

The Factors that Affect the Work Environment of a Dentist inside the Dental Clinic

*** Vindha Paul**

**** Dr.C.S.Ramanigopal**

* Research Scholar, Faculty of Management Studies, Vinayaka Mission University, Salem, India.

** Professor and Head, Faculty of Management Studies, Vinayaka Mission University, Salem, India.

Abstract

In a globalized world of cut throat competition the survival of any dental clinic depends on the performance of the dentists. This requires designing enriched forms of occupational environment for increasing the job satisfaction and improving ergonomics. Effective practices of improving the work environment have a positive influence on the occupational health, performance and job satisfaction of the dentist. Work environment can be identified as the place that one works. Setting up the dental clinic in an appropriate environment is bound to influence the work life of the dentist and hence the work spot must be located in an apt and conducive environment. The work place should help free flow of work and free movement of the dental staff. If there is no sufficient work space, there will be unnecessary movement of staff and cause delay in completion of work schedule, resulting in crowded and cramped work space creating an adverse psychological impact on the dentist. The dental staff must be routinely reviewed on how important professionalism and demeanor is to a patient's perception of the dental clinic. Dental instruments must be stored in sealed paper pouches and kept in a storage area which contains a separate enclosed storage for sterile items and single-use disposable items. Instruments and dental supplies must never be stored under sinks or in wet areas. Holders must be used to insert and remove sharp instruments to minimize the risks of self-injury. The dental practitioner must be constantly aware of the risk of exposure to blood-borne infections during dental procedures with needles and drilling instruments and tools such as burs and drills. The dentist a pivotal personality in the dental sector organization performs his dental procedures within the context of his relevant environment. This study is exploring the various factors that are going to influence the occupational environment of the dental professional inside his dental clinic like locality, ambience, dental staff, instruments, dental chair, noise, ventilation and lighting which will eventually have an impact on his improved performance and job satisfaction.

Key words: Environment, Health, Ergonomics, Postures, Hearing loss, Work performance, Job satisfaction.

Introduction

An ideal work environment inside a dental clinic shall be one in which the job done within are required to fit the dentist as well as technology. It is humanization of work which is most advantageous when it comes to providing the best fit among the factors which have an influence on the physical work environment of the dentist.

The work environment consists of all the factors which have direct or indirect bearing on the mind and body of the dentist. All the varied factors together form the physical work environment of the dentist. These conditions are stimuli that can cause good, bad or indifferent responses irrespective of whether these are found to be consciously acceptable or objectionable. They are definitely factors that breathe life into the performance of the dentist.

A good physical work environment increases his efficiency and ultimately leads to bolster productivity and meticulously maintained physical work environment leads to improved commitment and maximized output.

Factors affecting the Physical work environment of the dentist

The physical work environment of a dental professional consists of conditions such as

Locality

There is a lot more involved in choosing the locality to set up the dental clinic and one of the primary concerns of the dentist is to set up his dental hospital at a clean and elegant locality which is always a dream of any dentist. The entranceway can give the clinic a distinctive touch and character for it is a transition from the outside to the inside of the clinic. Setting up the clinic in a spot where every beholder can view would be the right option. Being situated in a niche area and yet radiating serenity and confidence to the patients who walk into it is the hallmark of a successful dental hospital. The locality where the clinic is going to be established is very crucial for the growth that the dental clinic will encounter in its later stages and will be the most powerful factor of success for the dental set up and so it must be put up near a noticeable place that equips the public transport and in an area that is very densely populated for most part of the year. Not many a dentist is able to find a place for his dental clinic in an appropriate and busy locality. Such dentists get to start their dental clinic in unsophisticated and quiet localities. For such dentists a negative working environment awaits each time they enter into the street in which the dental clinic is established. It is a dire necessity for the dentist to be aware not only of the locality but also the neighboring shops. If the dental clinic is situated in the upper floor, then the shops that are situated of the ground floors by which the dentist and the patients must pass to reach the dental clinic should be pleasant and clean for the work environment of the dentist starts much before he even enters the dental clinic.

Ambience of workplace

A dental clinic must not have a boring hospital like ambience but must be one that is fashion forward and cool. So apart from finding a busy and exclusive locality, a dentist should also keep in mind the importance of finding a place with sufficient work space for freedom of movement, as his work involves a lot of moving around for procedures like lab work, taking x-rays, processing them, dental materials manipulation, etc. the physical design of the work place that constitutes a major part of the work environment should be planned carefully. A spacious dental clinic is a boon to any dentist but rarely is he able to find such a place in an opulent locality. Only a few will be able to afford a spacious place in a sophisticated locality. Due to huge rental costs and high investment many dentists are succumbed to go in for smaller clinics in a sophisticated locality or a spacious clinic in an unsophisticated and quiet locality. Though having a dental clinic in an elegant and busy locality, if the working space is small, it will turn out to be intriguing and congested for the dentist in the long run thereby affecting his physical work environment leading to poor work performance.

Dental staff

Dental staff members must have a professional appearance because how the staff appears to the patients is as important as their customer service and the ambience of the clinic. The dental clinic being more aesthetic prone should have highly educated staffs who are smart, friendly, understanding, and passionate with an open mind set with good communication skills. They should be creative, dedicated, have flexible attitude and impressive personality. They should greet every patient with spontaneous smiles and have calm and helpful attitude. An understanding and professional approach can help inspire trust and ease the patients with positive and helpful experience visiting the dentist. They should behave with each other showing politeness, honesty, mutual respect, discuss, cooperate with each other and follow the procedures in the right spirit. Each staff may have a task to accomplish and each may have a different view of how things are done. In case of conflict in approaches to doing things, the right way is to respect each other, discuss differences and acknowledge alternate views. Emphasis on values, integrity, discipline and dress code would ensure a positive working environment for the dentist as the dental staffs have an important role to play in the work environment of the dentist.

Dental Instruments

Due to the high profile of dentistry regarding transmission of infection, the global literature focuses on prevention, appropriate management of potentially infected materials and strictly controlling infections. The instruments used in the dental clinic must be

sterilized carefully in high temperature thermal systems like an autoclave, steam pressure sterilization, flash sterilization, glass bead sterilization or in cold sterilization for twenty minutes before every use to prevent infections spreading from one patient to another and also to prevent infections to the dentist who is handling them on the patient. The microbes cause contamination, infection and decay and can penetrate the skin while performing dental procedures like through a needle wound created while imparting anesthesia, through a cut on the skin from sharp instruments or an accidental biting by the patient. HIV, HBV, HCV can spread through needle stick injuries. Use of safety syringes although costly would be a better choice to prevent the risk of exposure to needle stick injuries. Dental staff must be trained on the hazardous effects of re-using disposables if these contaminated instruments and devices are subsequently left for the dentist to re-use them again, they are creating an unhygienic work environment for the dentist.

Dental Chair

Nowadays the dental chairs are manufactured with the latest state of the art features and advanced technologies which provide maximum comfort for the patient reclining in it. The comfort of the dentist becomes highly questionable here. Dentists work with a small degree of arm elevation and external rotation generating high muscular load to both trapezius muscles and dominant extensor-Carpi-radialis muscle and low load on the infraspinatus muscle. Studies indicate that there is a relationship between the biomechanics of sitting and treating the patients for long durations in a particular position and repeated unidirectional twisting of the trunk can have very painful effects leading to musculoskeletal disturbances. Like any other health care personnel, musculoskeletal complications very much prevalent among the dentists and is well documented. Sitting position among the dentists is much more common than treating the patients while alternating between sitting and standing and this induces more severe lower back pain and leads to higher chronicity than any other complaint. Because of the strained postures that the dentist has to adopt during the eight to ten hours that he works a day, often lands him up with severe chronic back, shoulder pain and musculoskeletal disorders including repetitive-motion disorders. Studies suggest that postures which exert higher pressure on the intervertebral disk as well as prolonged spinal hypo mobility are important factors which lead to degenerative changes in the lumbar spine and subsequent pain in the lower back. Back pain, cervical pains, pain within the shoulder and upper extremities are due to the postures that a dentist assumes during the treatment procedures with the neck bent and twisted, repetitive and precise movements of the hand with arm abducted. Treatment procedures like extractions cause stress on the elbow and wrist joints which result in chronic tendon sheath inflammation which eventually leads to overstress of the spine and limbs producing a negative effect on the peripheral nerves of the upper limbs and the neck nerve roots. OSHA and many experts feel that ergonomics can prevent work-related musculoskeletal disorders. A dentist can achieve higher levels of job satisfaction by practicing dentistry in the ergonomically best way.

Noise

Noisy dental clinic will definitely have a negative impact on the work environment of the dentist causing pathophysiology of occupational noise induced hearing loss which nowadays has become a well-known issue. This may not be symptomatic but the first complication and the reason to go in for a hearing evaluation could be tinnitus which is an early sign of hearing loss. The variety of factors influencing the natural susceptibility of hearing impairment in dentists are high speed turbine hand pieces, ultrasonic instruments and cleaners, low-speed hand pieces, vibrators and other mixing devices, high velocity suction, model trimmers and air conditioners. Studies indicate that in a dental clinic the noise generated by dental equipment like dental hand piece, amalgamators, dental laboratory machines and high speed evacuation devices produce noise levels below 85db and up to this point the risks to hearing loss is negligible. Although care must be taken to avoid using old and faulty equipment and this could increase the risk to hearing loss. Machines like compressors and generators which cause a lot of noise and vibrations should be installed in a separate room on proper mounting to reduce the noise and vibrations. Such noises can be a potential threat to the auditory system of the dentist. According to

The National Institute of Occupational Safety and Health (NIOSH), noise induced hearing loss stands among the top ten work-related problems.

Ventilation and Air Quality

Ventilation and ambient air quality of the dental clinic should be one of the important design considerations to provide a safe physical work environment for the dentist as it is an important factor in patient therapy and infection control. Appropriate ventilation and air quality affects both the physical and psychological health of dentists. Ventilation systems supply fresh air and extract the polluted air from the dental clinics to prevent cross contamination. The contaminated air has to be expelled outside and provisions to allow inflow of fresh air should be made. Workspace partitions, furniture and equipment placement must be designed in such a way that there is proper ventilation. In the clinic heat from the human body, carbon dioxide, bacteria are continuously discharged during breathing and treatment procedures, contaminating the air inside the dental clinic as it is of prime importance to have ample ventilation and free circulation of air. Poor quality of air can cause headaches, fatigue, nausea, dizziness, skin, nose, and throat and eye irritation. Ventilation air dilutes the airborne infectious agents and can be effectively removed if the HVAC systems (heating, ventilation and air-condition systems) are adequately designed and maintained. Airborne materials generating from dental procedures can have adverse health effects as these infectious particulates may be inhaled if personal protective equipment are not used by the dentist as suggested in the guidelines of the American Dental Association. Studies suggest that ventilation systems should be such that it maintains adequate airflow from clean to dirty space outlets and air purifiers can be used to control dental procedures that generate the risk of exposure to aerosol dispersion. This can make a potential difference to the occupational health of the dentists. The National Institute for Occupational Safety and Health (NIOSH) has recommended the use of air particulate filter for filtering particles with an efficiency of more than 95% and thereby contributing to ambient air in dental environments. Regular and routine maintenance should be undertaken so as to prevent the HVAC system from using energy ineffectively and thereby lowering the risk of breakdown and spiraling cost for the dentist and also preventing discomfort and exposure to airborne contaminants. The significance of the quality of air is phenomenal and has far reaching impact on the comfort, health and job satisfaction of the dentist.

Lighting

The light fitted in the dental clinic and the dental operatory light should be so designed that it should be elegant and add an extra value to the dentist's environment and enhance the client's experience. The dental clinic must be well equipped providing the right visual comfort so that the dentist can work in complete comfort with minimum of eye strain and physical fatigue and which will enable him to deliver high quality dental care and enhanced work performance and productivity. Each and every corner of the mouth must be clearly visible and so the light provided should be of sufficient quantity, consistency and quality rendering good vision and proper posture to the highest possible extent. Dental procedures involve a lot of close detailed work inside the patient's mouth and poor lighting can cause eye strain, discomfort, poor outcome of the work done and lack of job satisfaction.

Conclusion

An appropriate occupational environment should ensure the greatest ease of work life and removes all causes for unhealthy, unhygienic, pressurized, infectious, hazardous, cumbersome, fatigue and discomfort of the dentist. A good work place is something that is perceived and experienced. The dentist must apply ergonomics in designing his work place that will in turn facilitate him with a healthy work environment for improved efficiency and job satisfaction. Dental treatment involves a lot of intricate work requiring high levels of concentration more often on a single tooth and so the dentist's chair must be designed in such a way that it must take care of the ergonomic requirement of his body. It must provide the necessary support to his back and spine. Sudden and intermittent loud noises of compressors and continuous noises and exhaust gases from generators will be an irritation and distraction, interfering with the concentration of the dentist attending the patient and hence must be considered during the design of the work place. The air quality in a dental

clinic should be such that it provides fresh air which must be virtually free of dust, dirt humidity, virus, microbial contaminants like bacteria and combat odors and dilute microorganisms. Good lighting improves efficiency, accuracy, improved output and provides for aesthetic satisfaction for the patient. This will enhance the quality and quantity of work performance and in turn give him a thriving practice. The conditions, situations and circumstances that surround the dentist in the workplace are capable of affecting and influencing his good health, work performance and job satisfaction. Therefore if there is congruence between the dentist and his physical work environment, his competency will be maximized and his output will be resplendent. This study has examined the different factors that affect the physical work environment of the dentists and there is a need for more study in this area.

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