

Food habits in a group of musicians

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Abstract

Is it feasible to believe that, for musicians, only proper warm-up and joint stretching procedures are enough in order to have a healthy body? Is the well-being (which physically and mentally conditions the performance of a musician) completely influenced by the two factors alone? Nutrition is another important aspect for the balance of an instrumentalist, mainly because he constantly has to deal with many hours of rehearsals, concerts, teaching, touring, etc. To achieve good functioning of his body, it requires the necessary nutrients and vitamins that provide energy and, essentially, good health (Calvacanti, D'el Rey, Lencastre, Pilon, Santos, Sossai 1980). Hydration is equally important in this regard, especially in the case of musicians, who tend to release considerable amounts of water through sudoresis (Mahan, Escott-Stump, Raymond 2013).

The nutritional and physical aspects represent a crucial role in the preparation for a musical performance. Bad nutrition can negatively affect it by bringing distress, which in turn could lead to muscle-skeletal pathologies - thus the importance of adequate feeding as a health related priority (Ângelo 2015).

Musicians are often compared to high-end competitive athletes due to the physical activity to which they are exposed daily. This intense routine of concerts, auditions, etc., requires special concern when it comes to an adequate nutrition that leads to good health and liveliness. That will unarguably lead to better performances.

Introduction

Is it feasible to believe that, for musicians, only proper warm-up and joint stretching procedures are enough in order to have a healthy body? Is the well-being (which physically and mentally conditions the performance of a musician) completely influenced by the two factors alone? Nutrition is another important aspect for the balance of an instrumentalist, mainly because he constantly has to deal with many hours of rehearsals, concerts, teaching, touring, etc. To achieve good functioning of his body, it requires the necessary nutrients and vitamins that provide energy and, essentially, good health (Calvacanti, D'el Rey, Lencastre, Pilon, Santos, Sossai 1980).

Nutrition is characterised by the biological process in which organisms take advantage of the ingested foods in order to retain the necessary nutrients for the undertaking of their vital functions. As C. Juzwiak, V. Paschoal and F. Lopez suggest, it is important for children and teenagers to consume enough energy and nutrients for their growing requirements and the maintenance of essential tissues that are the basis of their intellectual and physical activities (Juzwiak, Paschoal, Lopez 2000). Eating healthy is a determinant factor in the promotion of good health and preventing diseases, as well as managing chronic illnesses, such as cardiovascular problems, diabetes, hypertension, cancer and muscle-skeletal pathologies (Desroches, Lapointe, Ratté, Gravel, Légaré, Thrisk 2011), the last of these actually being very common amongst musicians. Being an integral part of medi-

cal aspects, alimentation is associated to physiology and the clinical outlooks of patients. Its bad ingestion is often present in diagnostics as the "origin of the problem", or even as the "resolution of the problem", when they are properly advised. It is important to previously highlight the indications and counter-indications which come from foods (Cabrita 2013).

The World Health Organisation refers to bad eating habits "as one of the main causes in the increase of chronic, non-transmitted diseases [...], recommending that people decrease their consumption of saturated fats, sugar and salt (unhealthy foods) and increase the consumption of fruits and vegetables (healthy foods)" (Celeste, Almeida, Ribeiro 2012, p. 31). According to the Portuguese National Institute for Statistics, Portuguese people show imbalances in their diets, with excessive calorie and fat ingestion, as well as a deficit in fruit and green and dry vegetables (INE 2010).

For a good nutrition, a routinely balanced diet is essential to the good functioning of the body. Such diet should have the proper quantity and, fundamentally, variety of nutrients. As I. David and E. Ern (2006) suggest, diet (from the greek *daia* - way of life), consists in the ingestion of foods, a process that should be considered as means of filling the specific needs of an individual. One considers a healthy diet as an element of a healthy lifestyle, in the sense that it has a considerable impact in the main risk factors of diseases, thus constituting a tool for health improvement. Epidemiological studies have established

the strong and common association that chronic illnesses maintain a small set of risk factors that, in their turn, are related to alimentation, with emphasis on the low consumption of fruits and green vegetables, overweight, arterial hypertension, hypercholesterolemia, excessive consumption of alcohol, sedentarism and smoking (David, Ern 2006). According to I. David and E. Ern, when it comes to the ingestion of fast foods, "foods have become merchandised and commercialised produces in a market which has expanded from a merely local base to a more globalised one. One verifies that there is growing ingestion of foods that increase the probability of chronic illnesses, mainly foods that are industrially processed and of high caloric density" (David, Ern 2006, p. 16).

Hydration is equally important in order to guarantee a good health maintenance and a good physical performance of the human being. In the specific case of musicians, who tend to release considerable amounts of water through sudoresis during a performance, it becomes a fundamental element in their physical well-being and general condition (Mahan, Escott-Stump, Raymond 2013). Frequent references to the need for a musician to keep himself in good physical condition and with good eating habits are quite common in literature. However, when it comes to discussing the proper alimentation for a musician and how it can interfere in his musical performance, the issue is scarcely explored.

The nutritional and physical aspects represent a significant role in the preparation for a musician's performance, as the essay "Music Students' Health Problems and Health-promoting Behaviours" shows (Kreutz, Ginsborg, William 2008). This study demonstrates that music students with good nutritional habits are those who achieve better results in terms of the quality of their performance. Through the present essay, one will present the data related to the consumption/frequency of foods that musicians ingest and its correlation with age, in order to understand if the variation of age influences eating habits. It seems relevant as well to analyse the values in relation to gender.

Material and methodology

For this essay, a questionnaire regarding nutrition was presented to 35 instrumentalists (18 women and 17 men) of various nationalities (mostly Portuguese, but also Brazilian, Italian, Polish, Bulgarian and Belarusian), aged between 18 and 47. These instrumentalists present a Corporal Mass Index (CMI) between 18 and 24, meaning that the sample shows a normal weight figure. It was asked of all participants that they state their sex, age, weight, height and instrument. Body temperature and blood pressure were measured. In order to facilitate the data analysis, the questionnaires were arranged by food categories. The aforementioned questionnaire presents sixty questions regarding the consumption of foods, in which the instrumentalist is required to indicate the frequency in which he ingests them during a week, in a scale from 0 to 4, in which 0 corresponds to "never" (0%), 1 to "rarely" (25%), 2 to "sometimes" (50%), 3 to "frequently" (75%) and 4 to "always" (100%). A previous analysis was undertaken in a generic manner, i. e. with all involved musicians and considering their gender.

All data are submitted to statistic processing, in which a table with food consumption percentages and another table with the "Spearman" correlation of age with the several parameters were made, in order to understand if any relation between age and the other aspects exist. The utilisation of the "Spearman" correlation is justified by the fact that the age distribution is not undertaken in a regular way and the considered parameters use an ordinal variable. Within such parameters, the counting of frequencies for each level (0, 1, 2, 3 and 4) was made, as well as calculating the percentage for each one. The Corporal Mass Index is also an indicator of the nutritional state.

Results

The questionnaire results show that 5,7% (2/35) of the inquired do not ingest earth animal foods, 8,6% (3/35) do it

rarely, 34,3% (12/35) ingest them sometimes and 42,9% (14/35) do so frequently. Only 8,6% (3/35) ingest them always. When it comes to gender, the highest levels of consumption are 44,4% of 18 women who do so sometimes and 41,18% of 17 men who ingest them frequently. The consumption in men stands out.

Regarding water animal foods, there is no reference for non-consumption. Of the inquired, 25,7% (9/35) ingest them rarely, 51,4% (18/35) do so sometimes, 17,1% (9/35) frequently and 2,9% (1/35) ingest them always. When it comes to gender, the highest levels of consumption are 61,11% in women and 41,18% in men, who both do it sometimes. The consumption in women stands out. When it comes to vegetables, 2,9% (1/35) of musicians don't ingest them at all, 11,4% (4/35) do so rarely, 34,4% (12/35) sometimes, 28,6% (10/35) frequently and 22,9% (7/35) do it always. Genderwise, the highest levels of consumption are 33,33% in women, who ingest them sometimes or always, and 35,29% in men, who do so sometimes or frequently. The consumption in women stands out.

The ingestion of milk is the second category with the highest percentage relative to its non-consumption (31,4% - 11/35), after distilled drinks, as seen below. The questionnaire shows that 14,3% (5/35) do so rarely, 28,6% (10/35) sometimes, 17,1% (6/35) frequently and only 8,65% (3/35) always. The highest numbers of consumption in women are 22,22%, who ingest them frequently, and 41,18% in men, who do so sometimes a week. The consumption in women stands out.

The results also reveal that 8,6% (3/35) of musicians do not ingest red meat, 22,9% (8/35) do it rarely, whereas 40% (14/35) say they eat red meat a few times a week and 28,6% (10/24) do so frequently. Women showed a percentage of 33,33% in frequently ingesting while 52,94% of men do it sometimes only. The consumption in women stands out.

Regarding white meat, 5,7% (2/35) say they don't ingest these foods. With the same percentage, other inquired musicians state doing it rarely, 42,9% (15/35) a few times a week, 37,1% (13/35) frequently and only 8,3% (3/35) do it always. Regarding gender, the highest number are seen in women, with 38,89% who do so rarely or a few times a week, and 47,06% men ingest them sometimes. The consumption in men stands out.

Regarding drinks, one will consider the fermented and the distilled ones. When it comes to fermented drinks, 28,6% (10/35) do not ingest them, 25,7% (9/35) do so rarely, 20% (7/35) sometimes, 14,3% (5/35) frequently and only 5,7% (2/35) always. Gender-wise, the highest numbers are seen in women, with 33,33% no consuming them at all or doing it rarely, and 29,41% of men who do so frequently. The consumption in men stands out.

The distilled drinks category is the one with the highest numbers registered in this questionnaire, in both consumption (57,1% - 20/35) and non-consumption. 22,9% (8/35) ingest them rarely, 8,6% (3/35) sometimes and 5,7% (2/35) frequently. 72,22% of women do not do it at all, as well as 41,18% of men. Still, 35,29% of men and 11,11% of women ingest them rarely. The consumption in men stands out.

According to the questionnaire, 20% (7/35) of musicians do not ingest raw foods, 22,9% (8/35) do it rarely and 25,7% (9/35) sometimes during the week. Only 5,7% (2/35) do so frequently and 11,4% (4/35) always. Women mainly ingest them rarely (27,78%) and men sometimes (29,41%). The consumption in men stands out.

Regarding baked foods, there is no reference to its non-consumption. However, 5,7% (2/35) ingest them rarely, 31,4 (11/35) do so sometimes, 37,1% (13/35) frequently and 11,4% (4/35) always. When it comes to gender, women doing it frequently top the results with 38,89%, whereas men, ingesting them only sometimes, registered 41,18%. The consumption in women stands out.

Stewed foods are not consumed by 8,6% (3/35) of the inquired musicians. 14,3% (5/35) state that they do it rarely, 28,6% (9/35) do it sometimes, 20% (7/35) frequently and 14,3% (5/35) always. Women who ingest them sometimes or frequently registered 27,78%, whereas men who do so sometimes are 29,41% of the total. The consump-

tion in women stands out.

When it comes to fried foods, 14,3% (5/35) do not ingest them, 48,6% (17/35) do so rarely, 17,1% (6/35) sometimes and only 5,7% (2/35) frequently. These numbers show that the consumption of such foods is very low. 50% of women ingest fried foods sometimes and 47,06% do it rarely. The consumption in women stands out.

There is no reference to the non-consumption of grilled foods, and only 8,6% (3/35) of musicians state that they do it rarely. Of the inquired musicians, 17,1% (6/35) do so sometimes, 48,6% (17/35) frequently and 11,4% (4/35) always. Women who do it frequently registered 50% and men 47,06%.

Regarding roasted foods, only 2,9% (1/35) of the inquired states that they don't eat them at all, 17,1% (6/35) ingest them rarely, 34,3% (12/35) sometimes and 28,6% (10/35) frequently, whereas 2,9% (1/3) do so always. 33,33% of the women do it sometimes and 35,29% of the men ingest them sometimes or frequently. The consumption in women stands out.

In another parameter, 11,4% (4/35) state that they don't ingest coffee, 34,3% (12/35) do it rarely, 14,3% (5/35) sometimes and only 5,7% (2/35) frequently. There is also incidence on constant coffee consumption amongst musicians (28,6% - 10/35). Women who drink coffee rarely registered 55,56%, whereas men who do it always reached 41,18%. The consumption in men stands out.

Finally, 37,1% (13/35) of musicians state they drink 1lt of water per day, 22,29% (8/35) 1,5lt, 20% (7/35) 2lt, 11,4% (4/35) 0,5lt, 5,7 (2/35) 0,75lt and 2,9 (1/35) 3,5lt. Gender-wise, the highest numbers of consumption are 55,5% in women, who drink 1lt per day, and 35,29% of men, who ingest 2lt per day.

The correlation between age and foods helps one to know if the variation in age influences eating habits. Such correlation varies between 1 and -1 (1, or approximately one, signifies that the variables are directly proportionate; if the value is close to -1, the variables are inversely proportionate; if the correlation is 0, or between 0,2 and -0,2, it shows that there is no connection between the variables). In the results, the correlation between age and earth animals is -0,53, i. e. there is a moderate negative connection which indicates a tendency for the decreasing of meat consumption with age.

Regarding water animals, as well as with vegetables, there is no variability with the increasing in age.

With milk there is a moderate correlation of -0,5, which indicates a tendency for the diminishing of milk consumption with age.

When it comes to water, there is a moderate correlation in women of -0,53, suggesting a tendency for decreasing water consumption with age.

Red meats show a moderate correlation of -0,6 in women, which shows a diminishing of meat consumption with age. White meats also present a negative correlation, with -0,49, pointing towards the same conclusion.

Regarding fermented drinks, there is no correlation. However, in men, there is a tendency for an increase in consumption, with a value of 0,38.

In distilled drinks, women's data show no correlation, whereas in men a 0,59 value is registered.

Regarding raw, stewed and grilled foods there is no correlation.

When it comes to baked foods, one can see a moderate correlation of -0,4, which signifies a tendency for a decreasing of baked foods ingestion with age.

Fried foods show a decrease of consumption in women (-0,5). There is no variation in men.

In roasted foods, there is a small tendency in women for the diminishing of consumption, with a correlation of -0,37.

There is also no correlation in coffee consumption.

Analysis

We can verify that, when it comes to the levels of non-consumption or rare consumption (0-1), the majority of the inquired musicians doesn't ingest distilled drinks, which might be related to age, given the fact that many of them are still barely over 18. The highest registered number is connected to fried foods, in which nearly half of the participants eat them rarely, most probably because it

is considered as the worst way of cooking, since it brings about increasing blood pressure, obesity, accumulation of fat, etc (Mahan, Escott-Stump, Raymond 2013). Coffee seems to be ingested rarely by musicians, for it is known to cause insomnia and anxiety (Shmukler 2010). Those who do it tend to drink it as a stimulant (Martinez 2001).

Fermented drinks and milk don't seem to be ingested at all by many musicians. Although milk is essential in an early period of maturation for the human body, it ceases to be so later on in growth, even possibly originating some health complications at a certain age, especially skin and internal organ problems (Zucoloto 2008). The low consumption of fermented drinks could be related to the musicians age, as well as the fact that it is not advised to be under the influence of alcohol in stressful, high-energy situations, such as concerts, recitals and individual teaching. Regarding water, there appears to be a great number of the participants who state that they drink at least 1lt a day, which is the recommended amount (Mahan, Escott-Stump, Raymond 2013). In terms of hydration, the lack of water seems to be a common cause of physical tiredness (Helito, Kauffman 2007. As Karine de Holanda Frota states, "dehydration is one of the most recurrent problems in musicians and not all liquid foods promote well-being" (Ângelo 2015). Hydration is an important factor in the life of a musician, since one releases great amounts of water through perspiration. One is advised to ingest at least 1lt of water per day. As seen in the present essay, most musicians already do so.

In terms of periodic or frequent consumption levels (2-3), one can see that earth animals is the category with the highest number, and that white meats are more often ingested than red meats, even considering that red meat offers a great nutritional value to the human body (Mahan, Escott-Stump, Raymond 2013). The fact that more white meat is chosen as an eating habit should be explained by its caloric value, which is lower, and that is particularly the case in women's choices. On the other hand, consumption of water animals, and especially fish, presents more relevance in level 2 answers, even considering that it is lower than those regarding meat.

When it comes to the way food is prepared, grilled foods seem to be favoured by the inquired musicians, given they seem to be sold to the idea by general information that it is the healthiest way of cooking. However, studies show that it could actually present itself to be as a very dangerous way of preparing food, for the close contact with flaming can cause creation of cancerous substances such as creatinine (Zucoloto 2008). The ingestion of baked foods seems to be favoured by only musicians in general, for the same reason. Vegetables and roasted foods register similar levels of rare and frequent consumption, whereas fried foods seem to be ingested the least, since the highest incidence (48,6%) was shown in level 1 (rarely) answers. Raw foods don't seem to be regular part of musicians' diets, with most data at levels 1 and 2 (rarely or sometimes).

Gender-wise, as shown by Table 3, it is interesting to note what is the variation in food types between men's and women's diets. According to the results, women tend to eat fish, red meat, vegetables, milk, baked, fried and grilled foods much more frequently, while men have clearly higher levels of consumption of white meats, distilled and fermented drinks, coffee and raw and roasted foods.

In terms of the global results of the questionnaire, one can see that all the correlations are moderate, which doesn't allow for the conclusion that these values could be taken as universal. One can only determine a certain tendency in age relation with the other variables (earth foods, milk, white meats and baked foods). There is only a clear positive correlation in men between age and distilled and fermented drinks, with an unmistakable increase as they get older. This is the only correlation which is directly proportional, as all others are so inversely, i. e. they vary contrarily to age. Finally, women single out in this study as having a tendency for a decrease in the consumption of water, red meats, drinks, fried and roasted foods and coffee as they increase in age.

Conclusions

Bad nutrition can negatively affect musical performance

by bringing about discomfort, which in turn can lead to muscle-skeletal pathologies. As such, food habits must be a priority in health (Ángelo 2015). Musicians are often compared to high-end competitive athletes due to the physical activity to which they are exposed daily. This intense routine of concerts, auditions, etc., requires special concern when it comes to an adequate nutrition that leads to good health and liveliness. That will unarguably lead to better performances.

With this study, one can conclude that women seem to be more careful regarding their eating habits than men. They appear to ingest fish, red meats, vegetables and milk more frequently than men, who tend to prefer baked, stewed and grilled foods. Considering that these foods are the healthiest, it is the women who, on the other hand, tend to ingest fried foods more frequently. Men seem to ingest more white meats, fermented and distilled drinks, coffee and raw and roasted foods.

Age correlation cannot be taken generally either, but there seems to be a greater tendency in women for a decreasing consumption of certain foods with age. Men, however, tend to ingest more drinks more as they get older. The inquired musicians still appear to be within the recommended parameters for a healthy diet.

An important point to emphasise is the cultural context, which can influence eating habits, and one has to consider the fact that some of the inquired musicians are foreign. This cultural variety in the musical world is almost universal, given the fact that each one of the musicians pursues eating habits related to their country or region of origin. Some results of this research could be related to this fact. It is also necessary to state that each organism is unique and, as such, the nutritional needs are specific to each person. However, besides this nutritional analysis, one must take into consideration the musical instrument that each of the participants plays, with physical activity being a crucial matter in its relation to nutrition. Good eating habits are essential for a proper physical shape, which consequently will lead to more energy being available and, thus, better musical performances.

References

- Alain V. Schmukler (2010). "Homeopatia de A a Z" Universo dos Livros, 108.
- Afredo Salim Helito, Paulo Kauffman (2007). "Saude. Entendendo as doenças, a enciclopédia médica da família" Nobel, 242.
- Anahi Maica, Ingrid SchweigErt (2008). "Avaliação nutricional em pacientes graves" Bras Ter Intensiva 20, 286-293.
- Antônio Cabrita (2013). "Conhecimentos Elementares sobre Alimentos para a Consulta de Acupuntura" 1-71.
- Antônio Lopes (2008). "A Importância de Bons Hábitos Alimentares" Gazeta Mercantil, 11.
- Celeste M. (2012). "Hábitos Alimentares: Comparação entre adultos saudáveis e portadores de doença crônica" Ata do 9º Congresso Nacional de Psicologia da saúde, 31-36.
- Claudia Juzwiak, Valéria Paschoal, Fábio Lopez (2000) Jornal de Pediatria 76, 349-357.
- Denis Martinez (2001). "Como vai seu sono?" AGE, 49.
- Fernando Zucoloto (2008) "Porque comemos o que comemos?" Mauad X, 53.
- Gunter Kreutz, Jane Ginesborg, Aaron Williamon (2008) "Music Students' Health Problems and Health-promoting Behaviours" Emerald Group Publishing Limited 23, 1-18.
- Isabela David, Edel Ern (2006). "Qualidade da dieta de profissionais da área da saúde: ingestão semanal de alimentos recomendados para prevenção de doenças crônicas não-transmissíveis" Arquivos Catarinenses de Medicina 35 nº2, 15-19.
- L. K. Mahan, Sylvia Escott-Stump, Janice L. Raymond (2013). "Krause Alimentos, Nutrição e Dietoterapia" Elsevier 13, 2-1040.
- Maria Calvacanti, Denise D'el Rey, Éris Lencastre, André Pilon, Silvio Santos, João Sossai (1980). "Saude na Escola" IBRASA, 63.
- Sônia Ray (2009). "Considerações sobre o pânico de palco na preparação de uma performance musical" Mentis em Música, 158.178.