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Awareness of Medicinal Applications of Piper nigrum among Dental Students

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ABSTRACT

Black pepper includes the many commonly used ingredients upon this planet, remarkable for some of its potent component piperine. White pepper is made with closely related species, while black pepper is prepared by fast processing and wind drying of underripe natural products, white pepper is made from dried, regular and ready-mixed seeds. Piperine has been the conventional biologically active conjugate of Piper nigrum and Piper longum, having been taken into consideration for therapeutic effects. The purpose of this survey was for assessing the awareness of medicinal applications of Piper nigrum amongst dental students. A cross-sectional survey was done with a self-administered questionnaire with 10 questions circulated among 100 dental students. The questionnaire assessed the awareness about Piper nigrumtherapy in medical applications, their immunomodulatory properties, antipyretic properties, antispasmodic activity, anti-inflammatory activity, and its mechanism of action and side effects. The responses were recorded and analysed. 16% of the respondents were aware of the medical applications of Piper nigrum therapy. 11 % were aware of the anti immunomodulatory activity of Piper nigrum therapy. 9 % were aware of antipyretic properties of Piper nigrum therapy. 13 % were aware of antispasmodic properties of Piper nigrum therapy. 10 % were aware of anti-inflammatory properties of Piper nigrum therapy. 6 % were an aware mechanism of action and side effects of Piper nigrum therapy. The awareness about the use of Piper nigrum therapy in medicinal applications is low among dental students. Increased awareness programs and sensitization and continuing dental education programs along with greater importance to the curricular modifications, can further enhance knowledge and awareness about Piper nigrum therapy.

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INTRODUCTION

Black pepper includes the many commonly used ingredients upon this planet, remarkable for some of its potent component piperine. White pepper is made with closely related species, while black pepper is prepared by fast processing and wind drying of underripe natural products, white pepper is made from dried, regular and ready-mixed seeds (Dyer and Palmer, 2004). Piperine has been the conventional biologically active conjugate of Piper nigrum and Piper longum, having been taken into consideration for therapeutic effects for having immune

modulating, anti-cancer, antiasthmatic, hepatoprotective, anti-inflammatory, antimicrobial, and anti-ulcer activities (Bai and Xu, 2000; Darshan and Doreswamy, 2004).

It also has antioxidant and biotransformation effects and has been shown to improve the absorption of drugs such as rifampicin, sulphadiazine, tetracycline and phenytoin. In the ancient Asian clinical setting of Ayurveda, both kinds of peppers were used to control diabetes and to stimulate the CNS, such as antispasmodics, tonics related to the stomach, haematopurifiers, and antipyretics. Pepper is known for some popular formulations designed to boost the potency of other bioactive mixtures, such as vasicine and curcumin (Lee *et al.*, 2001; Yang *et al.*, 2002). The purpose of this survey was for assessing the awareness of medicinal applications of Piper nigrum amongst dental students.

MATERIALS AND METHODS

A cross-sectional survey was done with a self-administered questionnaire with 10 questions circulated among 100 dental students. The questionnaire assessed the awareness about Piper nigrumtherapy in medical applications, their immunomodulatory properties, antipyretic properties antispasmodic activity, anti-inflammatory activity, and its mechanism of action and side effects. The responses were recorded and analysed.

RESULTS AND DISCUSSION

16% of the respondents were aware of the medical applications of Piper nigrum therapy (Figure 1). 11 % were aware of the anti immunomodulatory activity of Piper nigrum therapy (Figure 2). 9 % were aware of antipyretic properties of Piper nigrum therapy (Figure 3). 13 % were aware of antispasmodic properties of Piper nigrum therapy (Figure 4), 10 % were aware of anti-inflammatory properties of Piper nigrum therapy (Figure 5), 6 % were an aware mechanism of action and side effects of Piper nigrum therapy (Figure 6).

Pepper is a loaded source of various organically dynamic constituents, monoterpenes, sesquiterpenes, and other unpredictable mixes. The different wellbeing gainful utilization and uses of P. nigrum have been perceived by testing on cell, creature, and human subjects. They have numerous potential restorative applications as an immune modulator, energizers, hepatoprotective agent, anti-inflammatory agent, antioxidant, antiamoebic,anti-cancer-causing, anti-ulcer, antibacterial, antifungal, antihyperlipidemic, and antiasthmatic. They addi-

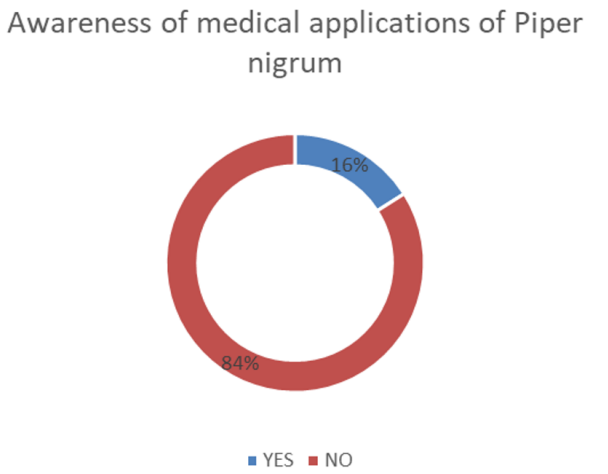

Figure 1: Awareness of medical applications of Piper nigrum

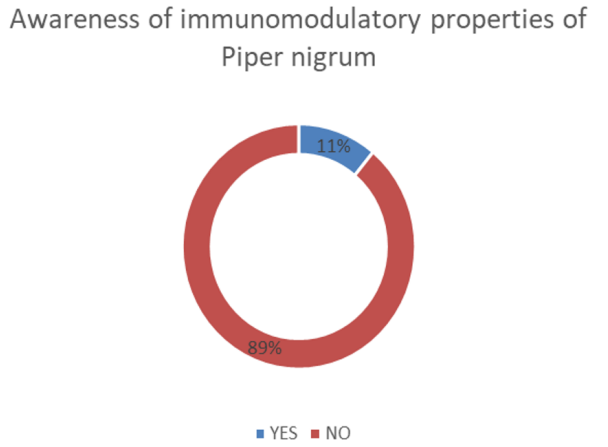

Figure 2: Awareness of immunomodulatory properties of Piper nigrum

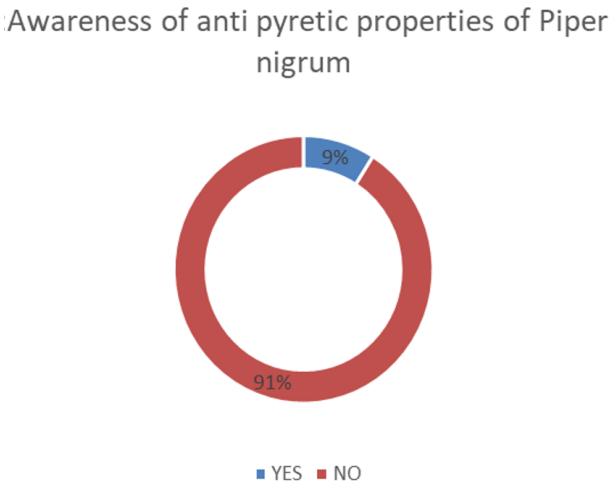

Figure 3: Awareness of antipyretic properties of Piper nigrum

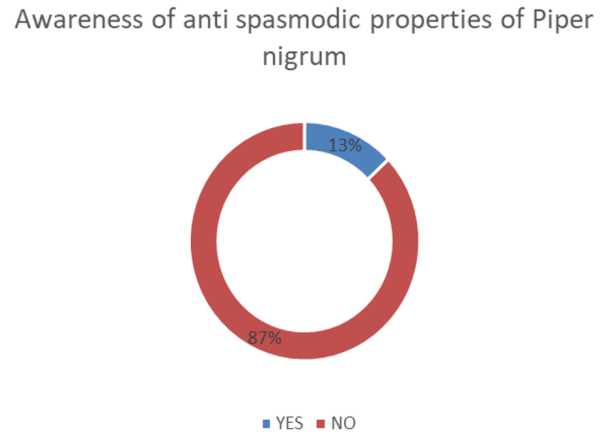

Figure 4: Awareness of antispasmodic properties of Piper nigrum

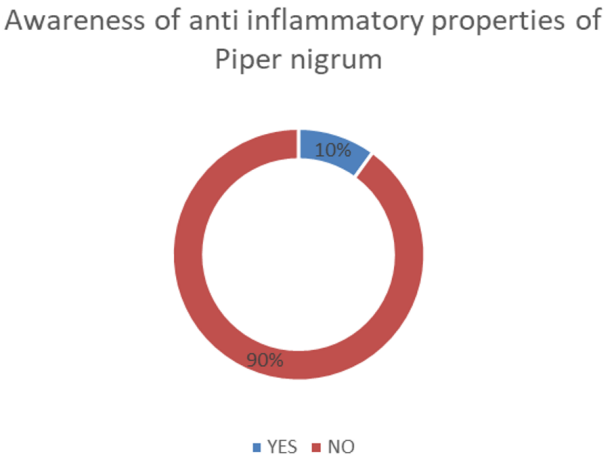

Figure 5: Awareness of anti-inflammatory properties of Piper nigrum

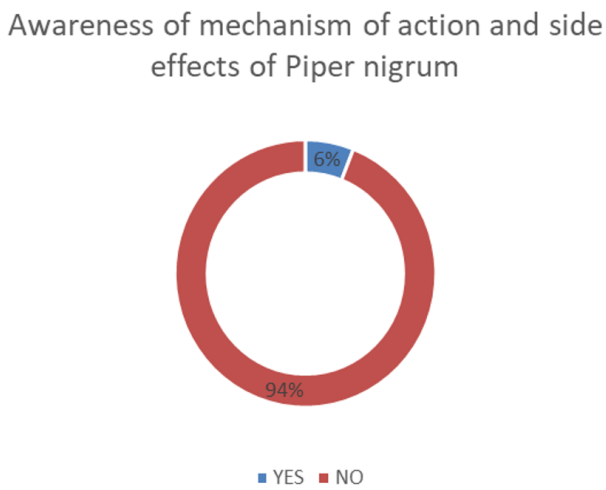

Figure 6: Awareness of the mechanism of action and side effects of Piper nigrum

tionally found to have upgraded bioavailability of food, drug, anti-cancer-causing agent, and phytochemical just as to advance effects on drug-utilizing catalysts. They biotransform the metabolite and lessen food development and ingestion time and furthermore do lipid digestion speeding up and lipid peroxidation (Meghwal and Goswami, 2013; Reddy *et al.*, 2004).

Current science has indicated the atomic reason for the pharmacological attribute of black pepper against human infections, and some clinical preliminaries have shown the security and viability of pepper in the human subject. Piperine is the major impactful alkaloid existing in P. nigrum L., along with chavicine, its stereoisomer, which is gradually changed to piperine on capacity, prompting a misfortune in sharpness (Srinivasan, 2007). Pepper and its resin are valued fixings in prepared nourishments as they have helpful seasoning properties and forestall microbial defilement and biodeterioration. Gas chromatography (GC)- mass spectrometry and refining extraction investigation of P. nigrum indicated that vinyl mixes are the most predominant volatiles present in pepper (Jagella and Grosch, 1999).

Customary utilizations P. nigrum is utilized in the treatment of help with discomfort, chills, ailment, influenza, strong hurts, colds, weariness, fevers, nerve soother, to build dissemination of blood, increment the progression of salivation, animate hunger, and to support peristalsis (Tucker, 1999). Black pepper, along with ginger, are elements of 'Trikatu', a significant old Ayurvedic recipe despite everything utilized for stomach related purposes (Chen *et al.*, 2011; Lianzhong *et al.*, 1998).

The impact long pepper are for the most part because of the nearness of piperine, a diuretic, carminative, sialagogue, anti-asthmatic and energizer. It additionally has a wide range of antimicrobial action (Jin *et al.*, 2009). Remotely, the oil is utilized as anti-rheumatic, rubefacient and lozenges for sore throat. A portion of these utilizations have been bolstered by exploratory outcomes. However, present-day research is currently progressively focussed on the utilization of pepper as medicaments and antioxidants for the avoidance of degenerative issue and as bioaccessibility enhancer for different homegrown drugs (Jin *et al.*, 2009; Sarnaizul *et al.*, 2013).

CONCLUSION

The awareness about the use of Piper nigrum therapy in medicinal applications is low among dental students. Increased awareness programs and

sensitization and continuing dental education programs along with greater importance to the curricular modifications, can further enhance knowledge and awareness about Piper nigrum therapy.

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Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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