percent of visits to the dentist were estimated by the adult group in the

preceding year [5] and patient monitoring has been steadily growing as a result of education efforts. Furthermore, India has been one of the most popular locations for health tourism in recent years, with dental tourism being one of the most prominent areas in this sector. As a result, dentists are in a unique position to provide smoking cessation advice to their patients at various times. Nicotine, a component of tobacco, causes addiction, and overcoming persistent dependency demands patient-specific multi-step coaching [6].

Dentists are in a special role in providing up-to-date smoking cessation counseling that is beneficial overtime during multiple sessions of dental treatment [7]. Despite the knowledge of the importance of involving dental specialists, dentists lack the expertise to help patients quit smoking [8]. Other addictions, including alcohol, can be difficult for dentists to talk about, and some individuals could be uncomfortable doing so [9]. As a result, comprehending the hurdles from the perspectives of both dentists and patients will be more engaging and fruitful than fighting to smoke [10], because it would just take a few minutes to question, advise, and refer patients to a counselor or quitline [11].

The environment gives cues to act and repercussions of activity in behavioral methods to smoking cessation, influencing individuals' decisions. Stopping smoking becomes a more deliberate action, influenced by those who surround smokers, regardless of the psychological reasons for smoking or the settings in which they find themselves [12]. Dentists are, without a doubt, is a key position to focus on all aspects of health and improve patients' behavior at this time. However, it raises another question: do dental patients want to seek aid from their oral health care practitioners to quit smoking? The majority of the literature looked at the course of action from the dentist's perspective. However, just a few research have looked at the impact of patients' expectations on dentists' attitudes. We wanted to see how patients felt about obtaining information from dentists at dental college in Bareilly city and how motivated their prior dentists were to help them quit smoking.

Methodology

This cross-sectional survey was carried out at a tobacco cessation center situated in the Institute of Dental Sciences Bareilly. The sample was collected using simple random sampling and the sample size calculated was 226. The duration of the study was from November 2021 to April 2022. Patients were asked the questions during their first appointment at the tobacco cessation center before having any treatment or counseling. The questions of research were focused on past dental visits. The questionnaire could be completed at any time. The clinical assessment of periodontal parameters was done just after data was acquired via the questionnaire.

After the patients were greeted at the tobacco cessation center (TCC), a dentist provided details and acquired their agreement to complete the research. The patients were 18 years old and had no language or literacy difficulties.

Ethical approval was obtained from the ethical committee of the Institute of Dental Sciences, for the study.

Cronbach's alpha test was used to determine the internal consistency and reliability of the research. A Cronbach value of 0.70 was deemed acceptable as a reliable indicator. The following themes were covered by 33 questions in the questionnaire: 1) basic demographic information; 2) oral hygiene practices; 3) dental visit frequency; 4) secondhand exposure, knowledge of the systemic effects of smoking; 5) prior dentists' concern in their smoking, and 6) patients' expectations regarding dentists' concern in smoking.

If the patients were smokers, the following subjects were discussed in-depth: 1) smoking behavior; 2) knowledge of smoking's oral repercussions; 3) use of additional tobacco products; 4) past attempts to quitting; 5/6) prior conversation in dental clinics on adverse effects and cessation procedures; 7) want to obtain quit counseling from a dentist; 8) feelings when discussing smoking, and 9) willingness to quit smoking with the assistance of a dentist.

Responses were measured on a 5-point Likert scale that ranges from 'strongly agree' to 'strongly disagree' for questions where precise replies were not feasible, such as 'If your dentist assists you quit smoking, would you reconsider quitting?' To avoid influencing patients' responses, the examination findings in the smoking group were revealed after the questionnaire was completed.

Periodontal parameters

The patients' clinical periodontal characteristics were examined after they completed the survey to ascertain their oral health condition. By sliding the probe along the gingival margin, the plaque index¹⁴ was calculated (0 = no plaque, 1 = plaque on probe, 2 = visible plaque by naked eye, and 3=abundance of soft matter). After pushing the periodontal probe along the gingival sulcus of a tooth for 20 seconds, the gingival index¹⁵ was determined (0 = no bleeding, 1 = isolated bleeding patches evident, 2 = blood forms a confluent red line along with the margin, and 3 = heavy or copious bleeding). The probing depth¹⁶ was calculated by taking measurements between the gingival margin and the sulcus base.

Statistical analysis

The data were entered into MS Excel 2003 and then exported to SPSS 21.0 Statistical Software (Armonk, NY: IBM Corp.). Patient sociodemographic and other characteristics were used to obtain descriptive statistics. The categorical data were compared using Chi-squared testing. The findings were evaluated using a 95% confidence interval and a significance threshold of 0.05.

Results

Patients' characteristics

Table 1 shows the demographics of 226 patients who agreed to participate in the research. 44.7 percent of respondents had completed university, and 34.5 percent did not have a monthly salary (Table 1).



Table 1: Description of the study sample at the Institute of Dental Sciences Bareilly (N=226).

Characteristics	n	%
Sex		
Male	90	39.8
Female	136	68.2
Age (years)		
18–28	76	33.6
29–39	56	24.8
40–50	52	23
51–61	27	11.9
≥61	15	5.8
Education level		
Primary school	41	18.1
Middle school	20	8.8
High school	53	23.5
University	101	44.7
Postgraduate	11	4.7
Income		
Unemployed	78	34.5
1800–2000	33	14.6
2001–2500	30	13.3
2501–3500	30	13.3
3501–5000	29	12.5
≥5000	26	11.8

Periodontal parameters

In terms of periodontal parameters, there were statistically significant differences among smokers, former smokers, and nonsmokers. In comparison to non-smokers (1.00.6) and past smokers (1.10.8), smokers had higher plaque quantities (2.780.92). The GI was analyzed to determine the extent of inflammation, which was shown to be significantly higher in the smoking groups. Smokers had a GI of 2.50.5, non-smokers had a GI of 0.50.4, and ex-smokers had a GI of 1.91.0. Current smokers had to have a higher mean probing depth (5.61.9) than nonsmokers (1.60.8) and past smokers (2.41.3) (p0.05), according to PD observations.

Patients’ understanding of the harmful effects of smoking and the importance of maintaining good dental health

The proportion of patients (84.5%) were aware of the harmful effects of smoking on oral tissues. Overall, 80.3 percent said that oral cavity health had an impact on overall health. Patients’ understanding of how oral health influences systemic health varied by educational status (p0.05) and increased with increasing levels of schooling. The majority of patients (82.2%) brush their teeth at least once a day, 40% brush twice a day, and 13.8 percent brush more than twice a day. When it came to brushing times, 36.4 percent of patients said they brush for 30–60 seconds, 16.4 percent for 90 seconds, 18.7 percent for 120 seconds, and 13.8 percent for more than two minutes.

Conversely, 83.2 percent of patients do not floss their teeth. 44.7 percent of patients said they need frequent dental check-ups every six months, 11.1 percent said every three months, and 10.6 percent said yearly.

Patients’ characteristics of smoking

Overall, 53.5 percent of respondents (n = 121) had never smoked, 38.0 percent (n=86) were daily smokers (15.210.9 cigarettes/day), and 8.4 percent (n = 19) were past smokers (18.613.0 cigarettes/day). Current smokers admitted failing to quit 68.4% of the time, 75 percent prefer not to smoke regularly in the mornings, and 73.7 percent found it easy to abstain from smoking in areas where smoking is prohibited. In terms of dual-use, 90.4 percent of participants do not use any tobacco products other than conventional cigarettes (others: electronic cigarettes 4.3 percent, water pipes 3.2 percent, Cuban cigars 1.1 percent, pipes 1.1 percent); 57.1 percent of respondents continue living with a smoker, and only 15.9% have five good friends who not smoke.

Patients’ previous experience in quitting smoking

Figures 1,2.

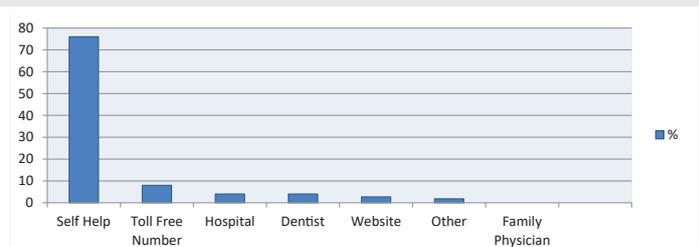


Figure 1: Patients’ prior quit attempts to support. at Institute of Dental Sciences, Bareilly (Free Cessation Call Center).

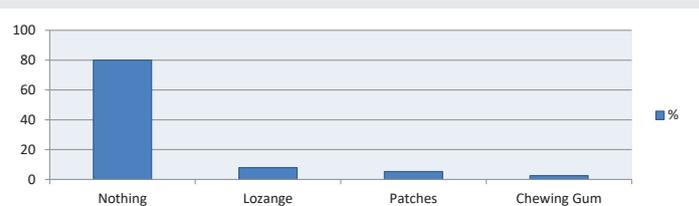


Figure 2: Patients who had previously tried to quit smoking had used nicotine replacement therapies.

Previous dental visit experiences on patients’ tobacco history evaluation and consultation activities along with patients’ expectations

About 31.6 percent of the patients’ prior dentists addressed the negative effects of smoking, and 32.7 percent of those patients were advised to quit smoking by their dentists. However, 89.4 percent of people want their dentists to enquire regarding their smoking habits (7.5 percent do not want, 3.1 percent have no idea), and 86.7 percent want their dentists to tell them to cease. Similarly, 86.7 percent of participants said they would discontinue using a dentist’s guidance (30.6 percent highly furious, 56.1 percent agree), while 8.2 percent said they had no idea and 5.1 percent strongly disagreed.

Patients' attitudes toward making positive decisions regarding quitting after receiving counseling from a dentist were agreed upon by 48.4% of participants (9.5 percent strongly agree, 38.9 percent agree, 28.4 percent had no idea, 18.9 percent disagree, and 4.2 percent strongly disagree). Moreover, only 2.1 percent 'agreed' to grasp the thoughts on a question concerning daily smoking quantity. When asked about their daily smoking quantities, 41.2 percent of respondents feel ashamed, while 39.2 percent had no negative thoughts. Patients' preferences for being asked about smoking behavior by a dentist varied significantly by age (18–24 years, the first youngest group out of 5) ($p < 0.05$), gender (male) ($p < 0.05$), and wealth (4th highest out of 5) ($p < 0.05$).

Discussion

Smoking has a negative impact on oral tissues. When it comes to periodontal health, smoking raises the presence and severity of periodontal disease significantly. Dental patients are aware of the harmful consequences of smoking on their oral health and want dentists to advise them on how to quit. Dentists are the only health professionals who can identify the negative effects of cigarette use right away. Despite the potential for easy recognition, the majority of dental professionals do not provide smoking cessation advice [8]. A brief conversation with a healthcare provider lasting 3–10 minutes increases the likelihood of smoking cessation by 1.6 times, and if the conversation lasts longer than 10 minutes, the likelihood rises to 2.3 times. Unfortunately, despite our patients' exceptional oral hygiene and willingness to listen to dialogues about quitting smoking, oral healthcare providers did not assist them in quitting.

Nicotine activates particular receptors in the brain, and these receptors have a normal nicotine level. When that amount falls, the brain begins to seek nicotine. It is critical that patients try to quit smoking on their own without the aid of any additional techniques, such as nicotine replacement, which causes them to relapse due to symptoms of withdrawal [13]. In reality, most smokers are unaware of the physiological cause of brain desire activity. They don't even realize that the more help they have to quit, the better their odds are of succeeding. Unfortunately, the majority of our patients did not receive any substitute treatments or assistance, and as a result, a substantial number of them failed. It appears that in the absence of direct healthcare practitioner aid, a smoker's chances of quitting smoking diminish under all conditions.

The most effective method of quitting smoking is to combine behavioral support with medication [14]. It is therefore crucial because clinicians can facilitate the integration of a variety of technology tools in patients' stopping attempts, such as smartphone-based cessation apps. [15]. When we inquired if they used a smartphone app to stop smoking, most of our patients were startled, which was an unusual discovery. Unfortunately, none of our patients were able to quit smoking using a phone app since they were unaware that such an app existed. Nevertheless, many of the patients stated that if the application was available, they would install it. In practice, smokers typically require several efforts to quit, perhaps as

many as 10 or more [16]. The multi-step procedure of dental settings can motivate to continue quitting smoking efforts. It's vital to note that other smokers, including family members and friends, are present in the vicinity of our patients. The face-to-face unique dialogues between dentists and patients will also help to indirect knowledge transmission to society [17]. Moreover, children who smoke light or intermittently are equally likely to quit or become larger smokers. Dentists in clinics with predominantly young patients can be one of the most powerful social influencers in preventing the onset of smoking in adolescence [18].

As a result, the reasons for dentists not taking advantage of this circumstance must be thoroughly considered. Several considerations should be examined when analyzing the reasons for the disconnect between patients' expectations and dentists' discontinuing services. According to previous studies, dentists inquire about their patients about smoking, but only around 10% of dental providers assist with quitting attempts [19]. On the contrary, our research shows that people are willing to listen to dentists' counsel. This disparity could be explained by several factors. For starters, the dentists can be short on time. This research was carried out at a dental college's TCC, where treatment costs are lower. The majority of our customers said they had a low income and had previously used similar free public dentistry services. Naturally, offering free therapy increases the number of patients seeking public assistance and reduces the amount of time allotted to each patient. Second, no matter whether the patient was treated in a public or a private clinic, the lack of reimbursement for counseling is another barrier to providing tobacco cessation [20]. Maybe, the more realistic reason than all mentioned is the dentists, and individual practices need to agree on the roles of dentists in smoking cessation [21].

Dentists are in a unique position to help people live healthier lives by including tobacco cessation programs in their regular operations. Actually, until the last 15–20 years, dentists' contribution to helping their patients quit smoking was not considered a critical possibility [22].

In recent years, only a few nations have made anti-smoking tools for dentists to use in routine dental examinations [17]. Despite repeated requests for dentists to assist patients in quitting smoking, just a few dentists implemented anti-smoking interventions as part of normal check-ups. While dentists cite different reasons for not implementing a smoking cessation program in India, such as a shortage of patient education materials or information on accessible referral options, teaching dental personnel and paying for their work must be handled first.

Conclusions

Dentists, in our opinion, are crucial in recognizing the harmful smoking has a negative impact on periodontal tissues and should implement a program to assist patients in quitting smoking. Smoking is a serious health problem with Bareilly patients, who want to be trained by their dentists on how to quit smoking, but they rarely receive practical support. In the dental healthcare setting of Bareilly, more understanding

of dentists' roles in comprehensive smoking cessation and prevention programs is required.

Limitation

Despite repeated requests for dentists to assist patients in quitting smoking, just a few dentists implemented anti-smoking interventions as part of normal check-ups. Although various reasons, such as lack of patient education materials or lack of knowledge of available referral resources, are presented by dentists, training for dental staff and compensation for their time must be first addressed, to ensure the implementation of a smoking cessation program in India.

Acknowledgment

We would like to show our gratitude to Dr. Shivalingesh KK, Professor & Head, Department of Public Health Dentistry, Bareilly for providing insight and expertise that greatly assisted this research.

References

- Mathers CD, Loncar D. Projections of global mortality and burden of disease from 2002 to 2030. *PLoS Med*. 2006 Nov;3(11):e442. doi: 10.1371/journal.pmed.0030442. PMID: 17132052; PMCID: PMC1664601.
- Jha P, Chaloupka FJ, Moore J, et al. Tobacco Addiction. In: Jamison DT, Breman JG, Measham AR, et al., eds. *Disease Control Priorities in Developing Countries*. 2nd ed. Oxford University Press; 2006:869-885.
- Zhang Y, He J, He B, Huang R, Li M. Effect of tobacco on periodontal disease and oral cancer. *Tob Induc Dis*. 2019 May 9;17:40. doi: 10.18332/tid/106187. PMID: 31516483; PMCID: PMC6662776.
- Jesus MC, Silva MH, Cordeiro SM, Kortchmar E, Zampier VS, Merighi MA. Compreendendo o insucesso da tentativa de parar de fumar: abordagem da fenomenologia social [Understanding unsuccessful attempts to quit smoking: a social phenomenology approach]. *Rev Esc Enferm USP*. 2016 Feb;50(1):73-80. Portuguese. doi: 10.1590/S0080-623420160000100010. PMID: 27007423.
- Mumcu G, Sur H, Yildirim C, Soylemez D, Atli H, Hayran O. Utilisation of dental services in Turkey: a cross-sectional survey. *Int Dent J*. 2004 Apr;54(2):90-6. doi: 10.1111/j.1875-595x.2004.tb00261.x. PMID: 15119799.
- Brown EM, Hayes KA, Olson LT, Battles H, Ortega-Peluso C. Dentist and hygienist smoking cessation counseling and awareness of Medicaid benefits. *J Public Health Dent*. 2019 Sep;79(3):246-252. doi: 10.1111/jphd.12321. Epub 2019 May 7. PMID: 31063236.
- Appukuttan DP. Strategies to manage patients with dental anxiety and dental phobia: literature review. *Clin Cosmet Investig Dent*. 2016 Mar 10;8:35-50. doi: 10.2147/CCIDE.S63626. PMID: 27022303; PMCID: PMC4790493.
- Stacey F, Heasman PA, Heasman L, Hepburn S, McCracken GI, Preshaw PM. Smoking cessation as a dental intervention--views of the profession. *Br Dent J*. 2006 Jul 22;201(2):109-13; discussion 99. doi: 10.1038/sj.bdj.4813829. PMID: 16841084.
- Paquette DW, Bell KP, Phillips C, Offenbacher S, Wilder RS. Dentists' knowledge and opinions of oral-systemic disease relationships: relevance to patient care and education. *J Dent Educ*. 2015 Jun;79(6):626-35. PMID: 26034026.
- Vogt F, Hall S, Marteau TM. General practitioners' and family physicians' negative beliefs and attitudes towards discussing smoking cessation with patients: a systematic review. *Addiction*. 2005 Oct;100(10):1423-31. doi: 10.1111/j.1360-0443.2005.01221.x. PMID: 16185204.
- Lancaster T, Silagy C, Fowler G. Training health professionals in smoking cessation. *Cochrane Database Syst Rev*. 2000;(3):CD000214. doi: 10.1002/14651858.CD000214. Update in: *Cochrane Database Syst Rev*. 2012;5:CD000214. PMID: 10908465.
- Fisher RP, Geiselman RE, Amador M. Field test of the Cognitive Interview: enhancing the recollection of actual victims and witnesses of crime. *J Appl Psychol*. 1989 Oct;74(5):722-7. doi: 10.1037/0021-9010.74.5.722. PMID: 2793772.
- Benowitz NL. Pharmacology of nicotine: addiction, smoking-induced disease, and therapeutics. *Annu Rev Pharmacol Toxicol*. 2009;49:57-71. doi: 10.1146/annurev.pharmtox.48.113006.094742. PMID: 18834313; PMCID: PMC2946180.
- Fiore MC, Jaén CR, Baker TB. Treating Tobacco Use and Dependence: 2008 Update. *Clinical Practice Guideline*. US Department of Health and Human Services; 2008.
- Matkin W, Ordóñez-Mena JM, Hartmann-Boyce J. Telephone counselling for smoking cessation. *Cochrane Database Syst Rev*. 2019 May 2;5(5):CD002850. doi: 10.1002/14651858.CD002850.pub4. PMID: 31045250; PMCID: PMC6496404.
- Chaiton M, Diemert L, Cohen JE, Bondy SJ, Selby P, Philipneri A, Schwartz R. Estimating the number of quit attempts it takes to quit smoking successfully in a longitudinal cohort of smokers. *BMJ Open*. 2016 Jun 9;6(6):e011045. doi: 10.1136/bmjopen-2016-011045. PMID: 27288378; PMCID: PMC4908897.
- Omaña-Cepeda C, Jané-Salas E, Estrugo-Devesa A, Chimenos-Küstner E, López-López J. Effectiveness of dentist's intervention in smoking cessation: A review. *J Clin Exp Dent*. 2016 Feb 1;8(1):e78-83. doi: 10.4317/jced.52693. PMID: 26855711; PMCID: PMC4739373.
- Brent LJ. Friends of friends: are indirect connections in social networks important to animal behaviour? *Anim Behav*. 2015 May 1;103:211-222. doi: 10.1016/j.anbehav.2015.01.020. PMID: 25937639; PMCID: PMC4415378.
- Clover K, Hazell T, Stanbridge V, Sanson-Fisher R. Dentists' attitudes and practice regarding smoking. *Aust Dent J*. 1999 Mar;44(1):46-50. doi: 10.1111/j.1834-7819.1999.tb00535.x. PMID: 10217020.
- Tong EK, Strouse R, Hall J, Kovac M, Schroeder SA. National survey of U.S. health professionals' smoking prevalence, cessation practices, and beliefs. *Nicotine Tob Res*. 2010 Jul;12(7):724-33. doi: 10.1093/ntr/ntq071. Epub 2010 May 27. PMID: 20507899; PMCID: PMC6281036.
- Monaghan N. What is the role of dentists in smoking cessation? *Br Dent J*. 2002 Dec 7;193(11):611-2. doi: 10.1038/sj.bdj.4801642. PMID: 12607618.
- Vendrell Rankin K, Jones DL, Crews KM. Tobacco cessation education for dentists: an evaluation of the lecture format. *J Cancer Educ*. 2010 Sep;25(3):282-4. doi: 10.1007/s13187-010-0042-9. PMID: 20186523; PMCID: PMC2923230.

Discover a bigger Impact and Visibility of your article publication with Peertechz Publications

Highlights

- ❖ Signatory publisher of ORCID
- ❖ Signatory Publisher of DORA (San Francisco Declaration on Research Assessment)
- ❖ Articles archived in worlds' renowned service providers such as Portico, CNKI, AGRIS, TDNet, Base (Bielefeld University Library), CrossRef, Scilit, J-Gate etc.
- ❖ Journals indexed in ICMJE, SHERPA/ROMEO, Google Scholar etc.
- ❖ OAI-PMH (Open Archives Initiative Protocol for Metadata Harvesting)
- ❖ Dedicated Editorial Board for every journal
- ❖ Accurate and rapid peer-review process
- ❖ Increased citations of published articles through promotions
- ❖ Reduced timeline for article publication

Submit your articles and experience a new surge in publication services (<https://www.peertechz.com/submission>).

Peertechz journals wishes everlasting success in your every endeavours.