40 - STRESS PHASES AND ITS RELATION TO THE SUSCETIBILITY TO INFLUENZA

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INTRODUCTION

Occupational stress is considered one of the main problems in public health, attacking approximately 90% of the global population (Versa et al, 2012). In a wide concept is defined as a negative emotional experience that leads to physiological and behavioral disturbances (Verardi et al 2012). According to Lipp (2003, p.18) "stress comes from a very complex psychophysiological reaction that has in its genesis the necessity of the organism to react to something that threatens its internal homeostasis". Nowadays, the psychoimmunology studies the inter-relations between the psychological state and its interactions with the immune system, providing relevant observations that establish stress as an important modulator of diseases (Segura et al 2007). The rupture of homeostasis may cause imbalances in the nervous system, cardiovascular diseases, abuse in the consumption of alcohol, obesity, ulcers, susceptibility to infectious diseases, cancer among others (Meyer et al, 2012). From multifactorial aetiology, stress can be originated by the combination of many environmental, genetic and socioeconomic factors. Chronic exposure to stress in predisposed individuals provides the emergence of opportunist diseases, for it reduces the immunological response, increases the vulnerability to infections and decreases libido and sleeping time (Taets et al, 2013).

According to the World Health Organization, the flu is the most prevalent of the acute infections of the upper airways, reflecting in the economic means a sum of grievances such as reduction of the productivity and loss of workdays (Faria e Gianisella Filho, 2002). The flu reaches all of the individuals, but it is not usually severe in healthy adults, although in the risk group (elders and children) it may manifest the most severe form of the infection, which results in higher levels of mortality (Scoralick et al, 2013). These important considerations done by many researchers based on the mentioned symptoms and clinical observations may indicate there are morbidities related to the immunological jeopardy, for example the manifestation of the flu due to the stress phase which the individual is experiencing.

MATERIALS AND METHODS

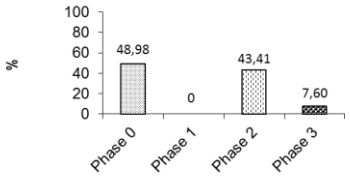
It is a descriptive, quantitative and transversal research of epidemiological character with descriptions of characteristics related to stress, 539 people were chosen randomly from many public places of the city of São Paulo and Taboão da Serra (SP). The data was collected through a semi-structured questionnaire, containing 46 questions from the Inventory of the Symptoms of Stress for Adults of Lipp (ISSL), approved by the Federal Council of Psychology (FCP, 2006). This questionnaire based on the symptomatology of stress evaluates clinical pictures containing as much of physical stress as psychological and some physiological symptoms (Cardoso e Loreiro, 2008). Having the aim to analyze the correlation between the incidence of cases of flu throughout a year and the socioeconomic profile, these questions were added in the research. The ethical aspects were maintained, according to the Resolution Nº 196/96 (CNS-MS). The positive diagnose is given by the sum of the symptoms from each step of the questionnaire, and if the limit number of a certain phase is surpassed, the occurrence of stress and its respective phase will be indicated (Lucarelli e Lipp, 1999). The charts and graphs were composed based on the analysis of the results obtained and were made using the Excel software.

OBJECTIVES

Quantify and qualify the phases of stress with the personal characteristics of the individuals such as the socioeconomic conditions. Connecting the separated groups with the indicatives of recurrent influenzas in the period of one year.

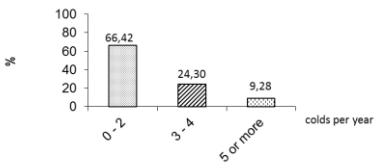
RESULTS

Graph 1: Distribution in percentages related to the stress phase.



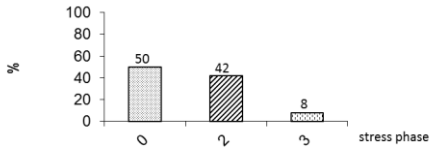
From the total of 539 interviewed people, 48.89% didn`t reach the sum that catagorizes some type of stress named in the graph as phase 0. There were no volunteers in the profile of phase 1 atention/alert, for the ones who presented these symptoms also had the symptoms of phase 2, thus fitting into this category. The phase 2 of resistance/struggle summed 43.41% and the phase 3, exhaustion/depletion, 7.60%.

Graph 2: Distribution in percentages related to incidence of influenza in all of the sample group in the last year.



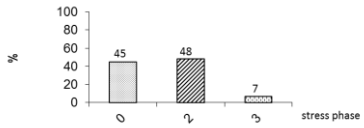
It is evident that most of the respondents does not present recurrent cases of influenza. However, 33.58% claimed to have more than three cases per year.

Graph 3: Distribution in percentages of the phases of stress among the group with 0 to 2 cases of influenza per year.



From the respondents with 0 to 2 cases of influenza, 50% are in the phase 0 of stress, that is, do not present any kind of stress. From the rest of the group, 42% fit into phase 2 resistance/struggle and only 8% are in phase 3, exhaustion.

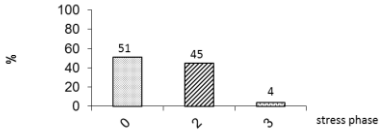
Graph 4: Distribution in percentages of the phases of stress among the group with 3 to 4 cases of influenza per year.



The group with 3 to 4 cases a year presents its major portion in the phase 2 with 48%, which indicates that the quantity of cases is related to the stress suffered by one`s life.

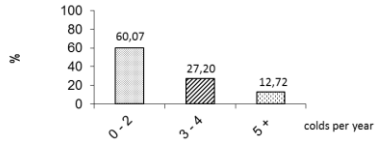
However, 45% of the group are in the phase 0 of stress and only 7% are in phase 3 of exhaustion.

Graph 5: Distribution in percentages of the phases of stress among the group with 5 or more cases of influenza per year.



Within the group with 5 or more cases per year, 51% of the individuals did not present any phase of stress, whereas only 4% presented phase 3 exhaustion/depletion. This indicates there is no relation between levels of stress and susceptibility to catching influenza.

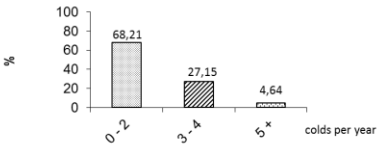
Graph 6: Distribution in percentages of the quantity of cases per year within the group with family income from 1 to 3 minimum wages.



In the group with family income from 1 to 3 minimum wages, 60.07% presented cases of infuenza only 0 to 2 times a year.

A relatively significant portion of the group, 12.7 %, presented cases of the flu more than 5 times, leading to the deduction that the income influences in the susceptibility to influenza, once it intereferes directly in the individual`s life quality.

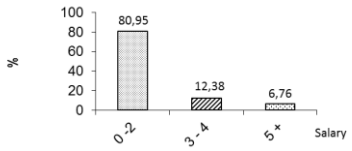
Graph 7: Distribution in percentages of the quantities of cases of influenza per year among the group with family income from 4 to 6 minimum wages.



The percentage of people with 0 to 2 cases of the flu per year increased within the group of 4 to 6 minimum wages, indicating an improvement in the susceptibility to influenza

The rate of the respondents with 5 or more cases per year decreased to 4.64%. The percentage of 3 to 4 cases per year did not alter much regarding the group with 1 to 3 minimum wages.

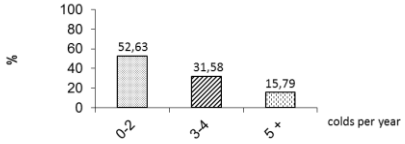
Graph 8: Distribution in percentages of the quantities of cases of influenza per year among the group with family income from 7 or more minimum wages.



Within the group with family income superior to 7 minimum wages the rate of individuals with 0 to 2 cases per year was of 80.95%, higher than the other groups with different family income.

The percentage of 3 to 4 minimum wages presented a visible decrease, although the rate of 5 or more cases per year had a light increase.

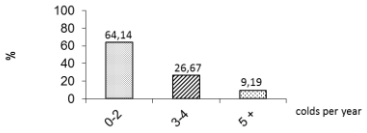
Graph 9: Distribution in percentages of the quantities of cases of influenza per year among the group with elementary school level.



It is possible to observe that 52.63% of the respondents present normal quantities of cases, though 31.58% has had 3 to 4 cases per year.

The number of individuals with more than 5 cases of influenza per year is relatively high, 15.79%, comparing with the other school levels, this is the highest rate. Which points out the straight relation between school level and life quality and susceptibility to influenza.

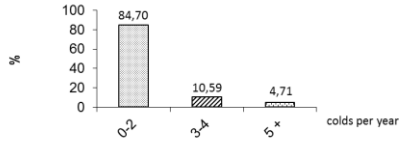
Graph 10: Distribution in percentages of the quantities of cases of influenza per year among the group with high school level.



Amomgst the group with high school level it is possible to observe that regarding the individuals with elementary school level there was a decrease in the rate of more than 3 cases per year.

Whereas the rates of 0 to 2 cases, which is considered normal, presented an increase of approximately 10%.

Graph 11: Distribution in percentages of the quantities of cases of influenza per year among the group with college graduation.



The percentage of 0 to 2 cases of the flu per year amid the respondents with college graduation is of 84.70%, the highest rate compared with the other groups.

The number of more than 3 cases per year is below 15%, which demonstrates again that school level influences in life quality, which is directly related to health and susceptibility to diseases.

CONCLUSION

Nowadays, social determinants and its inter-relations with the process health-disease has taken global consciousness and is now seen as a conceptual approach shaped by social stratification, economic, cultural and social conditions of the population. These factors generate implications for the world`s population, once family income influences directly in life quality and consequently in the emotional, mental and physical welfare. The correlation of these factors may explain, at least in part, the higher levels of influenza amidst people with lower income, being proportional the decrease in accordance with the increase of income. Therefore, it is hoped that this article will contribute for a more integrated approach of health issues in an inseparable way from economic conditions.

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ABSTRACT

Stress is considered nowadays one of the main problems of public health, being able to cause several physiological imbalances throughout all the human body. By a combination of several factors, alterations can appear due to homeostasis break. The most common diseases are the cardiovascular, ulcers and susceptibility to infectious diseases like the flu. Cronic exposure to stress causes physical exhaustion able to disturb the internal balance damaging the life quality of the individuals. Objective: Connect the phases of stress experienced by the volunteers with their personal and socioeconomic characteristics and the influence of these factors in the susceptibility to the flu in the period of one year. Methods: It is a descriptive, transversal and quantitative study, performed with 539 people through a semi-structured questionnaire. The data based on the symptomatology were compiled and graphics of simple frequency, expressed in numbers and percentages were presented. The ethical aspects were respected, according to the Resolution Nº 196/96 (CNS-MS) Results: It has been noted that most of the population didn`t know the difference between a flu and a cold. The majority of the volunteers present a profile of ages from 18 to 30 years old and family income inferior to 3 minimum wages, and most of them spend less than two hours in the traffic per day. 39% of the total corresponded with the alert phase and the percentage of volunteers that had the flu more than three times a year was of 35%. Comparing these rates with the socioeconomic profile, it has been verified that within the group with elementary school level, the percentage of individuals with more than five flus per year is 15.79%, which indicates there is an inclination for the occurrence of more flus in people with family income equivalent or inferior to three minimum wages and low life quality. We can associate higher susceptibility to the flu in the studied population with lower socioeconomic condition.

KEYWORDS: Flu, influenza, stress, socioeconomic, psychoimmunology, social determinants.

FASES DEL ESTRÉS Y SU RELACIÓN CON LA GRIPE SUSCEPTIBILIDAD

RESUMEN

El estrés considerado actualmente uno de los principales problemas de la salud pública, pudiendo causar diversos desequilibrios fisiológicos por todo el organismo humano. Por una combinación de diversos factores pueden surgir alteraciones debido ruptura de la homeostasis. Las enfermedades más comunes son las cardiovasculares, úlceras y la susceptibilidad a las enfermedades infecciosas como la gripe. La exposición crónica al estrés plantea el agotamiento físico capaz de perturbar el equilibrio interno, dañando así la calidad de vida de los individuos. Objetivo: Relacionar las etapas de estrés experimentado por los voluntarios con sus características personales, socioeconómicas y la influencia de estos factores de susceptibilidad a la gripe en el periodo de un año. Métodos: este es un estudio descriptivo, transversal y cuantitativo, realizado con 539 personas de un cuestionario semiestructurado. Los datos basados en la sintomatología fueron compilados, y presentados gráficos de frecuencia simple, expresos en números y porcentajes. Los aspectos étnicos fueron respetados de acuerdo con la Resolución Nº 196/96 (CNS-MS). Resultados: Se observó que la mayoría de la población no sabía la diferencia entre gripe y resfriado. La mayoría de los voluntarios componen un perfil con el grupo de edad desde 18 hasta 30 años y el ingreso familiar inferior a 3 sueldos mínimos, la mayoría no pasa más que 2 horas en el tráfico por día. Del total, 39% correspondían a la fase de alerta y el índice de voluntarios con gripe durante 3 veces fue de 35% anual. Al comparar este índice con el perfil socio-económico, se encontró que en el grupo con la escuela primaria el porcentaje de individuos con más de 5 gripes por año es 15,79%, indicando que hay una tendencia en la aparición de gripes en personas con un ingreso familiar inferior o igual a 3 sueldos y baja calidad de vida. Podemos asociar una mayor susceptibilidad a la gripe en la población estudiada con baja condición socioeconómica.

PALABRA CLAVE: Gripe, estrés, socioeconómico, psicoimunologia, determinantes sociales.

AS FASES DO ESTRESSE E A SUA RELAÇÃO COM A SUSCEPTIBILIDADE A GRIPE

RESUMO

O estresse é considerado atualmente um dos principais problemas de saúde pública, podendo causar diversos desequilíbrios fisiológicos por todo o organismo humano. Por uma combinação de diversos fatores podem surgir alterações devido à quebra da homeostasia. As doenças mais comuns são as cardiovasculares, úlceras e susceptibilidade a doenças infecciosas como a gripe. A exposição crônica ao estresse gera o esgotamento físico capaz de pertubar o equilíbrio interno prejudicando assim a qualidade de vida dos indivíduos. Objetivo: Relacionar as fases do estresse vivenciadas pelos voluntários com suas características pessoais, socioeconômicas e a influência desses fatores na susceptibilidade a gripe no período de um ano. Métodos: Trata-se de um estudo descritivo, transversal e quantitativo, realizado com 539 pessoas, por um questionário semiestruturado Os dados baseados na sintomatologia foram compilados, e apresentados gráficos de frequência simples, expressos em números e percentagens. Os aspectos éticos foram respeitados, de acordo com a Resolução Nº 196/96 (CNS-MS) Resultados: Observou-se que a maioria da população não sabia a diferença entre gripe e resfriados. A maior parte dos voluntários compõe um perfil com faixa etária de 18 a 30 anos e renda familiar inferior a 3 salários mínimos, a maioria das pessoas não passam mais que 2 horas no trânsito por dia. Do total 39% correspondiam com a fase de alerta e o índice de voluntários com gripe acima de 3 vezes anual foi de 35%. Comparando esse índice com o perfil socioeconômico, verificou-se que no grupo com ensino fundamental a porcentagem de indivíduos com mais de 5 gripes ao ano é de 15,79 %, indicando que há uma tendência na ocorrência de mais gripes em pessoas com renda familiar igual ou inferior a 3 salários e qualidade de vida baixa. Podemos associar maior susceptibilidade a gripe na população estudada com menor condição socioeconômica.

PALAVRAS-CHAVE: Gripe, estresse, socioeconômico, psicoimunologia, determinantes sociais