55 - ANALYSIS OF THE OCCUPATIONAL DISTURBS PREDOMINANCE'S OF MUSCLESKELETICAL ORIGIN'S IN DENTISTRY GRADUATION COURSE ACADEMIC'S: CONSIDERATIONS WITH PREVENTIVE APROACH TO LER/DORT.

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Introduction

Occupational Disturbs have been constituted as a great public health problem in a great deal of development and industrialized countries. The increase of the diseases incidence's linked to the work has been devastating the society, It did not do distinction between professional categories, sex or age. It was checked in the Dentistry graduation course's, in much young academics, that are starting the career, they are presenting early complaints or pains regarding to the applicated activities of clinical vocational teaching.

Occupational characteristics and the professionals report's are sufficient factors for inclusion of the surgeon-dentist in the main group of muscleskeletical disturbances risk (REGIS FILHO, 2000).

Another fact to be emphasized is the inadequacy of the operator / equipment, which obliges the professional to assume incorrect work postures (REGIS FILHO, 2000). This fact, when applied to Dentistry Course academics, it considers parallel factors like: incompetence in the gestual and inexperience of the pupil when relationship to a professional, The academic inexperience's of the Dentistry Course brings to the student and to the patient a bigger expense of time for the realization of the proceeding, an increase in the consumption of work material's and also a extent exhibition to risk factor's of occupational diseases (MATHEUS et all.,2000).

In accordance with NUSA / MG (Nucleus of Reference in Occupational Diseases of the Social Previdence/ Minas Gerais), “The age group where bigger demonstration of LER/DORT takes place is between 20 and 39 years old” (ANDRADE, 2000). These data confirm the necessity of studies and analysis of the conditions of academics work-apprenticeship from the Dentistry Course, which composes the age group considered by NUSAT, as the bigger sensitivity to the LER/DORT. These restriction can become a limitation factor's or professional compromising of these young, future Surgion - Dentists.

METHODS

This work was characterized like a analytically epidemiology studying , with parliament of the cross type, so it checks the conditions at the moment of the interventions, studying the predominance of a tendency to DME (muscleskeletical disturbances), in a specific population.

The sample was chosen in the intentional form, being the participants just fourth degree Academics of the Dentistry Course in traineeship in the Integrated Clinic of the UNIPAR, in the Umuarama city. This study proposed to identify the tendency and the biomechanics casuistry, made a list to the difficulty in the gestual and unsuitable postures, referring to the occupational disturbances. In this study there were not carried out physiologic measurements (effort, postures, muscular or nervous activity), for analysis the factors that influence the occupational disturbances appearance. Also there were not achieved the measures of the environmental conditions of work like: noise, room temperature's and brightness level.

The data was collected out through a questionnaire containing social demografic informations, ergonômics work aspects and the pain map and relative discomfort by the service. In a next stage photo register were carried out, through photography and filming, of the principal complaints referring to the difficulty in the gestual and in the clinical proceedings with pain and discomfort postural report. The images and the posturais data were analysed through the methods MRI (Intervals of time Register Method) and RULA (Rapid Upper Limb Assessmet).

RESULTS

80 questionnaires were applied, were 40% was answered by male academics, and 60% of it were answered by femal academics, with average of age of 23 years old, with variation between 19 and 26 years old. 61% reported not to practice physical activity and 39% reported to carry out physical activity, about these all, 32% practice activities three times weekly, 20% twice weekly, 16 % more than three times weekly and 16% once weekly.

Studies reveal a tendency to the femal odontology professional's increase, this fact presents a special meaning, so, second Nogueira (1983) there is a bigger inclination to the incidence of LER/DORT in femal surgeon-dentists. Regis Filho (2000), achieved a inquire with ex-academic's of the Dentistry Course from UFSC, in 1996, also boarded the subject and he reached similar results, fact that did with he reported a change in the professional profile along the 90 decade's, regarding the sex, with a bigger search for the Dentistry profession for part of the women regarding the men.

In the specific case of this inquiry, the studied population is composed in its majority by young women, with middle age of 23 years old. Studies of the Nucleus of Reference in Occupational Diseases of the Social Previdence of Minas Gerais NUSAT, in inquiry carried out between 1994 and 1996, shows that 70% of the attended persons was in the age group between 20 and 39 years old. These data confirm the necessity of intervention near the university population and also it show that the occupational disturbances attack principally individuals in the height of their physical energy and productive capacity, and that this is not a problem exclusively of health, but also a problem economical-partner, since it compromises the age group of the population in an economically active period.

The inquiry also considered the academic knowledge's on the correct adaptation of the equipment for the service, in practical classrooms and traineeships curriculum of the Dentistry Course. 66% of the interviewed reported to have informations about the subject, being that 53,54 % of the interviewed reported not to apply the technical knowledges for the adaptation of their equipamentos to the realization of the clinical service; this is a factor that contributes to the inadequacy postural during the professional exercise. This subject was boarded by Genovese, (1991); that identified the incorrect mocho tuning, like insufficient height, It being one of the main causes of back pain in surgion-dentists.

The main work position adopted by the academics was sitting, according to report of 100% of the inquiry participants. Telling the position of work, in accordance with the scheme ISO/FDI, the main adopted position for the realization of the services still was of 9o'clock, with 45,31% of the preference and the second is the position 11 o'clock, with 28,12%. These results, when compared with the Kosmann (2000) considered show an inversion of preferences, where 52% of his sample reported preference for the 11hours work position and in seccond the 9o'clock position and at third place the 7o'clock

position with 1% of the preference. However, this inquiry was carried out by professionals, fact that allows us to suspect that the preference for the 11o'clock work posture, according to the scheme ISO/FDI, is resulting from the counting of technique of work and professional experience when in spite of spending years of acquired clinical acting.

For Mendes, (2001); Couto, (1998), there is a narrow correlation between the occupational disturbances with the work properly stated, It being substantiate factors for the determination of this process, about gestual and the posture adopted for It's execution.

The difficulty in clinical service corret position was reported by 73,43% of the interviewed, of this 23,43% regarding to the realization of the periodontics proceedings; 17,18 % during endodontics proceedings; 14,06% during exodontics proceedings; 10,93 % dentística; 7,84 % others and 26,56% of the answers were considered unsuitable or unsatisfactory for use of the data.

When was analysed the gestual difficulty or position for the realization of a clinical specific proceeding, 41% of the participants established this relation, 21,42% reported difficulty in the realization of all clinical proceedings. It was revevant fact and It deserves a special attention of all professionals and institutions wrapped in the odontólogists professional formation, It has seen, the activity characteristics, that It demands manual skill, precision of movements with great restriction to the access, handling and visualization in the place of work. Besides this, the inadequacy or adaptation difficulties of the academics to an equipment should contributing and/or aggravating this difficulty. Pece apud Regis Filho, (2000); reported that are not uncommon cases of inadequacy Dentistry between the professional and the equipment, according to the author It oblige the professional to assume incorrect work postures; consequently in the task execution would occur microtraumatics, whose the addiction could cause the odontologic tecnopatias, between them LERs/DORTs.

Again we emphasize that 80% the investigated sample presents pain and discomfort complains and these, 100% identified factors that according to them contribute or aggravate the reported complaints. Of this 37,5 % identified the adoption of unsuitable postures during the realization of the clinical service like being the main cause of the symptoms aggravation's for them reported; 20,83% established relation with the material weight for them transported; 10,41% with the realization of physical activity and the same percentage, 10,41 % also for the work without helping. The second main aggravation cause of the symptoms, second the professional-academics It is concerned with the transported material weight and it is worthwhile to point out that 58,75% of the sample is composed for famel academic, however since it was already previously explained, this one is not an isolated fact but It is a new future professional profiles, so on, this also is another point to be thought by the institutions that offers the Course.

The pain and discomfort map's showed that inside the total sample, 80% of the individuals already reported to have felt pain or discomfort in one of the regions of the body mentioned in the questionnaire, Its being that the frequency of the complaints regarding the body segment were: shoulder and escapular region 84,33%; low back spaine 75%; neck 67%; fist 62,75%; Thoracic spine 53%; knees and legs 47%; hand fingers 43%; elbow and forearm 26,56%; ankles and feet 25%.

The Second stage of the discomfort or pain map's were carried out only in individuals who presented or present pain or discomfort in the last three (3) months, period It that corresponds to the beginning of the academic 2002 year and the beginning of the traineeship curricular in the integrated clinic. Fact that attracted attention was unanimously the report was of pain simptoms or discomfort in previous times, also they told the symptoms in the last three (3) months. As result obtained the next frequencies of complaints distribution for body segment: Thoracic spine 67%; shoulder and escapular region 60,93 %; low back spine 58%; neck with 55% ; hand fingers 35,93%; fist 26,56%; knees and legs 14%; ankles and feet 13%; elbow and forearm 12,5%; other complaints 0 %. Each item refers to 100%, in other words, the informations are not excludentes (Table 01).

TABLE 01 distribution of the pain / discomfort reported by the academics.

1 **BODY SEGMENT**	PAIN OR DISCOMFORT DURING SOME PERIOD (%)	PAIN OR DISCOMFORT DURING LAST 3 MONTHS (%)
2 **Neck**	67,00	55,00
Shoulder/Escapular Region	84,33	60,93
Elbow/forearm	26,56	12,50
Fist	62,75	26,56
Hand fingers	43,77	35,93
Thoracic spine	53,00	67,00
Low back spine	75,00	58,00
hip/ thigh	14,00	6,00
kness/ legs	47,00	14,00
Ankles/ feet	25,00	13,00
Others	0,00	0,00

Professional-academics that reported pain or discomfort, 100% established relation between the symptoms appearance and the period of the service journey. It being that 4,68% of them connected with the beginning of the service journey, 31,25% from the way of the service journey and 51% made a list of the symptoms appearance with the final period of the clinical service. Grandjean, (1998); makes a list of the pain unleashed by the professional exercise to the necessity of maintaining the body in determined position that following the author; they are much more solicited than the dynamic strength.

Another analysed point was the number of patients attended by each academic, during each period of service in the integrated clinic. 84,37% of the sample reported to attend one (1) or two (2) patients. The time of permanence time in the integrated clinic was from three to five hours, however, the time average of realization of the effectively clinical proceeding's was 90 minutes, for each clinical proceeding. Realized an excess of time that wraps proceedings preparation and execution, or better, just one proceeding, fact that demands long periods in the sitting posture, and also it determines a bigger demand of isométric musculature contraction, It favoring the vascular compression and adoption of uncomfortable postures for extended periods for the activity realization. These factors when analysed from the physiologic and biomecânic point of view determine the physical overload that favor the occupational disturbances appearance. These demand postures of the muscleskeletical system, It resulting from the necessity of the maintenance postural for long periods, are interpreted like postures of risk or unfavorable, It being able to lead to the development of muscleskeletical disturbances.

Through the Interval Repetition Method (MRI) was analysed the images of the complaint clinical proceedings, done in the sixth stage of the work, which allowed the identification of the unsuitable postures carried out with bigger frequency for the professional-academic. They were nine postures of risk identified and analysed in the next stage for the MRI applications program. For Laville, (1977); posture is a physical segments organization in the space, (FAGUNDES, 1999). Dul & Weerdmeester, (1999); present like example of bad postures, situations where the articulations are not in neuter position: raised arms, lifted or not supported legs, lowered head and inclined trunk.

The identified and subsequently analysed postures were: cervical spine flexing (CC-flex.); cervical rotation (CC-rot.); cervical side flexing (CC-inc.); trunk flexing (CT-flex.); trunk rotation (CT-rot.); trunk side flexing (CT-inc.); shoulder abduction above 45th (abd. shoulder. 45º); support of the low back spine (CL-support); plantar support in the ground (ap. to plant).

The analysis of the clinical proceedings of position and gestual difficulty was applied through the method RULA

and they obtained the next results: Proceeding of endotontics, MS-D, 7 and MS-E, 6; restoration, MS-D, 7 and MS-E, 6, clinical Proceeding carried out in the superior subsequent arcade, MS-D, 7 and MS-E, 7; clinical Proceeding: exodontics 7 for MS-D and 7 for MS-E, clinical Proceeding: splinter (periodontics) 6 plows MS-D and 7 for MS-E. The obtained results showed that in all the proceedings analysed the postures adopted for his realization were considered according to criteria of the method like unacceptable, since they presented final scores above 2. This score corresponds to work acceptable postures, since they are not repetitive for long periods of activity. The final obtained scores were 6 and 7, what which following McAtamney & Corlett (1993), the first one corresponds to the postures of work, where the operator carries out repetitive movements and / or muscular static activity; and the second one corresponds to postures of work that take place very near of the end of the movement way, where the repetitiveness and the strength are necessary.

CONCLUSION

From the results obtained it was clear that there is still a predominance of DME in the period of professional formation near the academics of the Dentistry Course. It was noted that the bad postures adopted for the tasks realization are more obvious in academics; pain and discomfort complains are reported by more than 80% the investigated population. Be for the specific difficulty in the realization of each proceeding, or be still for the inexperience and manual incompetence of the academic-apprentice or for the difficulty of visualization of the region of work; there were identified high connected rates of pain and discomfort to the work posture, in academics of the Course of Dentistry, it confirming when it resulted from inquiries carried out with professionals when were found up to twelve times levels of occupational incidence of disturbances that checked in other liberal professionals of the health area, (figlioli, 1996).

Another observation of great importance, done by this inquiry, was to identification of the odontological proceedings (clinic area determined) that they present bigger incidence of complaint and difficulty in realization for the academics and the establishment of relation between the above-mentioned symptoms and the execution of these clinical proceedings. The principal proceedings identified by the academics like being of difficulty or discomfort during the realization were respectively: periodontics, endodontics, exodontics, dentístic and proceedings carried out in the subsequent superior arcade of the patient.

The results obtained in this inquiry show the existence of a small variation of biomechanic attitudes for the clinical proceedings realization pointed as the bigger difficulty and causes of discomfort postural. The analysis of these situations of work through the MRI and RULA methods allowed the quantificação of the overload postural identified. As results there were produced the maximum scores, of the method RULA, what determines urgency of ergonomic intervention in all the proceedings, with the idea that these postures of work could pass at levels at least acceptable, according to recommendations of the authors.

Finishing, we can end the existence of relations between the practical activities of clinical service, in traineeship supervised in Dentistry and the installation and occupational disturbances development of muscleskeletical origin. It falls to suggestion of preventive adoption measures during the academic formation period, through the available informations of on the influence of the unsuitable posture in the acquisition of the professional skill and the benefits resulting from a correct ergonômic adaptation of the post of work: greatest of the apprenticeship conditions and professional exercise, and an increase of the professional acting longevity with improvement in the work conditions and the future professional life quality's.

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ANALYSIS OF THE OCCUPATIONAL DISTURBS PREDOMINANCE'S OF MUSCLESKELETICAL ORIGIN'S IN DENTISTRY GRADUATION COURSE ACADEMIC'S: CONSIDERATIONS WITH PREVENTIVE APROACH TO LER/DORT.

ABSTRACT

Postural problems developed from the adopted positions to the realization of the dentistry professional activity's are a point of study and preoccupation of several authors. A problem of great importance and little boarded by inquiries, are the occupational complain's or disturbances of discomfort and / or pain reported during the period of academic formation. Through this survey there were confirmed the presence of pain and / or discomfort, where (80%) are related to the work posture adopted by the academics of the course, as well was established a relation between the realization of clinical specific proceedings and

the clinical signs appearance. The clinical proceedings that presented bigger incidence of complaints, for part of the academics, were respectively the next ones: periodontics, endodontics, exodontics, dentístic and proceedings carried out in the subsequent superior arcade.The proceeding identifications of complaint was done through a questionnaire application. Once identified, the principal clinical proceedings of difficulty reported were carried out the analyses of the work postures, during the realization of these proceedings, by the applications program of the Intervals Repetition Method (MRI) and subsequently analyzed through the RULA method. The considered results showed several repeats of movements, embarrassment postures and the ergonomic interventions needed about the conditions of practical apprenticeship of these future dentistry professional's.

Key Words: occupational disturbs, dentistry academic's, pain.

ANALYSE DE LA PREVALANCE DES EMEUTES PROFFESSIONNELLES DE ORIGINE MUSCULAIRE EN ACADEMICIENS DU COUSUS DE ODONTOLOGIE : CONSIDERATIONS PREVENTIF DE LESION POUR EFFORT REPETITIF (LER).

RÉSUMÉ

Les problème relatif à une posture adopter dans la réalisation de activité professionnel de odontology sont motif des etudes es préoccupation de divers auteurs. Um probléme des grand importance e peu aborde en recherches sont les émeuetes proffessionnelles ou réclamation de inquiétude et/ou douleur mentionné dans la formation académique. À travers de cette recherche c'est était confirmer la présence de douleur et/ou inquiétude (80%) relacionnel aux postures de travail odopter pour les académiciens du coursus et la relation dans la réalization de procédé clinique spécifique et le surgiment des symptômes. Les procédé clinique que montré grand fréquence de réclamation pour les académiciens était, respectivement : periodonthie, endodonthie, exodonthie, odontologue et les procédé réalizé dans la arcade postérieur supérieur. La identification des procédés de réclamation fait à travers de la application du questionnaire. Identifié les principal procédé clinique de plus difficulté la analyse des portures dans le travail est fait, pendent la réalisation des ces procédé, pour apliquee du Méthode de Répétition en Intervalle (RULA). Les résultats rencontrer démontrez grand repetitivité des moviments, postures de contrainte et la necessité d'intervention ergonomie dans les condition d'aprendre pratique de ce futurs proffessionnelles d'odontologie.

Mots-clé: émeutes proffessionnelles, académiciens du cousus de odontologie, inquiétude/douleur.

ANÁLISIS DE LA PREVALENCIA DE DISTURBIOS OCUPACIONALES DE ORIGEN MÚSCULO ESQUELÉTICO EN ACADÉMICOS DEL CURSO DE ODONTOLOGÍA: CONSIDERACIONES CON ENFOQUE PREVENTIVO DE LER-DORT.

RESUMEN

Los problemas posturales decurrentes de las posiciones adoptadas para la realización de la actividad profesional de la odontología son motivos de estudios e preocupación, y estudio de diversos autores. Un problema de gran importancia y poco abordado por pesquisas son los disturbios ocupacionales o quejas de dolor relatados durante el período de formación académica. A través de esta pesquisa fueron confirmadas la presencia de dolor o desconformo (80%) relacionados a las posturas de trabajo adoptadas por los académicos del curso, y fue establecida la relación entre la realización de procedimientos clínicos específicos con el surgimiento de los señales clínicos. Los procedimientos clínicos que presentaron mayor incidencia de quejas, por parte de los académicos, fueron respectivamente los siguientes periodontia, endodoncia, exodontia, dentistica e procedimiento realizados en la arcada posterior superior. La identificación de los procedimientos de queja fue echa a través de la aplicación de preguntas. Una vez identificados, los principales procedimientos clínicos de relato de dificultad fueron realizadas análisis de las posturas de trabajo, durante la realización desees procedimientos, por el aplicativo del Método de Repetición en Intervalos (MRI) y posteriormente analizados a través del método RULA. Los resultados encontrados muestran gran repetición de movimientos, posturas inadecuadas y la necesidad de intervención ergonómica en las condiciones de aprendiz hado práctico de estos futuros profesionales de odontología.

Palabras claves: disturbios ocupacionales, académicos de odontología, dolor

ESTUDO DA PREVALÊNCIA DE DISTÚRBIOS OCUPACIONAIS DE ORIGEM MUSCULOESQUELÉTICA EM ACADÊMICOS DE ODONTOLOGIA

RESUMO

Este trabalho teve como objetivo central investigar a prevalência de distúrbios músculoesqueléticos de origem ocupacional, decorrente das atividades práticas nas clínicas de odontologia. Participaram do estudo um grupo de acadêmicos do curso de odontologia de uma universidade no oeste do Estado do Paraná Brasil. A coleta de dados foi realizada através da aplicação de uma escala padronizada para dor ou desconforto referido, pelo Método de Repetição em Intervalos (MRI) para análise da atividade e, pelo método RULA, para avaliação da sobrecarga postural. Foi identificado a presenças de dor e/ou desconforto em 80% dos acadêmicos. Os procedimentos clínicos relacionados pelos acadêmicos de maior associação com as queixas foram os seguintes: periodontia, endodontia, exodontia, dentística e procedimentos realizados na arcada dentária superior. Os resultados encontrados mostraram grande repetitividade de movimentos, esforços físicos demasiados, posturas inadequadas, entre outros, que se relacionam com as queixas apresentadas. Nesse sentido, sustenta-se a necessidade de intervenção ergonômica nas condições de aprendizado prático destes futuros profissionais da odontologia.

Palavras-chave: Distúrbios ocupacionais; Odontologia; Desconforto corporal.