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A STUDY OF HUMAN HEALTH & BIOLOGICAL IMPACT OF ANIMAL PRODUCTS.

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ABSTRACT

Context: Animal products are known to be a healthy alternative in diet of people. Milk, meat and products like chicken and eggs are deemed as source of nutrition. However, recent studies have questioned this approach and have pointed towards a paradigm shift.

Objectives: To establish that animal products are unhealthy for human beings.

Methods: A secondary data collection and systematic literature review approach was adopted for this work, where the findings of different scholars were analysed.

Results & Conclusion: The analysis clarified that the commercialization of animal products industry has led to the products being filled with toxins and chemicals, which on consumption, prove futile for humans. Apart from this, products like meat are carcinogenic, showing that there is a shift from the earlier ideology pertaining to animal products being crucial for a healthy diet.

Significance: This study strengthens the contention that animal products and its rampant production, is resulting in more harm than benefit.

Key words: Animal Products, Human Health, Milk Products, Meat

INTRODUCTION

Overview

There is a very famous saying that we become what we eat and this is quite true. What we eat helps in making us the way we are and justifies why we have certain features or qualities. This does not necessarily mean that a person would become a plant if they ate plant or that they would become an animal if they ate animals. Rather, it would show the kind of vitamins and minerals a person has, and would also help in understanding the reasons behind their deficiencies due to the lack of what a person does not eat. One has to remember that excess of everything is bad, and so is the case with what a person eats. Suppose, person only drinks water in his entire diet. He would indeed be missing the key aspect from his diets, to the likes of protein, carbohydrates, and several key vitamins and minerals. This means that a balanced diet is essential.

Within the context of the balanced diet, it has to be noted that the kind of food or products that a person intake, leaves certain impact on them and on their health. The present work is focused on showing the impact of animal products on human health.

Literature Review

When the discussion is undertaken regarding what forms a part of a well-balanced diet, the common items include protein based and calcium rich animal products, to the likes of fish, meat, eggs, and chicken, and milk, respectively. This is the reason why it is often advised to include all these products in the daily diet as well (McClements and Grossmann, 2021). However, the present studies and research work in this area have shed light on the present time being a paradigm shift regarding the role that has been played by the animal-based products on the health of people. Despite the fact that animal products do constitute as being the most nutritionally dense food items that are available to the humans, the perception towards the impact that is left by intake of human products on the health of humans is becoming negative. This is predominantly due to the increase in risks associated with cardiovascular diseases, and cancer for meat and dairy (Salter, 2013).

There has been a substantial body of literature in the recent years, which has shown that the negative perception of cardiovascular diseases and saturated fats need to be revisited. Apart from this, there have been studies which have shown that the consumption of full fat dairy could reduce the risks associated with chronic diseases and obesity (Kratz, Baars and Guyenet, 2013). In a similar manner, the presumed association present between certain caner and consumption of processed/ unprocessed meat has been questioned as well. With the new studies and a higher number of rigorous methods being used to undertake the analysis of epidemiological data, it is a strong belief that the paradigms held earlier are becoming weak, along with the degree of confidence regarding dietary recommendations for limiting the animal products (Rico, 2021).

As the animal-based products have high nutrient density, these have become a part of staples in human diet and the same has been evident in the evolutionary history of humans. There has been evidence of bone marrow and meat consumption in hominin and this has been noted in history of 2.5-2.8 million years back (Thompson et al., 2019). The introduction of milk from ruminants' traces back to 8500 years ago (Curry, 2013). Milk constitutes a key part of early development of mammals for the source of energy, vitamins and minerals like potassium, vitamin

D and calcium, and high-quality protein (Gaucheron, 2005). These very nutrients are crucial for children with under nutrition problem and the same can result in long term impact like reduced physical and cognitive development (Black et al., 2013). The WHO data for 2019 has depicted that stunting impacts around 21.3% of the children below ages of 5 (Roediger, Hendrixson and Manary, 2020). Here, it is crucial to note that stunting starts in utero, which is greatest for initial thousand days of life, which makes mother's nutrition, a key factor (de Onis and Branca, 2016).

Apart from the role in child nutrition, milk and the products derived from milk play a crucial role in adult's nutrition as well. In the past eight millennia, the capacity of humans to continue drinking milk in adulthood has developed, in association with dairying and agriculture, as has been noted by Curry (2013). This is attributed to the persistence of enzyme lactase beyond the early childhood of a person. The growth in differentiating genetic mutations for this persistence has developed in varied geographic regions on earth, which does present a key selection benefit (Bersaglieri, et al., 2004). At present, 1/3rd of human produce lactase in adulthood, where northern Europe has a greater prevalence, as 90% of individuals drink milk, along with West Africa, the middle east, and south Asia (Liebert et al., 2017).

With the growth in human population, the animal-based products have noted an uptake in demand. As per the estimates, by the end of 2050, the main food security challenge would be access to nutrient-dense foods like dairy and meat, instead of provision of adequate calories (Nelson et al., 2018). Even with the apparent advantage which the animal-based products offer to the human population as being an important nutrient source, the image of meat and milk has diminished, along with their very role as being a healthy diet being questioned. The shift in consumption patterns of dairy and meat products, specifically with the high fat content, has shifted in the last five decades, owing to the changes in policy, public health messages, dietary guidelines, and consumer perception (Rico, 2021).

In the recent decades, the choices of consumers have seen a generalized feat of fats, resulting in people looking for reduced fat foods, as these are deemed as a healthier alterative to the full-fat options, as the goal is to reduce the calories and fat intake, along with the risks pertaining to obesity and heart problems. One can take example of Canada, where avoidance of milk has become a prominent aspect, showing a linear decline, Fig.1 (Rico, 2021).

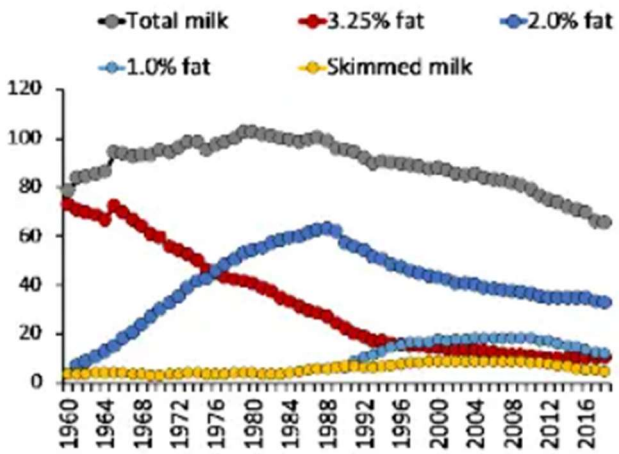

Fig.1: Decline in Milk Consumption in Canada (Rico, 2021)

As is the case with milk avoidance, there is also a focus on new beverages which have a plant-based origin as it has less saturate fats content, which has essentially led to the milk of cow being replaced in diet, with aspects like almond milk and soy milk. Apart from this, the more recent nutrition guidelines as have been shared in Canada show that the foods intake is limited for items with saturated fats, due to the interest in bringing down the LDL Cholesterol (Health Canada, 2019). As against the present perception and official dietary advice, the crucial literature body has shown that challenges the views associated with saturated animal fat consumption on human disease. These studies have highlighted in full-fat dairy and dairy in general, could bring down the risks of CVD. In addition, the suggestions of recent studies show that full fat dairy could actually help in protecting from the chronic diseases and obesity (Rico, 2021).

The WHO report of 2015 showed the meta-analysis from 10 cohort studies that depicted a positive relation between the processed and red meat, and colorectal cancer, which was a crucial finding (Bouvard et al., 2015). Initially, eight hundred observational studies were considered by the WHO pertaining to the association between meat and cancer, Fig.2 (Foster 2015). Though, the findings given by the WHO were based on fifty-six studies that looked at colorectal cancer. As per their assessment, there was an estimated 17% increment in risk with per 100g/d of red meat, along with an 18% increment with 50g/d of processed meat. As a result of this, the red meat was classified as probably carcinogenic, while processed red meat being labelled as carcinogenic. An important aspect here was that these conclusions were based primarily on the observational studies that were limited to the ability of establishing casual inferences and which were at a high risk of confounding (Rico, 2021).

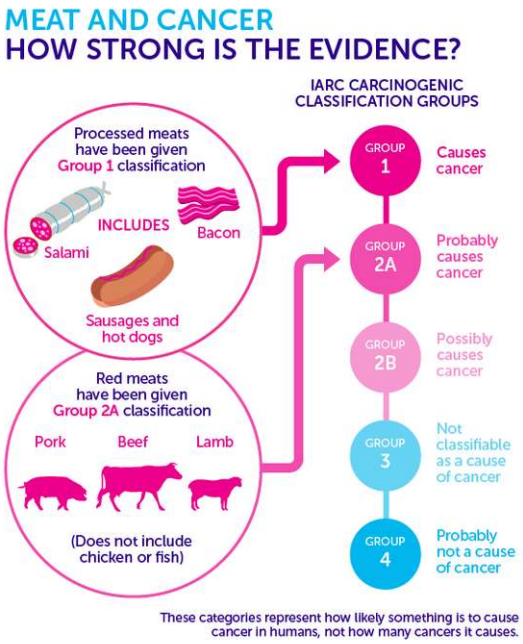

Fig.2: (Foster, 2015)

As against this, the study performed by Jonhston et al. (2019) analysed four parallel systematic reviews that highlighted the impact of processed and red meat on outcomes of cancer and cardio metabolic, using both observational studies and randomized trials. A panel of fourteen members covering seven nations was created in order to offer suggestions on the basis of evidence quality. The suggestions put forth by the panel covered the need for the adults to continue consumption of both the type of meat. In addition to this, the committee also gave the recommendations based on strict methodology, including the GRADE (Grading of Recommendations, Assessment, Development and Evaluation) methods and NutriRECS (Nutritional Recommendation) guideline development process (Johnston et al., 2019).

In order to conclude basis, the two divergent findings, and reference can be drawn to the work of Fogelholm et al. (2015) that shows the manner in which the epidemiological research on meat and chronic disease can easily be resolved through the consideration of confounding factors. An example of this is the strong association between consumption and meat, and a low-quality diet, absence of physical activity, and smoking, in both genders i.e., men and women that complicated the manner in which observational studies had to be interpreted. Apart from this, the evidence pertaining to claims for human health and food were based on different studies with varied degrees of casual strength, which went from the observational studies to the controlled randomized clinical trials. There has been some perspective given on the frequency of observational claims by Young and Karr (2011), where they have stated how such claims have failed to replicate at 80% alarming rate. In addition, there were around 10% cases in which the testing in clinical trials, of the claims from observational studies, moving majorly in opposite direction. This led to the suggestion being placed that any claim that came from an observational

study was probably wrong, in the sense of replication not taking place, where rigorous testing was undertaken.

This means that assessment of the observational evidence which was related to the dietary intake to the outcomes of common disease was problematic at the very least (Pentice, 2014). An example of this can be seen in the validity of observational studies that can be compromised by placing necessary reliance on self-reported food intakes, and the same could be complicated even further by impact of confounders, to the likes of lifestyle factors which make impact the association. It can be stated that some of such problems in the claims, were based on the ecological studies like diet-heart hypothesis, which loses the validity in context of the stronger evidences like prospective cohort studies and RCTs, as these have contradicted the original presuppositions (Ramsden et al., 2016). Even with such limitations, the observational studies' interpretation pertaining to health outcomes and dairy intake could be useful investigation and validation starting point in several cases. Nonetheless, the causation can only be derived when a proper and controlled experimentation takes place..

MATERIALS AND METHODS

In order to undertake the present study, the use of secondary data collection was done, whereby the findings and contributions of various academicians was used. In addition to this, focus was laid on drawing out from the recent literary findings, so as to show the shift from the earlier beliefs to the paradigm shift discussed in previous parts of this work. The literature study was researched by going through several databases, so as to derive from the contributions of the different scholars. The method used to present this work was systematic literature review, which allowed for the present researcher to highlight the stances put forth by the scholars in context of impact of animal products on the human health. The primary or experimental based study was not adopted in this work, as the focus was to highlight the works of different authors, to come to a conclusion basis the present findings, instead of trying to establish new findings. The reason for this stemmed from the need to show a comparative stance regarding the manner in which animal products are impacting human health now, in comparison to the standard or known facts.

RESULTS AND DISCUSSION

The literature analysed in the previous section highlighted that the conception of animal products being a healthy or well-balanced diet, is not the exact truth. This is because of the fact that there are chances of a person consuming more protein that is needed by an individual's body, and even for their future and that for the environmental safety. This is the other side of the animal-based product intake. The consumption of animal-based products does bring an increased chance of obesity, cardiovascular problems, heart disease, diabetes, and high cholesterol. For most nations, heart disease is the primary cause of deaths. Switching to plant-based diet can help a person in reducing their chances of dying due to heart disease by nearly 20%. With regards to milk, it has been shown that it is a key contributor of energy in people. However, by drinking milk, a person is also in taking the sex hormones that have been forced in cows in order to quicken their growth. There have been studies that have shown that the intake of such hormones can result in the cancer risk being increased, which is another leading cause of death in several nations. As per

the US President's Cancer Panel, cancer is a disease that is diagnosed in 41% of the people during their lifetimes. By switching to vegan or vegetarian diet, a person can bring down the cancer risk by nearly 34% (Izadpanah, 2017).

There have been claims that show that resorting to sushi on a regular basis, can result in a person increasing their chances of mercury intake, which could result in mental imbalance of a person. The same was equated to the Hatter going mad in the movie called The Alice in Wonderland. Even though the quantity is not sufficient to scatter a person's brain, but the same could be passed on to the offspring of a person, causing certain learning disabilities, along with the motor skills loss. And it is not just the mercury and sushi being a combination, there are other meats that are full of toxins. Then there are the chances of a person contracting salmonella and ringworm. There have been studies that have highlighted the manner in which bacteria strains have turned into superbugs, making them impossible to defeat with antibiotics. With all these aspects of obesity, superbugs, high cholesterol, toxin intake, and diabetes being presented, along with the other aspects as well, the animal-based diet proves to be a serial killer for the people (Izadpanah, 2017).

Based on these findings, the balance favours the vegetarians. The influence of diet can also be derived from lifestyle of a person, coupled with the region or religion they come from. The following chart shows that India leads the world in being vegetarian owing to its religious beliefs. Yet, the nation drinks milk, which as an animal product, can have its own curses.

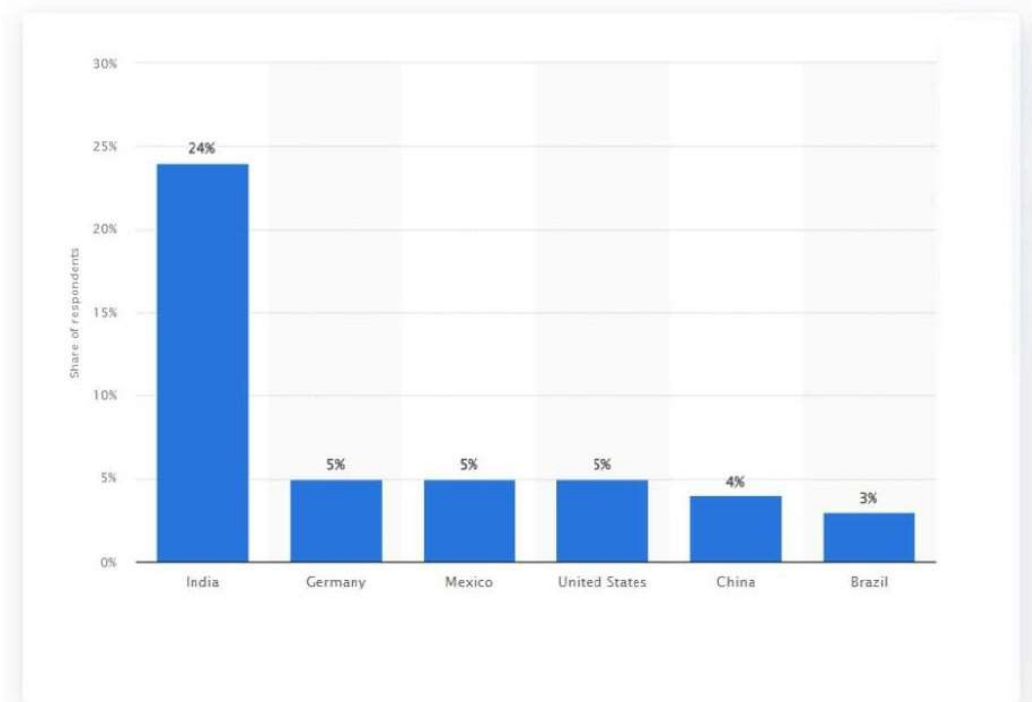

Fig.3: (Share of Vegetarians in Major Countries Worldwide; Statista, 2022)

CONCLUSION

The world is changing nearly every day, and with each day, new research and contributions are brought to light. In such cases, it becomes crucial to keep up to date with the recent findings in

varied areas. One of such areas is related to the manner in which animal products can prove futile for the human health, particularly from the stance of the shift from these being a crucial aspect of healthy diet, to these being potential cause of cancer and heart diseases in people. In addition to this, the manner in which the livestock is increased, by resorting to things like hormone injections, the humans are eating toxins and chemicals, which are harmful for them and their future offspring. Possibly, this is the reason why the need is to reconsider the use of animal products in the diet of a person, along with bringing in measures that could help in healthier sourcing of animal-based products. The recent studies have been successful in reversing the earlier known "facts", presenting the need for further study in this area, to strengthen the contentions put forth regarding meat being cancerous and animal products having a negative impact on the human health.

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