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By Naomi Katayama, Shoko Kondo, Chika Aoki, Ai Kagazume, Mari Tashita & Kasumi Yano

Nagoya Women's University

Abstract- The sense of smell is related to the quality of life and not only can protect oneself from dangers such as food poisoning, gas leakage, and fire. But also various pleasures such as enjoying a delicious meal and the scent of flowers. This time, we report that we conducted an olfactory cognitive test using open essence on healthy 45 female university students. The Open Essence (made by FUJIFILM) has the smell as same as the odor Stick Identification Test (OSIT-J). The aromas used in the open essence includes curry, perfume, Japanese cypress, India ink, menthol, rose, wood, stinky socks/sweat, roasted garlic, condensed milk, gas for cooking, and Japanese mandarin aromas. This 12 different odorants perception is not necessarily culture-free; the Japanese version employed. Depending on the type of odor, some of them were difficult to understand, and some that were easy to understand. The most will-recognized odor was the smell of stinky socks/sweat, and the most hard to understand odor was mandarin orange. In the future, it is necessary to individually examine not only the number recognized in the olfactory recognition test but also the odor that was understand.

Keywords: olfaction test, open essence, cognition, female, university student.

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Results of the Olfactory Cognition Test Performed on 45 Female University Students

Naomi Katayama [α], Shoko Kondo [σ], Chika Aoki [ρ], Ai Kagazume [ω], Mari Tashita [¥] & Kasumi Yano [§]

Abstract- The sense of smell is related to the quality of life and not only can protect oneself from dangers such as food poisoning, gas leakage, and fire. But also various pleasures such as enjoying a delicious meal and the scent of flowers. This time, we report that we conducted an olfactory cognitive test using open essence on healthy 45 female university students. The Open Essence (made by FUJIFILM) has the smell as same as the odor Stick Identification Test (OSIT-J). The aromas used in the open essence includes curry, perfume, Japanese cypress, India ink, menthol, rose, wood, stinky socks/sweat, roasted garlic, condensed milk, gas for cooking, and Japanese mandarin aromas. This 12 different odorants perception is not necessarily culture-free; the Japanese version employed. Depending on the type of odor, some of them were difficult to understand, and some that were easy to understand. The most will-recognized odor was the smell of stinky socks/sweat, and the most hard to understand odor was mandarin orange. In the future, it is necessary to individually examine not only the number recognized in the olfactory recognition test but also the odor that was understand.

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I. Introduction

In recent years, research on olfactory disorders has attracted attention as an early symptom of COVID-19 and Alzheimer's dementia. The olfactory disorder refers to a state in which an odor cannot felt tolerance, and the most common cause is nasal sinus disease. There is a part called the olfactory mucosa in the part of nose that corresponds to the ceiling of the left and right nasal cavities. When an odorous substance in the air adheres to this olfactory mucosa, a stimulus signal transmitted to the brain through the olfactory nerve, and it feels as an odor. Olfactory disorders classified into 1) Respiratory, 2) Peripheral, 3) Central, depending on where the odor transmission pathway is impaired. Corona virus, which is currently a problem, is a peripheral olfactory disorder, and olfactory mucosal olfactory disorder in which the olfactory mucosa degenerates is suspected. Alzheimer's olfactory disorder is a central olfactory disorder in which the brain that processes odor information is damaged.

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Therefore, this study focused on the perception of smell and aimed to understand the actual situation of 12 different kinds of odors closely related to Japanese life in each age and gender. To begin with, we report on the olfactory perception of the young females.

II. Materials and Methods

a) Participants

The participants were female students (n=45) who voluntarily participated in olfactory tests. Females students were third-year, fourth-year, and graduate students. Age ± standard deviation was 20.42±0.50 years old. The maximum was 21 years old, and the minimum was 20 years old. They were healthy, not going to the hospital and taking no medication. They were self-reported and had no colds and no fever.

b) Assessment of odor identification

The Odor Stick Identification Test (OSIT-J) was used to assess odor perception for many years for our study. This test possesses high reliability and validity 1). The commonly used procedure resembles that of the San Diego Odor Identification Test 2). The aromas used in the OSIT-J include curry, perfume, Japanese cypress, India ink, menthol, rose, wood, stinky socks/sweat, roasted garlic, condensed milk, gas for cooking, and Japanese mandarin aromas3,4).. This 12 different odorants perception is not necessarily culture-free; the Japanese version was employed 3,4).. Each fragrance was enclosed in microcapsules made of melamine resin3, 4).

In this study, we use The Open Essence (made by FUJIFILM) has the smell as same as the odor Stick Identification Test (OSIT-J). The open essence is a card type, and the scent had already applied to the card. When participants open the card, it has the same scent as OSIT-J. Each correct answer was scored as one point with the total performance score ranging from 0 to 12 points 5). We defined it as follows: normal range as more than 6 points, borderline as 3 to 5 points, and abnormal as less than 2 points 5). All of these methods are the same as in the previously reported paper 5).The results are that the perceivable odor was the average on the12 types of 8.5±1.7.

c) Ethical review board

This study conducted with the approval of the Ethical Review Board (Nagoya women's university Ethics

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Committee: 'hitowomochiitakennkyuunikansuruiinnkai'). The approval number is 30-11.

III. Results

a) Odor identification (number of the correct answers)

Twelve different kinds of olfactory cognitive tests conducted on female students by using the Open Essence. The results shown in Table 1. When there are six or more types of recognition among the 12 types of odors, it is considered as an acceptable range (we call it a normal range). This time, 44 out of 45 female students could recognize more than six kinds of odors. By the way, one student had four types of perceptible odors. The average value of the olfactory recognition test results of 45 female university students was 8.5±1.7 (Table1. and Table 2.).

Table 1: Results of olfactory cognition test using open essence in female university student (n=45)

	0	1	2	3	4	5	6	7	8	9	10	11	12
Open essence (number of student)	0	0	0	0	1	0	4	10	5	11	10	3	1
Open essence (%)	0.0	0.0	0.0	0.0	2.2	0.0	8.9	22.2	11.1	24.4	22.2	6.7	2.2

Table 2: Results of olfactory cognition test using open essence in female university student (Average number of recongnition ± Standard Deviation)

	Numver of recognition±Standard Deviation
Open essence (n=45)	8.5±1.7

b) Odor identification (percentage of each smell)

Next, Table 2 shows the results of individually examining each of the 12 odors. This scent of India ink is the odor that we have always smelled when we calligraphy in elementary school. However, the correct answer rate was as low as 51.1%. The smell of wood had a correct answer rate of 71.1%. Some students dislike perfume, and the correct answer rate was 55.6%. Menthol was a poultice scent, and the correct answer rate was 93.3%, which was very high. The scent of mandarin orange seemed to be very incomprehensible, with the lowest correct answer rate being 28.9%. The scent of curry was 97.8%, probably because it is a familiar odor in daily life. The correct answer rate for household gas was 86.7%, which was high. The scent of rose is the scent that female prefer, but the correct answer rate was 82.8%. Cypress is a wood that often used for furniture in Japan, and the correct answer rate for this scent was 80.0%. All the 45 female students recognized the smell were stinky socks/sweaty odors. The correct answer rate of condensed milk was 68.9%. The odor of stir-fried garlic had a correct answer rate of 33.3%, the second-lowest next to mandarin oranges (Table 3.)

Table 3: Results of olfactory cognition test for 12 different odors in female university students using open essence (n=45)

	Indea Ink	Wood	Perfume	Menthol	Mandarin orange	Curry	Household gas	Rose	Cypress	Stinky socks/Sweaty	ndensed m	Stir-fried garlic
Open essence (number of student)	23.0	32.0	25.0	42.0	13.0	44.0	39.0	37.0	36.0	45.0	31.0	15.0
Open essence (%)	51.1	71.1	55.6	93.3	28.9	97.8	86.7	82.2	80.0	100.0	68.9	33.3

IV. Discussion

An olfactory cognition test was performed using open essence on 45 healthy female university students who did not have a cold, did not have a fever, and did not take any medicine. The perceivable odor was the average on the12 types of 8.5±1.7. Since they were healthy in their twenties, their olfactory cognitive ability was high. However, looking at the 12 odors individually, there were odors with a high percentage of correct answers and low odors. And the odor of mandarin orange and the odor of stir-fried garlic had low accuracy. It found that these two kinds of odors are difficult to understand even though they are female university students, although they are the odors that they come into contact with every time they eat. However, almost everyone knew the smell of curry. Curry is a familiar scent that young females often eats. Most female students could also recognize the smell of stinky socks/ sweat and the smell of household gas. Since the odor of socks is a rotten odor, understanding this odor helps prevent food poisoning. Also, understanding the smell of house hold a gas helps prevent gas explosion and gas poisoning. The authors performed olfactory cognition tests using open essence in the same way as this time on the elderly in the past (Naomi katayama 2020). As a result, in the case of older adults, the number of odors recognized by the olfactory recognition test was about 6-7 on average. It can see that the results of the olfactory cognition test of young female university students are well. In the future, we could like to obtain the results of olfactory cognition tests for

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students in their teens and middle-aged age and compare them by age group.

V. Conclusions

An olfactory cognitive test performed on young female university students in their 20's using open essence. As a result, out of the 12 odors, 8.5±1.7 odors were recognized on average. This value is higher than that of the elderly score, and the odor is well known. Depending on the type of odor, that was difficult to understand, and some that were easy to understand. In the future, it is necessary to individually examine not only the number recognized in the olfactory recognition test but also the odor that recognized. Furthermore, we think that we can understand the age-related changes in olfactory cognition by examining the changes with each age.

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Baseline Data on Trend of Maternal Mortality in Tanzania using Administrative Data and its Policy Implication. 2018 Report

By Dr. Ahmad Mohamed Makuwani, Dr. Phineas Ferdinand Sospeter, Dr. Leonard Subi, Dr. Mukome Anthony Nyamhagatta, Dr. Ntuli Kapologwe, Mr. Habib Ismael, Dr. Naibu Mkongwa, Dr. Mpoki Mwasumbi Ulisubisya & Prof. Muhammad Bakari Kambi

Abstract- *Background:* Globally, Civil Registration, and Vital Statistics is the recommended method to track births and deaths. This system is weak in developing countries, including Tanzania. Other systems that may be used to report deaths, especially maternal mortality include integrated Disease Surveillance and Response (IDSR) and DHIS 2.

Tanzania has been using Demographic and Health Survey to track maternal deaths from as early as 2000. This study uses a sisterhood method which is conducted every five years, tracking events of the past ten years. It collects maternal deaths related from sisters of the same mother from sampled 10,000 households out of 11,000,000 available in Tanzania. The methodology uses wide confidence intervals, which affect its reliability. Therefore, the presented data is the outcome of tracking maternal deaths data using routine system from health facilities and communities in Tanzania Mainland.

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Methodology: Data collected were from all regions, all health facilities, and communities in Tanzania Mainland using National Governance structures on a daily basis. No funds were used to collect data except for airtime to make calls and internet connectivity.

Results: A total of 1,744 maternal deaths were mapped from health facilities and community. This number was adjusted for abortion 5%, ectopic pregnancy 5%, community deaths 10%, and unreported 5%. The final adjusted number of maternal deaths was 2,138. Through a regional comparison of maternal deaths with population density, regional variation was critically noted. The data showed that 70% of maternal deaths were caused by PPH (29%), Eclampsia (18.9%), Anemia (8.8%), puerperal sepsis (7.9%), and suspected venous thromboembolism (5.5%). Anesthetic complication contributed to 3.3% of all maternal deaths.

Conclusion: Tanzania's health sector is mature enough to use routine data on maternal deaths to inform policy. However, a comprehensive, rigorous study needs to be conducted in Tanzania to come up with a better methodology of estimating maternal mortality ratio using routine data.

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I. Literature Review

The Millennium Development Goals (MDGs) launched in 2000 required all United Nations member states to be committed to increase investments to improve the life of people worldwide. Goal number 5 was among the goals that needed member states to reduce the magnitude of maternal mortality by 75%. Tanzania is one of the members in the global community; she committed herself to meet the goal above by reducing maternal mortality ratio to 193 deaths per 100,000 live births by 2015. To monitor progress, the DHS study was conducted in 2005, 2010, and 2015, and these showed that maternal mortality ratio was 578 per 100,000 live births, 454 per 100,000 live births, and 556 per 100,000 live births, respectively (1, 2, 3).

Tanzania, in the last two decades, has invested heavily in socioeconomic development, especially in health, by increasing modern contraceptive use among women of reproductive age from 7% (1990) to 32% (2016) and 38% (2019). Furthermore, there was an increase in the health work force to almost 52% (2018), and EmONC services availability was 32% in 2015. TDHS 2016 report shows that the proportion of women attending the fourth antenatal clinic was 51%, delivery conducted by skilled birth attendants was 64%, and RMNCAH scorecard (January-March 2019) showed that postpartum attendance was 78% (3, 4). Furthermore, Tanzania enjoyed, an increase in political commitment for health shown by Tanzania becoming a co-chair of UN commission on Information and accountability for women and children (2010/2011), launch of Tanzania Sharpened One Plan (2014-2015) and a significant increase in resource allocation in health systems that commenced from 2016 by the new Government led by His Excellency Dr. John Pombe Joseph Magufuli, the 5th President of United Republic of Tanzania (5, 6). The Lancet countdown report to 2015 observed that although Tanzania between 1990 - 2015 doubled the population and total budget allocated to the health sector, and increased three-times donor funding for child health and HIV/AIDS interventions, these

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increments did not correlate with decline in maternal and newborn deaths (7).

From 1990, Tanzania has been tracking data on maternal process indicators and outcome by relying on surveys, demographic and health surveys (DHS), and population census. The DHS developed in late 1980 use sisterhood methodology whose questions targets adult sisters from the same mother enquiring about the outcome of fertility history of female siblings. The method is highly limited due to the use of a small sample size aiming at reducing cost. For example, DHS conducted in Tanzania 10,000 households out of 11,000,000 households have been traditionally being selected. Understanding its limitation, WHO recommends using this methodology for a population with a high fertility rate as it is insensitive to capture maternal deaths when Total Fertility Rate (TFR) is below 3 (8). The major disadvantage of this methodology is because the result emanating from the sisterhood method relates to a point around 10-12 years. As a result the method cannot provide a current estimates for the year of the survey hence making it neither useful to monitor changes in maternal mortality nor to assess the impact of safe motherhood programs in the short term (3). Mgawadere, et al. (2017) echoed the guidance by WHO by showing that Population or household surveys may be critically important to inform the situation on maternal mortality in countries where routine information systems are weak or non-existent (9).

II. Rationale

Tanzania has been investing heavily with high political commitment stewardship in improving health, especially RMNCAH services in areas of family planning, skilled birth attendants, EmONC services, and provision of enabling environment. There has been a big appreciable improvement in service delivery, as shown by an increase in users of modern contraceptive services, ANC-4 attendees, delivery conducted in the health facility and skilled birth attendant, and proportion of women receiving postpartum care (1, 2, 3).

Improvement in the Tanzania transport system has a significant contribution in reducing the second level delay of access to receive health care services. The availability of good roads and means of transport facilities is critical in achieving this goal. Tanzania Road Authority (TANROADS) in 2018 reported that 67.2% (8,211 KM) of the roads in Tanzania are paved with almost all regions and the majority of districts connected to this network hence compressing the catchment population between these roads (10).

Significant development has also been made in improving available means of transport that range from vehicles, good buses, and motorcycles. The increase in the motorcycle population in East Africa, so as Tanzania, has made a noticeable difference in the transport of critically ill patients, pregnant women during labor and complications by reducing the time taken, from the hard to reach areas to a service delivery point of care. Chen et al. (2017) in Kigoma region showed that motorcycles have made a big difference towards the improvement of access of EmONC health facilities. The report showed that 13% of live births took place in areas where women were able to access health facilities within 2 hours on foot and 33% in areas where motorized vehicles, including motorcycle, were needed to reach the EmONC health facility within 2 hours (11). Save the Children in Kenya (2016) showed testimony from women and community that motorcycles were beneficial in making sure women in need reached in time to a nearby EmONC health facility just in time receive life-saving services for themselves and that of the newborn (12). Schmitz et al. (2019) in Uganda demonstrated that the proportion of women of reproductive age accessing care within 2 hours from 2016 by motorcycles took an upward trend for a facility that provides any EmONC services and comprehensive EmONC services from 61% to 72%, and 51% to 70%, respectively (13).

Literacy is a key in gender dynamics towards having liberty in deciding where to seek care, that determine survival and well-being along a continuum of women cycle from pre-pregnancy, antenatal, labor and delivery, and postnatal care. Tanzania 2019 report by UNESCO showed that there is an increase in literacy among girls aged 15-24 years from 78% in 1990 to 85% in 2015, making more girls accessing more information to meet their need in sexual reproductive health (14).

From 2015 the health sector has been following up the maternal outcome data using routine data. The language at the national and global levels on the number of MD has always been higher at around 11,000 deaths per year as reported by TDHS 2016. These numbers contradicted those reported by regions, which stands at lower (3). In essence, the situation was like the national and global levels were forcing regions to accept the numbers, which are imposed on them. For this reason, the Government of Tanzania, in 2018, undertook a decision to increase stewardship to follow up MD using MPDSR guideline by using national governance structure after understanding that the use of CVR, DHIS2, and IDSR was very low (15).

Therefore this baseline report aimed to use available routine data to:

1. Assess and ascertain the real-time situation of MD in Tanzania using administrative data.
2. Analyze causes of MD to inform policy interventions.
3. Advise policy on best approaches to use in maternal data collection.

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III. Methodology

This report describes the process of counting MD in Tanzania conducted in January - December 2018 in line with Every Woman Every Child Initiative.

Using a strong Governance structure available in Tanzania, MD data collected were from all health facilities, communities, districts, and regions.

a) Setting the ground for data collection

In 2015 the National MPDSR Guideline was ratified to be used in Tanzania Mainland in line with WHO and FIGO recommendations. The following year (2016), the Guideline was disseminated to Regional Health Management Teams (RHMTs), Council Health Management Teams (CHMTs), and Health Facilities Management Teams (HFMTs) of all the 26 regions. The Guideline requires notification for every maternal death that has occurred from the health facility and community settings within 48 hours. It also directs to the review of MD within seven days by the health facility maternal death review committee. Furthermore, the committee is required to regularly convene after every notified maternal death or after the occurrence of a near-miss case or monthly when there is no reported maternal death (15).

Similarly, the Guideline directs the formation of a district council, which meets monthly and regional MD review committee, meeting after every three months. The Ministry responsible for Health further appointed a National Technical Committee for Maternal Death Reviews, which is supposed to meet bi-annual to receive and discuss MD regional reports, make analysis, provide recommendations and sometimes effect change in various guidelines in practice based on recommendations (15).

Aligning to WHO guidance through a 2004 guideline (Beyond the numbers), the process of maternal death review follows a principle of strict confidentiality that information emanating at each level should not leak to outsiders, and all information used and collected should be kept under lock and key. Confidentiality leads to openness in describing causes and factors leading to adverse maternal outcomes. The guideline goes further to emphasize that the process should be anonymous, done under a non-threatening environment, and never the review process should be means of apportioning blame or provide a basis for litigation or management sanctions (15, 16).

In 2018, the Ministry urged local data experts to discuss a possibility of using routine data to inform estimation of maternal and U5 deaths. Experts noted that in Tanzania, Civil Registration and Vital Statistics (CRVS), DHIS-2 and Integrated Disease Surveillance System (IDSR) were not strong enough to track maternal and under-five deaths. Also, experts acknowledge that Tanzania has a solid governance structure that may be improvised and used to record/track health facility and community MD. Likewise, both health facilities and community were observed to have parallel systems and tracking tools for all deaths. The expert review further identified that Urassa et al. (1994) a study from Muhimbili University of Health and Allied Sciences (MUHAS), showed that only 10% of all MD, reported in Ilala district, occurred in community setting and the rest were from within health system (17).

IV. Data Collectors

Zonal, Regional and District Reproductive and Child Health Coordinators (RCHco) were the strategic officers responsible for January - December 2018 maternal death data collection. The data collection was in line with the National MPDSR Guidelines. The District RCHCos were directly involved in MD notification, reviews, and data collection from health facilities that include dispensaries, health centers, and hospitals, and community within the district council. The collected data from the district council were submitted on a weekly basis to Regional and Zonal RCHCos, who finally transmitted it to the National level by using a designated MPDSR email address for only data collection.

a) Data Collection Tool

A standardized maternal death data collection tool was used to collect the following individual variables; reporting region and district, health facility or community, date, age, gravity and parity, and clinical cause of death. This tool captured suspected MD notified and submitted to the Regional Medical Officer whose duty was to approve before submitting to the Ministry of Health at Reproductive and Child Health Section. As per MPDSR Guideline, all reported MD had to be reviewed within 7-days of occurrence and categorized to ICDM 10 classification at health facility supported by district and regional experts (15).

Notified data of MDs from regions were consolidated into the Excel spreadsheet, shared, verified, and validated by regions on a monthly, quarterly, and semi-annual basis after the review. The collected maternal death data were disseminated on a weekly basis at the Department of Preventive Services, quarter and semi-annual at MOH management. Final data were disseminated to different levels and various platforms, including scientific conferences, Government, and stakeholders meeting. Through an official letter signed by Permanent Secretary, and the final MD report was submitted officially to the National Bureau of Statistics.

b) Data quality control

To ensure data quality, the District Reproductive and Child Health Coordinator made active surveillance and the follow up of any reported probable-suspected or confirmed maternal death from a health facility or

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community setting. For reported suspected community maternal death, a team of district Maternal Death Review Team participated in the funeral and later after about a week returned to conduct a verbal autopsy. Furthermore, the Regional team implemented quarterly supportive supervision to hospitals and health centers where they did verification and validation of reported MD.

c) *Controlling the source of error in calculating the total number of MD*

The maternal death data collected are required to be representative of the actual situation in the Country hence a need for employing some statistical assumption. In Tanzania, the current institution delivery is 80%, and the postnatal visit is around 78% (18). Mgawadere et al. (2017) report noted that to use health facility data to estimate the reliable magnitude of maternal mortality, institution delivery should be more than 85% (9). In approximating total MD using any method, the biggest challenge is to account for ectopic pregnancies and abortions, reported to contribute 5% and 8% of MD, respectively (19, 20, 21) (Box 1).

Box 1: Assumption of possible missed MD (MD)

In calculating number of MD following assumption were made:

i. Annual counted no. of MD in 2018 (AMD)
ii. MD that my occurred in the community 10% (17).
iii. MD that were caused by ectopic pregnancy shall be 5% (19).
iv. MD that were caused by abortion shall be 8% (20).
v. Proportion MD that were unreported just assigned to be 5%.

From the assumption above the actual collected maternal deaths were adjusted accordingly.

Box 2: Adjusted MD

Summary of adjusted no. of MD due to:

i. Ectopic pregnancy adjusted from 1% (N=18) to 5%= 90
ii. Abortion adjusted from 2.6% (N=46) to 8%=142
iii. Community adjusted from 3% (N=53) to 10%=177
iv. Unreported cases adjusted by 5% from all reported deaths=102
v. Calculated no. live births 2,050,332

Adjusted no. of MD is **2,138,** which is the same as 104MD per 100,000 live births

d) *Evaluation strategy*

In this documentation, the intention is to demonstrate the implication of follow up of MD conducted in 2018 and an ongoing process in monitoring and evaluation of RMNCAH interventions by measuring the outcome. The presentation of data will base on reporting simple ratios.

V. Results

These data were collected from both health facilities and community, and 639 health facilities provided data on MD. These health facilities were both national referral one national hospital (1), three zonal and 28 regional referral hospital and district hospitals, health centers, and dispensaries. The number provided makes 100% coverage of all health facilities which reported MD in 2018. Also, 3% of reported MD occurred in the community. In this report, all 185 district councils had at least one maternal death; none of the districts had zero MD for the entire year.

Generally, the total number of MD was 1,744, with an indication that the majority of MD occurring in the health facilities as only 53 (3%) reported from the community.

Using the assumption that the cause of maternal death by ectopic pregnancy is 5%, abortion 8%, unreported 5%, and community 10%. Recalculated estimated number of MD was 2,138, a count that is within the earlier expected number of MD that range from 1,500 to as high as 2,500 MD.

a) *Calculated Maternal Mortality Ratio*

The analysis went further to calculate maternal mortality ratio (MMR) based on the projected number of MD as per regional and national levels. The data showed that the estimated National maternal mortality ratio was 104 deaths per 100,000 live births with 11 regions standing above the national average, which are led by Dar Es Salaam with MMR of 221 MD per 100,000 live births and Tabora region had the lowest MMR with 52 deaths per 100,000 live births below the national average.

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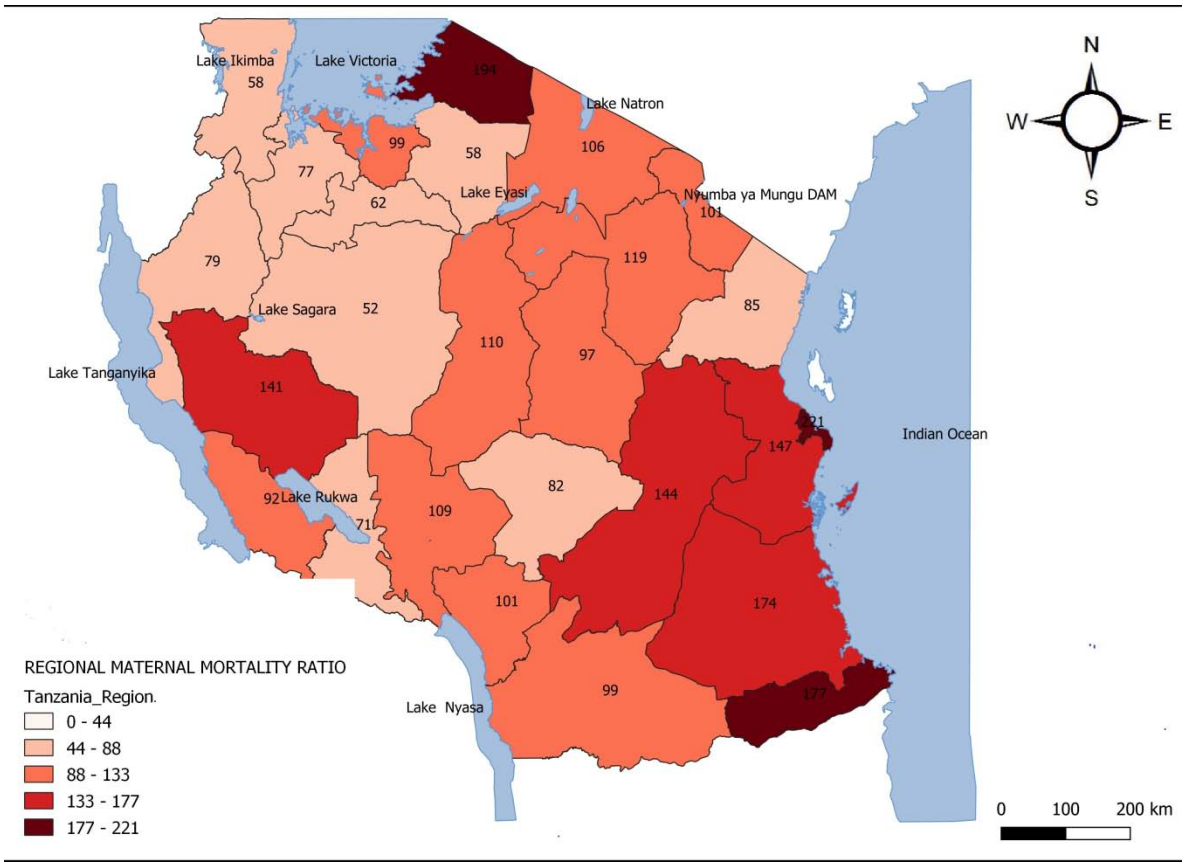


Figure 1: Spatial Mapping of MMR in Tanzania Using Administrative Data of 2018

b) Distribution of MD

MD data in 2018 were not equitably distributed across the country with the distribution showing that Dar Es Salaam, Mwanza and Morogoro regions were the top three regions with the highest number of deaths accounting for 26.4% (N=462) of the burden, while Songwe, Manyara and Njombe regions were taking the tail, contributing only 4.8% (N=84). A different picture was observed when the number of MD was weighed against the total population in the region. Five regions, namely Katavi, Mtwara, Pwani, Lindi and Morogoro regions had the highest weight with 8.2, 5.7, 5.5, 5.3 and 5.1 MD per 100,000 population per year, respectively, and Njombe region showed to have the lowest weight per population, which was 1.5 MD per 100,000 population per year. In this analysis showed that, although Katavi region has the smallest population of 650,000 people compared to other regions, this region had the biggest weight per population of 8.2 MD per 100,000 population than Dar Es Salaam region with the biggest population of 5.5 million people with the least weight per population of 3.4 MD per 100,000 population.

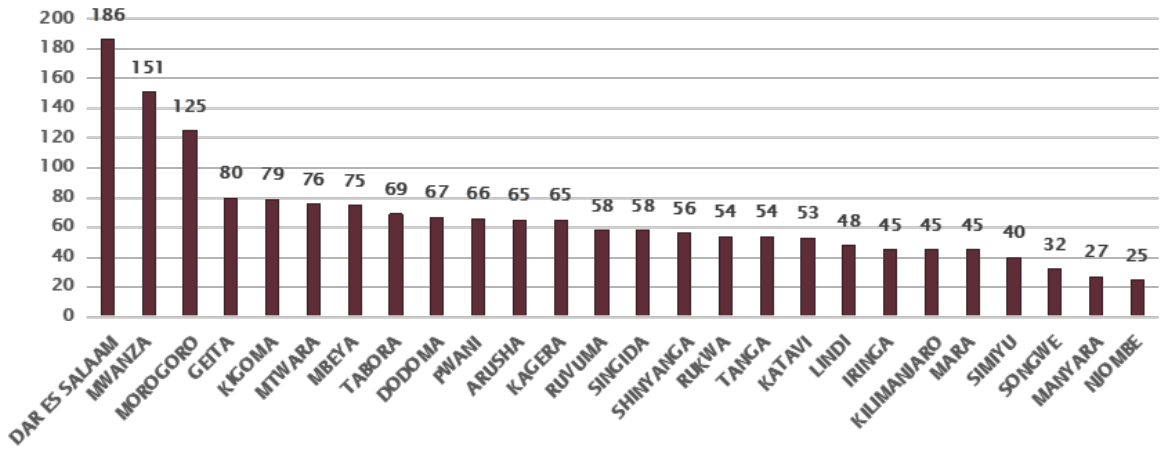


Figure 2: Absolute (actual) No. of MD before adjustment per region (N=1,744)

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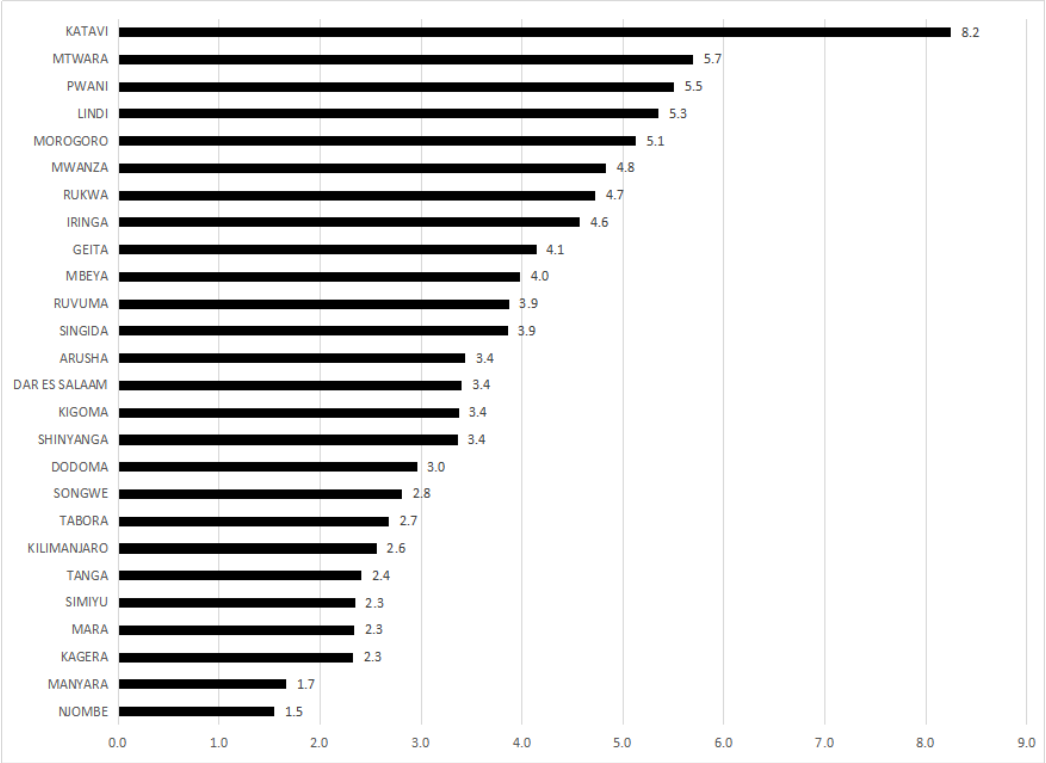


Figure 3: Weighted No. of MD per population

c) Cause of Maternal Deaths

Data reported in 2018 on MD provides enormous information regarding where and what caused MD, and this was possible through MD reviews conducted using a National MPDSR guideline at the health facility, district council, regional and national level. Though in Tanzania, the sisterhood method had been the source of estimation of maternal mortality ratio, the methodology consistently lacked to provide critical analysis on the cause and where MD occurred. The 2018 report on maternal mortality showed that 70% of deaths were caused by mainly five major complications, which were Postpartum hemorrhage (29.0%, N=506), Eclampsia related complication (18.9%, N=329), Severe anemia in pregnancy (8.8%, N=154), obstetric sepsis (7.9%, N=139) and suspected venous thromboembolism (5.5%, N=96) and 32% of deaths occurred in referral hospitals, which are regional, zonal and national referral hospitals.

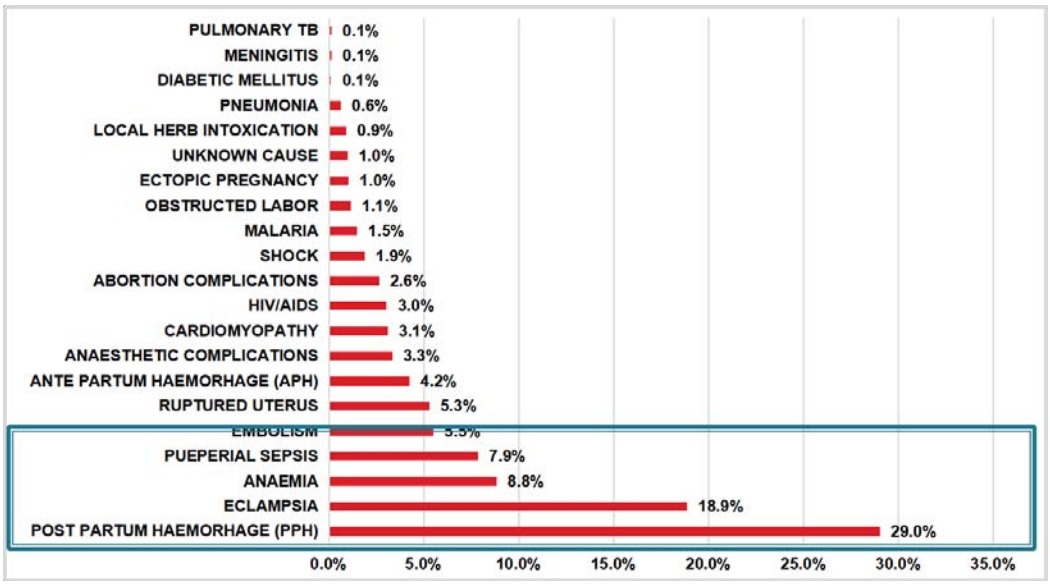


Figure 4: Causes of MD as classified using ICD 10 (N=1,744)

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VI. Discussion

Commencing from 2016 - 2019 Tanzania took seriously tracking and use of routine maternal, newborn, and child deaths data in programming and measuring progress. The MD registration has been possible by the use of the strong Country Governance Structure that has enabled to track data on Maternal, Newborn, and Child Health outcome from both health facilities and community. Implementation of MPDSR Guidelines has been a useful tool in the notification and classification of MD. As reported in the previous section, data collection was, and continue to be conducted manually from health facilities and community to district council via District Reproductive and Child Health Coordinators, and at Region level by Regional Reproductive and Child Health Coordinators and finally to the Ministry of Health, Community Development, Gender, Elderly and Children at the Reproductive and Child Health Section. This paper negates the prevailing assumption that that the Country health system cannot track the maternal, newborn, and child health outcome data. Waiswa et al. (2019) observed that under-reporting of pregnancies and birth outcomes is a major issue that needs to be addressed (21). In the case of Tanzania, the development, dissemination, and use of MPDSR Guideline has enabled to great extent to mitigate this challenge of under-reporting.

This report observed that following the adjustment of data using the assumption, the calculated National MMR was 104 deaths per 100, 000 live births with a regional range of as high as 220 deaths per 100,000 live births for Dar Es Salaam Region to as low as 54 deaths per 100,000 live births for Tabora Region. A CDC report tracking decline maternal mortality in Kigoma in 2018 showed that maternal mortality ratio for the Region was 174 deaths per 100,000 live births, twice as much to the magnitude presented in this paper, which is 82 deaths per 100,000 live births. The variation above may be attributed to the methodology used by the later, whose data collection was confined to the health facilities to monitor progress EmONC intervention (22).

The report further shows that when the number of MD is compared with a regional population, a different picture is displayed. Katavi population was leading with the bigger weight of MD per population of 8.2 deaths per 100,000 people, followed by the Mtwara region with 5.7 deaths per 100,000 population. The region which had the least weight was Njombe Region, with 1.5 deaths per 100,000 live births.

Unlike the sisterhood method, which can provide a country MMR for Global level advocacy, the use of routine data carries more information to inform policy and implementation. This paper demonstrated that the top five leading causes of all 70% of MD were postpartum hemorrhage, eclampsia, anemia, sepsis, and suspected thromboembolism. The observation above tally with that of Mgawadere et al. (2017), which observed that health facility MD data in many developing countries provide valuable information on where and why maternal death occurred hence calling for a need to invest in them (9).

VII. Recommendation

Published data demonstrate the value of using health facility data to describe the burden of MD beyond the numbers aligned to Every Woman, Every Child (EWEC) initiative. Finally, it fair to recommend that Tanzania and possibly to other Sub Saharan Countries that the health sector is mature enough to use routine data on maternal deaths to inform policy. However, a comprehensive, rigorous study needs to be conducted to come up with a better methodology of estimate MMR using routine data.

Acknowledgement

Authors would like to express sincere gratitude to all key players of implementation of MPDSR guidelines in Tanzania by making availability of routine MD data in the country. Special thanks should go to all RHMT, CHMT, Regional and District Medical Officers, ZRCHCo, RRCHCo, DRCHCO, Health Facility Management Teams, and RMNCAH implementing partners for working hard to make findings above a reality. Last but not least we thank the Ministry of Health, Community Development, Gender, Elderly and Children team - Department of Preventive Services, Reproductive Health Section for stewardship of MD and other routine data collection.

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Intracranial Subdural Hematoma Post Spinal Anesthesia in Patient Undergoing Segmental Caesarea. Case Report

By Giselle Cristina Vargas Vargas & Edgar Moll

Abstract- Spinal Anesthesia is the technique of choice for segmentary caesarean section, complications are rare but fatal, including intracranial hematoma, which is often confused with post-dural puncture headache, and the pathophysiology is due to tension and tear of the meningeal vessels. We present a case of a patient who underwent a segmentary caesarean section who initially behaved like a post-dural puncture headache and after the blood patch, she was crucified and neurological signs were associated, when they performed a computerized axial tomography showing chronic left subdural hematoma that required surgical resolution; The clinical evolution of the patient was satisfactory, however it can be concluded that these patients must be strictly followed up by specialized personnel for this function.

Keywords: *spinal anesthesia, post dural puncture headache, subdural hematoma.*

GJMR-K Classification: *NLMC Code: WO 200*

INTRACRANIALSUBDURALHEMATOMAPOSTSPINALANESTHESIAIN PATIENTUNDERGOINGSEGMENTALCAESAREACASEREPORT

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Intracranial Subdural Hematoma Post Spinal Anesthesia in Patient Undergoing Segmental Caesarea. Case Report

Hematoma Subdural Intracraneal Post-Anestesia Espinal En Paciente Sometida A Cesarea Segmentaria. Reporte De Un Caso

Giselle Cristina Vargas Vargas [α] & Edgar Moll [σ]

Abstract- Spinal Anesthesia is the technique of choice for segmentary caesarean section, complications are rare but fatal, including intracranial hematoma, which is often confused with post-dural puncture headache, and the pathophysiology is due to tension and tear of the meningeal vessels. We present a case of a patient who underwent a segmentary caesarean section who initially behaved like a post-dural puncture headache and after the blood patch, she was crucified and neurological signs were associated, when they performed a computerized axial tomography showing chronic left subdural hematoma that required surgical resolution; The clinical evolution of the patient was satisfactory, however it can be concluded that these patients must be strictly followed up by specialized personnel for this function.

Keywords: spinal anesthesia, post dural puncture headache, subdural hematoma.

Resumen- La anestesia conductiva de tipo espinal es la técnica de elección para Cesárea Segmentaria, las complicaciones son raras pero fatales entre las que se encuentra el hematoma intracraneal el cual suele confundirse con la cefalea post-punción dural, y cuya fisiopatología obedece a tensión y desgarro de los vasos meníngeos. Se presenta caso de una paciente sometida a cesárea segmentaria quien inicialmente se comportó como una cefalea post punción dural y posterior al parche hemático la misma se crucificó y se asociaron signos neurológicos, cuando realizan tomografía axial computarizada evidencian hematoma subdural izquierdo crónico que ameritó resolución quirúrgica; la evolución clínica de la paciente fue satisfactoria sin embargo se puede concluir que hay que hacer seguimiento estricto de estos pacientes por el personal especializado para dicha función.

Palabrasclave: anestesia espinal, cefalea post punción dural, hematoma subdural.

I. Introducción

La anestesia espinal es una técnica muy frecuente enla práctica anestésica (1) y la Asociación Americana de Anestesiología(ASA) recomienda esta técnica neuroaxial sobre la anestesia general para la cirugía de cesárea segmentaria (2).

La incidencia de complicaciones graves de la técnica de anestesia espinal es rara, pero potencialmente graves, y ronda el 0.05% (1),Moen et al analizaron 1.260.000 bloqueos espinales y 450.000 bloqueos epidurales entre 1990 y 1999 y reportaron sólo cinco casos de hematomas subdurales (3).Los hematomas subdurales intracraneales posterior a una anestesia espinal son una complicación rara pero seria, y suele confundirse con una entidad clínica muy frecuente como lo es la"cefalea post-punción dural" cuyo tratamiento es sintomático,pero puede ser un signo precoz de un hematoma subdural intracraneal (3,4). El mecanismo fisiopatológico propuesto consiste en una fuga de líquido cefalorraquídeo persistente por la lesión dural creada durante la punción, lo que provoca tensión y desgarro de los vasos meníngeos que si no se diagnostica a tiempo puede tener consecuencias fatales (3). Se presenta un caso de hematoma intracraneal posterior a anestesia espinal en una paciente sometida a cesárea segmentaria.

II. Caso Clinico

Se trata de paciente femenina de 19 años de edad, ASA II, con antecedente de Cefalea Migrañosa pobremente tratada, con dos gestaciones previas una de ellas fue un parto vía vaginal y la segunda una Cesárea, quien fue sometida a cesárea segmentaria por Desproporción Feto Pélvica factor fetal, para lo cual se practicó anestesia conductiva tipo neuroaxial espinal en posición sedente espacio: L2-L3 únicapunción, mezcla Bupivacaina 0,5% 7.5 mg + Fentanyl 25 μg, con una calidad de bloqueo excelente.

A las 24 horas del post-operatorio presenta cefalea de fuerte intensidad holocraneana izquierda punzante que exacerba en posición sedente y cede en decúbito dorsal concomitantemente vómitos incontables y dolor en cuero cabelludo, acude a facultativo quien diagnostica una "cefalea post-punción dural" e indica tratamiento con cafeína y analgésicos tipo AINES. Por no presentar la mejoría esperada realiza una nueva consulta a los 10 díasdel postoperatorio y se realiza parche hemático y se egresa el mismo día.

La paciente persiste con la cefalea la cual hace pulsátil y a los 15 días se asocia diplopía y estrabismo

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convergente de ojo derecho por lo que acude nuevamente a facultativo quien indica estudio de imagen tipo TAC de cráneo que reporta hematoma subdural en fase crónica temporo-parietal izquierdo con moderado efecto de masa. Clínicamentela paciente presenta Glasgow 15 puntos, con afectación de VI par craneal y se planifica por el servicio de Neurocirugía para craneotomía. La hematología completa reporta: Hb 12,6 g/dl Hto: 40,8% Leu: 7.800/mm3 PTL 319.000/mm3 Ingresa termodinámicamente estable. Se realiza inducción con: Fentanyl: 150 μg, Lidocaína 70 mg, Propofol 150 mg, Vecuronio: 6 mg, con mantenimiento inhalatorio con Sevoflurane 2,5 vol % Fio2 0.6, se mantiene Fentanyl 50 μg horario y vecuronio 2 mg en una oportunidad. Se revierte con atropina 0,5 mg + Neostigmine: 1 mg. Se traslada a la unidad de cuidados post-anestesico en buenas condiciones generales. La duración de la cirugía fue de 4 horas. Se egresa a las 48 horas, con mejora total de la diplopía y el estrabismo, y ausencia de cefalea.

III. Discusion

A pesar del buen perfil de seguridad de la anestesia espinal se siguen documentando complicaciones raras pero fatales, donde el hematoma subdural intracraneal constituye 1/500.000 procedimientos obstétricos, sin embargo muchos autores concuerdan que la casuística actual es desconocida por la poca publicación de casos de esta índole (5,6).

Las complicaciones asociadas a anestesia espinal incluyen: cefalea post-punción dural, meningitis, abscesos epidurales, infecciones en el lugar de punción, déficitneurológicode pares craneales, sangrado intracraneal (3)

La cefalea intensa posterior a una anestesia espinal es la complicación más común y fue descrita por Bier en el siglo XIX (3,6) Hay una fuga de líquido cefalorraquídeo que excede los 250 ml/día (3) que origina una hipotensión intracraneal, por lo cual la cefalea se torna postural (empeora al sentarse y levantarse y mejora en posición supina), este patrón es característico la cefalea post-punción dural (1,6), adicionalmente puede estar asociada con rigidez de nuca; o también puede observarse fotofobia y diplopía y se han reportado casos de sordera leve (7). La "cefalea post-punción dural" es autolimitada, iniciándose a las 48 horas o a los 5 días después de la punción y desaparece igualmente a las 48 horas y hasta 1 semana posterior a de su aparición (1), su tratamiento es sintomáticousando analgésicos no esteroideos, y ocasionalmente antieméticos, es muy frecuente utilizar sustancias vasoconstrictoras (como la cafeína) y la ingesta de abundantes líquidos, los tratamientos más invasivos requieren la colocación de un parche hemáticoen el espacio peridural (un volumen de 5 a 20 cc de sangre autologa preferiblemente a las 72 horas de la punción) (1,5).

En el presente caso la cefalea se tornó crónica incluso luego del parche hemático por lo que deben plantearse diagnósticos diferenciales como lo son: hematoma subdural o hemorragia intracraneal (6), especialmente cuando la paciente no presenta mejoría significativa con los AINES y/o el parche hemático. Es imprescindible hacer un minucioso interrogatorio y examen neurológico para la detección temprana de las complicaciones de la anestesia espinal.

La fisiopatología del hematoma subdural obedece a una fuga excesiva de líquido cefalorraquídeo lo cual produce un estiramiento excesivo de los vasos que conectan la corteza con los senos venosos, cuya pared es muy delgada en el espacio subdural y se van engrosando a medida que pasan al subaracnoideo por ello son susceptibles al desgarro durante el desplazamiento cerebral, y por ende el riesgo en la formación de hematomas cuando hay un derrame de líquido cefalorraquídeo excesivo e incluso aumentan las posibilidades cuando la aguja usada para la técnica anestésica es de gran calibre que mantiene el drenaje de dicho liquido al espacio extramural luego de retirar la aguja (6)

Existen factores de riesgo para el desarrollo de un hematoma subdural intracraneal posterior a la anestesia espinal, entre ellos el embarazo, múltiples punciones, calibre de la aguja alto, deshidratación, uso de anticoagulantes, anormalidades intracraneales, atrofia cerebral (1,6). En este caso no se pudo comprobar el calibre de la aguja ni la cantidad de punciones a la paciente, el único factor de riesgo conocido era el embarazo.

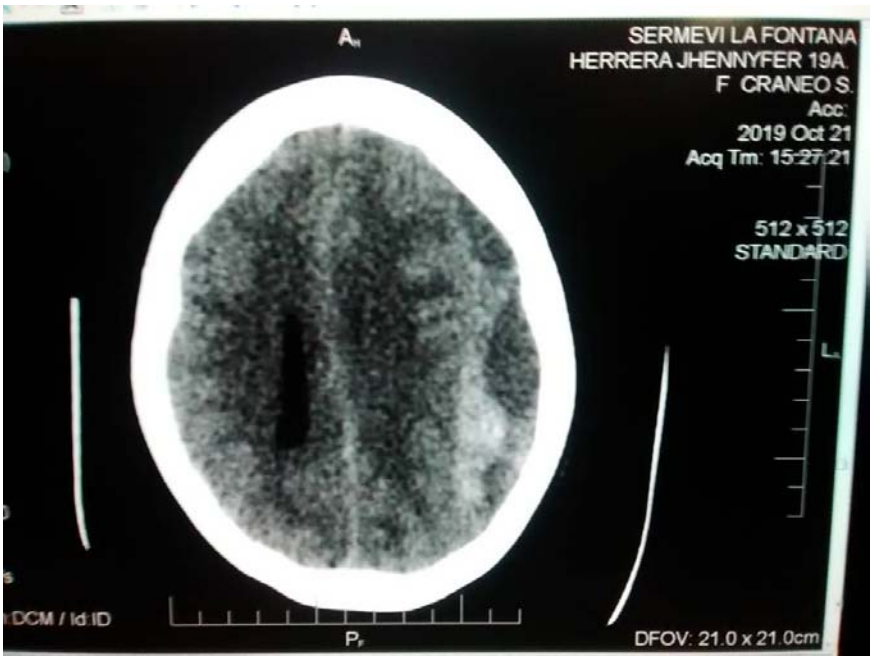
Es importante destacar que en el hematoma subdural la presentación clínica tiene dos fases, una inicial donde hay cefalea postural asociada a otro síntoma neurológico, vestibular, visual, auditivo o no. Los síntomas pueden mejorar con tratamiento sintomático sin embargo a diferencia de la cefalea post punción dural estos pueden hasta empeorar, y la segunda fase donde la cefalea deja de ser postural y se asocian signos y síntomas neurológicos en este punto ya no está relacionado con la hipotensión intracraneal sino con un síndrome de hipertensión intracraneal (1).

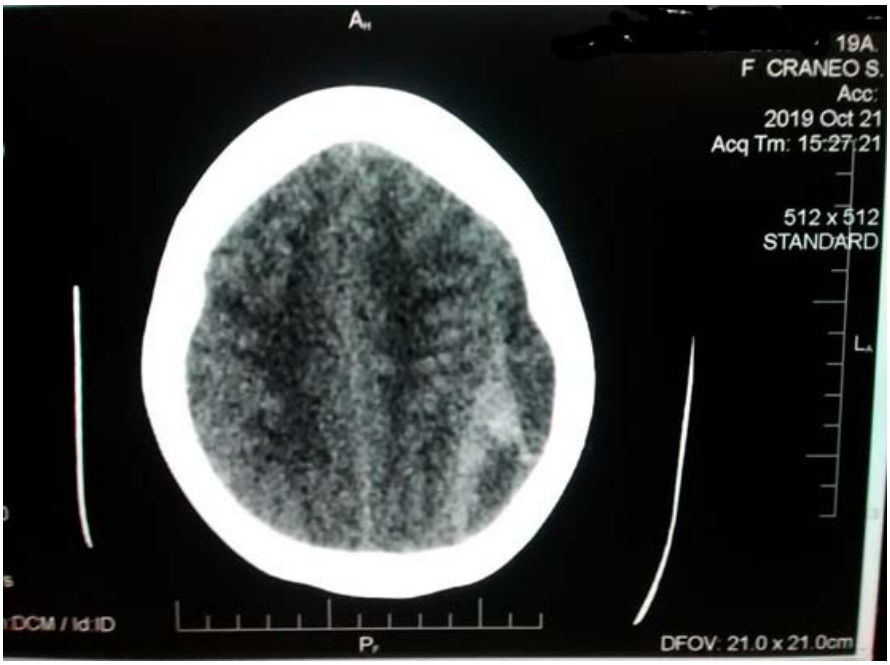
Como conclusión se puede establecer que es muy importante el manejo adecuado en el peroperatorio utilizando agujas de pequeño calibre y punciones únicas a traumáticas y de presentarse complicaciones (estas medidas no aseguran que no vaya a haber complicaciones), una historia clínica adecuada y el manejo por el personal más capacitado, como evidentemente el primer diagnóstico es de cefalea post-punción dural manejarla adecuadamente y muy importante hacer el seguimiento de este paciente ya que si no se sospecha un diagnostico no puede realizarse y por ende el abordaje terapéutico es tardío,

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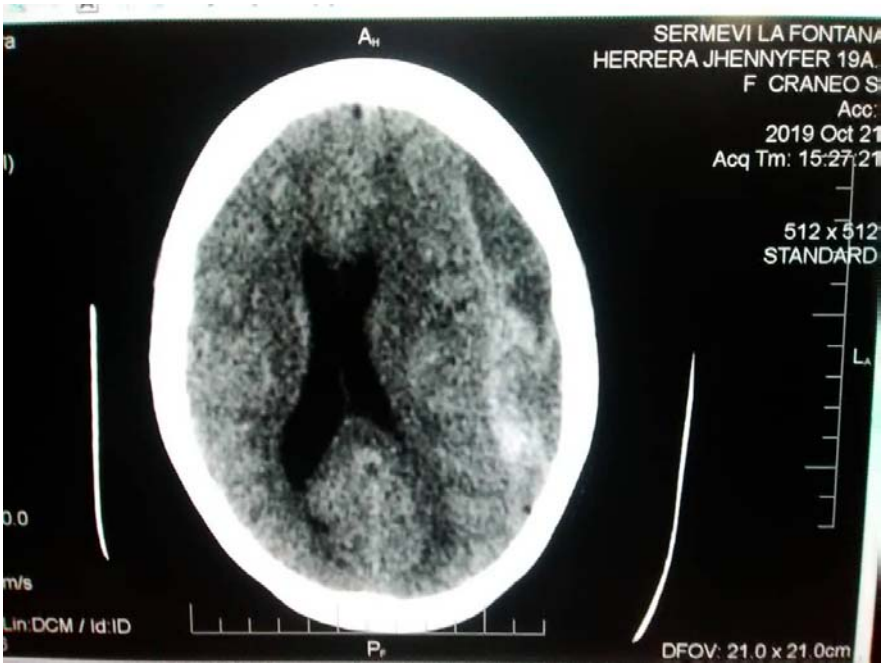
siempre evaluar la semiología de la cefalea minuciosamente, establecer el tiempo de ésta, determinar si es postural ya que en fase tardía deja de serlo y buscar signos y síntomas neurológicos que pueden ser muy pequeños pero con el buen abordaje semiológico y buen examen físico más una historia clínica detallada se pueden evitar consecuencias fatales en este tipo de pacientes.

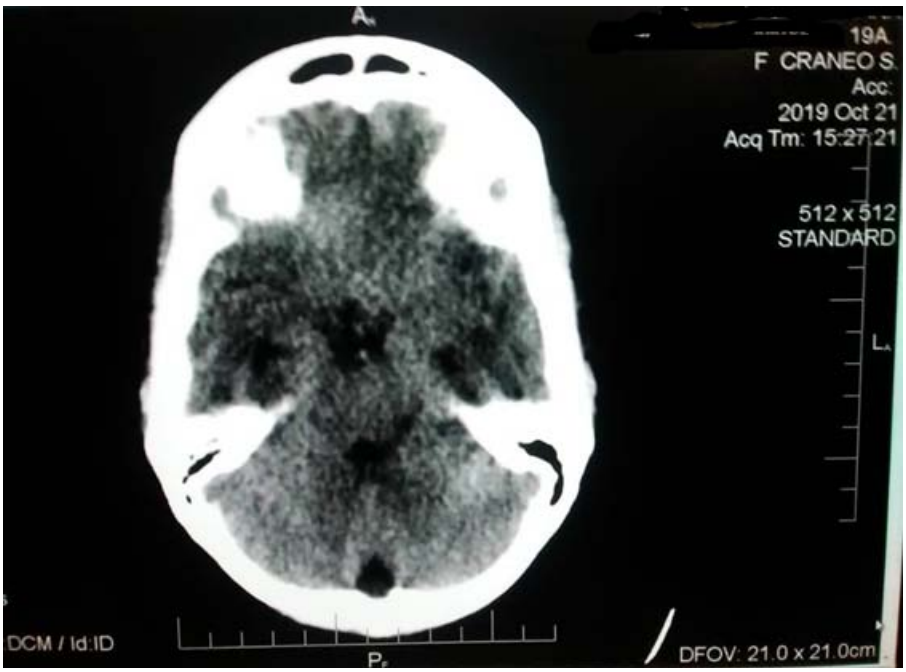
Imágenes





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Imágenes: Se observa estudio tipo Tomografia axial computarizada de cráneo sin contraste en su proyección axial una doble imagen hipodensa en la región frontoparietal izquierda sugestivo de hematoma subdural crónico con ligero desplazamiento de la línea interhemisferica.

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Results of the Olfactory Cognition Test Performed on 117 Peoples

By Naomi Katayama, Shoko Kondo, Saho Suzuki, Satoko Ishiguro, Nijiho Kondo, Nana Amano & Kaho Okuda

Nagoya Women's University

Abstract- Recently, many types of research have reported odors. There are several types of lits used for testing, but in Japan, there re odor sticks, open essences, T&T olfactometry, etc. This time, we report that we conducted an olfactory cognitive test using open essence on healthy 117 peoples (35 males and 83 females). The Open Essence (made by FUJIFILM) has the smell as same as the odor Stick Identification Test (OSIT-J). The aromas used in the open essence includes curry, perfume, Japanese cypress, India ink, menthol, rose, wood, stinkysocks/sweat, roasted garlic, condensed milk, gas for cooking and Japanese mandarin aromas. This 12 different kinds of perception is not necessarily culture-free; the Japanese version employed. Depending on the type of odor, that were difficult to understand and some that were easy to understand. The most will-recognized odor was the smell of Curry, and the most hard to understand odor was mandarin orange. In males, the highest cognitive odor was Curry, and the lowest odor was Stir-fried garlic. In females, the highest cognitive odor was Curry, and the lowest odor was mandarin orange. In the future, it will be necessary to perform olfactory cognitive ability by age, using open essence.

Keywords: *olfaction test, open essence, cognition, gender.*

GJMR-K Classification: *NLMC Code: W 84*



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Naomi Katayama [α], Shoko Kondo [σ], Saho Suzuki [ρ], Satoko Ishiguro [ω], Nijiho Kondo [¥], Nana Amano [§] & Kaho Okuda [χ]

Abstract- Recently, many types of research have reported odors. There are several types of lits used for testing, but in Japan, there re odor sticks, open essences, T&T olfactometry, etc. This time, we report that we conducted an olfactory cognitive test using open essence on healthy 117 peoples (35 males and 83 females). The Open Essence (made by FUJIFILM) has the smell as same as the odor Stick Identification Test (OSIT-J). The aromas used in the open essence includes curry, perfume, Japanese cypress, India ink, menthol, rose, wood, stinkysocks/sweat, roasted garlic, condensed milk, gas for cooking and Japanese mandarin aromas. This 12 different kinds of perception is not necessarily culture-free; the Japanese version employed. Depending on the type of odor, that were difficult to understand and some that were easy to understand. The most will-recognized odor was the smell of Curry, and the most hard to understand odor was mandarin orange. In males, the highest cognitive odor was Curry, and the lowest odor was Stir-fried garlic. In females, the highest cognitive odor was Curry, and the lowest odor was mandarin orange. In the future, it will be necessary to perform olfactory cognitive ability by age, using open essence.

Keywords: olfaction test, open essence, cognition, gender.

I. Introduction

There are various types of olfactory recognition tests, but as a simple test, odor sticks or open essences are currently used in Japan. Olfactory disorders are classified into 1. Respiratory, 2. Peripheral, 3. Central. There are, of course, cases of age-related decline in olfactory ability. However, in recent years, it has been reported that an olfactory disorder appears an an initial symptom of Alzheimer's dementia. It is a central olfactory disorder in which the brain that processes odor information damaged. Also, the olfactory disorder is also presenting as an initial symptom in the current problem of COVID-19 infection. It is a peripheral olfactory disorder, and olfactory mucosal olfactory disorder in which the olfactory mucosa degenerates is suspected. Olfactory cognitive ability is closely related to the quality of life.

Therefore, this study focused on the perception of smell and aimed to understand the actual situation of 12 different kinds of odors closely related to Japanese life in each age and gender. To begin with, we report on the olfactory perception of 35 male and 83 female.

II. Materials and Methods

a) Participants

The participants were 35 meals and 83 females (n=117) who voluntarily participated in olfactory tests. Males were 35 peoples and females were 83 peoples. Age ± standard deviation was 29.29±16.96 years old males and 41.89±24.66 years old female. The maximum was 82years old, and the minimum was 12 years old male. The maximum was 87 years old, and the minimum was 16 years old female. They were healthy, not going to the hospital and taking no medication. They were self-reported and had no colds and no fever. (Table 1).

Table 1: Distrribution of age and sex (number of people)

	10's	20's	30's	40'a	50's	60's	70's	80's
Male (n=35)	**7**	**17**	**6**	**2**	**0**	**1**	**0**	**2**
Female (n=82)	**8**	**34**	**3**	**6**	**6**	**7**	**11**	**7**
Total (n=117)	**15**	**51**	**9**	**8**	**6**	**8**	**11**	**9**

b) Assessment of odour identification

The Odor Stick Identification Test (OSIT-J) was used to assess odor perception for many years for our study. This test possesses high reliability and validity [1]. The basic procedure resembles that of the San Diego Odor Identification Test [2]). The aromas used in the OSIT-J include curry, perfume, Japanese cypress, India ink, menthol, rose, wood, stinky socks/sweat, roasted garlic, condensed milk, gas for cooking; and Japanese mandarin aromas[3,4]). This 12 different odorants perception is not necessarily culture-free, the Japanese version was employed[3, 4]). Each fragrance was enclosed in microcapsules made of melamine resin[3, 4]).

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In this study, we use The Open Essence (made by FUJIFILM) has the smell as same as the odor Stick Identification Test (OSIT-J). The open essence is a card type, and the scent had already applied to the card. When participants open the card, it has the same scent as OSIT-J. Each correct answer was scored as one point with the total performance score ranging from 0 to 12 points[5,6]). We defined it as follows: normal range as more than six points, borderline as 3 to 5 points, and abnormal as less than 2 points[5,6]). All of these methods are the same as in the previously reported paper [5,6]).

c) Ethical review board

This study conducted with the approval of the Ethical Review Board (Nagoya women's university Ethics Committee: 'hitowomochiitakennkyuunikansuruiinnkai'). The approval number is 30-11.

III. Results

a) Odour identification (number of correct answer)

Twelve different kinds of olfactory cognitive tests conducted on female students by using the Open Essence. The results shown in Table 1. When there are six or more types of recognition among the 12 types of odors, it considered as an acceptable range (we call it a normal range). This time, 23 out of 35 males could recognize more than six kinds of odors, as same as 75 out of 83 females could recognize more than six kinds of odors. By the way, one student had four types of perceptible odors. The average value of the olfactory recognition test results of 35 males was 7.3±2.3and 83 females was 8.6±2.2 (Table2. and Table 3.).

Table 2: Simple olfactory cognitive results (Open essence) (number of people)

	0	1	2	3	4	5	6	7	8	9	10	11	12
Male (n=35)	0	0	0	0	6	4	2	7	3	8	1	3	1
Female (n=82)	1	0	0	2	2	3	8	2	13	16	22	12	1
Total (n=117)	1	0	0	2	8	7	10	9	16	24	23	15	2

Table 3: Results of olfactory cognition test in female university students
(Average number of recognition ± Standard Deviation)

	Numver of recognition±Standard Deviation
Male (n = 35)	**7.3±2.3**
Femela (n = 83)	**8.6±2.2**
Total (m = 117)	**8.2±2.3**

b) Odour identification (percentage of each smell)

Next, Tables4 and 5 show the results of individually examining each of the 12 odors. Curry was the smell that both ales and females showed the highest olfactory perception. The odor that males had the lowest olfactory perception was Stir-fried garlic. But, the odor that female has the lowest olfactory perception was mandarin orange. It was the smell of Wood and Cypress that both males and females had about the same olfactory cognition in both senses. However, the olfactory perception of other odors was better in females than in males. Females had a 12.7% better olfactory perception than males with India Ink. As well, females had a 20.4% better olfactory perception than males with Perfume. Females had 18.6% better olfactory perception than males with Menthol. Females had a 16.9% better olfactory perception than males with Household gas. Females had a 14.1% better olfactory perception than males with Rose. Females had a 16.1% better olfactory perception than males with Stinky socks/ Sweaty. Females had a 33.8% better olfactory perception than males with Condensed milk. There were four types of odors in males and six types in females with olfactory recognition of 70% or more. Three of them (Curry, Household gas, Stinky socks/ Sweaty) were the same for both males and females.

Table 4: Results of olfactory test for 12 different odors in 117 people using open essence
(correct number of people)

	Indea Ink	Wood	Perfume	Menthol	Mandarin orange	Curry	Household gas	Rose	Cypress	Stinky socks/Sweaty	Condensed milk	Stir-fried garlic
Male (n=35)	14	21	19	23	11	35	27	17	26	26	16	10
Female (n=82)	52	55	62	70	23	79	78	52	58	75	66	32
Total (n=117)	66	76	81	93	34	114	105	69	84	101	82	42

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Table 5: Results of olfactory test for 12 different odors in 117 people using open essence (correct answer %)

	Indea Ink	Wood	Perfume	Menthol	Mandarin orange	Curry	Household gas	Rose	Cypress	Stinky socks/Sweaty	Condensed milk	Stir-fried garlic
Male (n=35) (%)	40.0	60.0	54.3	65.7	31.4	100.0	77.1	48.6	74.3	74.3	45.7	28.6
Female (n=82) (%)	62.7	66.3	74.7	84.3	27.7	95.2	94.0	62.7	69.9	90.4	79.5	38.6
Total (n=117) (%)	56.4	65.0	69.2	79.5	29.1	97.4	89.7	59.0	71.8	86.3	70.1	35.9

IV. Discussion

The male and female olfactory cognitive test results examined. Comparing the results, there was no difference between males and females, but there was a big difference when the odors examined individually. The smell of Curry, Household gas, and Stinky socks/Sweaty had higher cognitive scores in both males and females. On the other hand, Mandarin orange and Stir-fried garlic have lower cognitive scores in males and females. Regarding other odors, females had better cognitive scores than males except for the smell of Cypress. When considering the quality of life, it is necessary to be able to recognize the odor associated with the deliciousness of food (Curry, Condensed milk, etc.). Since the Curry has a lot of recovery after eating, the smell can be recognized. However, since there are few opportunities to eat condensed milk, the smell may be difficult to understand. Higher olfactory cognition scores for Household gas and Stinky socks/ Sweaty in this study indicated that healthy people could avoid dangers (gas explosions and food poisoning). However, since there was a difference in olfactory cognition scores between males and females, it is necessary to collect more data in the future to investigate the difference in sex.

V. Conclusions

The participants were 35 meals and 83 females (n=117) who voluntarily participated in olfactory tests. The average value of the olfactory recognition test results of 35 males was 7.3±2.3 and 83 females was 8.6±2.2. Comparing the results, there was no difference between males and females, but there was a big difference when the odors examined individually. The smell of Curry, Household gas, and Stinky socks/Sweaty had higher cognitive scores in both males and females. On the other hand, Mandarin orange and Stir-fried garlic have lower cognitive scores in males and females. However, the olfactory perception of other odors was better in females than in males. From this result, it is necessary to examine not only the number of correct answers but also the recognition score of 12 kinds of odors individually. In the future, we would like to perform the same olfactory cognitive test on more participants and compare the differences by sex and age.

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Heart Electrical Instabilities: Some Mechanisms by Topology, Symmetry, Spin, Semiotics; Diagnosis

By Sergii K. Kulishov

Abstract- *Background or Objectives:* Different technologies were used for mathematical modeling of biological rhythms, but individual diagnosis of heart rhythm and conductivity disturbance remains problem of our time. The purpose of this investigation was to formulate models, algorithms for making heart electrical instability diagnosis by topology, symmetry, spin, semiotics of electromagnetic processes.

Methods: We used algorithm for diagnosing heart electrical instability, which reduces to qualitative and quantitative analysis of electrocardiograms (ECG) in standard, inverted, 3D (as rotation bodies of ECG's elements) forms; constructing graphs, including "Gift wrapping" algorithm; calculation distances between points, angles between graphs, and others; comparison of qualitative and quantitative characteristics of these graphs by selective multiple testing; formulation of the diagnostic conclusion.

Keywords: *heart electrical instability, mathematical modeling, diagnosis.*

GJMR-K Classification: *NLMC Code: W 84*



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Results: We determinate disturbances of heart rhythm and conductivity components as unity of opposites, antonyms; oxymorons as result of fractal and/ or anti-fractal processes. Qualitative and quantitative characteristics of electrocardiograms in the patients with heart electrical instabilities, including pirouette ventricular pair extrasystoles, pirouette ventricular tachycardia, vicarious rhythms as result of sinus node dysfunction, binodal syndrome, gave us possibilities to determine peculiarities of oxymoron, fractal and anti-fractal, racemic Moebius strip like transitions and iteration.

Conclusion and Implications For Translation: Thus, our investigation give us possibilities to formulate models, algorithms for making heart electrical instability diagnosis by topology, symmetry, spin, semiotics of electromagnetic processes. Understanding electrical myocardial instability mechanisms improve the quality of diagnosis as precondition to treatment correction.

Keywords: heart electrical instability, mathematical modeling, diagnosis.

I. Introduction

a) Background of the Study

Different technologies were used for mathematical modeling of biological rhythms.[1,2] Heart electrical instability has various causes. Qualitative and quantitative electrocardiogram (ECG) assessment was basis for differential diagnosis[3-7].

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b) Objectives of the Study

Objects of investigation were 170 electro cardiograms with heart electrical instabilities.

c) Specific Aims

The purpose of this investigation was to formulate models, algorithms for making heart electrical instability diagnosis by topology, symmetry, spin, semiotics of electromagnetic processes.

II. Methods

a) Study Variables

Our concept is presented as step by step analysis of electrical myocardial instability.

We were used Typical Conceptual Spaces by some principles[8]:

- Information is organized by quality dimensions that are sorted into domains;
- Domains are endowed with a topology or metric;
- Similarity is represented by distance in a conceptual space.

Properties are presented a convex region in a single domain. Concept consists from number of convex regions in different domains and information about how the regions in different domains are correlated.[8] Concepts are equal frames and geometric structure.[8]

There are two properties of regions that are desirable: connectedness and convexity.[8] A region is connected if it cannot be decomposed into two or smaller nonintersecting regions.[8] It is convex if every line that connects any two points passes only through the region.[8] The notion of a line is contextual and, hence, so is that of convexity.[8]

We proposed oxymoron fractal and anti-fractal, and Moebius strip like heart arrhythmias and blockades, including racemic form concepts, that consist from such domains (regions) [9]:

Domain 1: Qualitative characteristics of ECG waves, segments, intervals (Types of ECG elements by forms as arcs, triangulates and others);

Domain 2: Quantitative characteristics of ECG waves, segments, intervals (Values of amplitudes, durations of ECG elements);

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Domain 3: ECG elements and their origin (Heart morphological origins of ECG elements: sinus, atrioventicular nodes, conduction system and others);

Domain 4: Waves, segments, interval of ECG as bodies of rotation (3D geometry of ECG elements: ellipsoids, cones with their mirror reflections and others);

Domain 5: Spin direction of rotation waves, segments of ECG (Spin type direction of rotation ECG elements: superior or inferior, left or right);

Domain 6: Qualitative characteristics of "Gift wrapping" algorithm of ECG element analysis (The sequence of the connection ECG elements' as "Gift wrapping" [9]);

Domain 7: Quantitative characteristics of "Gift wrapping" algorithm of ECG element analysis (Values of surface, volume characteristics of ECG elements "Gift wrapping"[9] and distances between points, angles of polygons);

Domain 8: Fractal characteristics of ECG elements (Types of ECG elements fractal characteristics as Cantor, Koch, Sierpinski sets and others);

Domain 9: Anti-fractal characteristics of ECG elements (Types of ECG elements anti-fractal characteristics as anti-snowflake Koch and others).

Antonym, oxymoron concept is presented as analysis of electrical myocardial instability as[11]:

- Initiation of myocardial electrical instability in concrete case;
- Determination of arrhythmic and blockade types;
- Searching of disturbance heart rhythm and conductivity components as unity of opposites, antonyms;
- Selection of basic and additional antonym pairs;
- Conversion of these results as fractal and/ or anti-fractal antonyms;
- Presentation of data as graphical models by Dragon language. [10]

Conversion of cardiac arrhythmias and blockades as fractal and/ or anti-fractal antonyms by genetic algorithm promote understanding of arrhythmogenesis, triggers and resonators of these processes; improve the quality of diagnosis as precondition to correct treatment.

Genetic algorithm of heart electrical instabilities diagnosis by fractal and anti-fractal analysis [11]:

- We take a pairs of chromosomes, consisting from fractals and/ or anti-fractals.
- Chromosome genes may be sets and anti-sets: Cantor, Julia, Mandelbrot, von Koch, Sierpinski carpet, Sierpinski Triangle, Sierpinski anti-Triangle, the Sierpinski gasket, the Sierpinski anti-gasket, Peano curve, Peano anti-curve, the Hilbert curve, Darer pentagon, Cantor square, tricorn and multicorns.
- As a result of crossing-over (one-, two-point or multi-point), we get new offspring chromosomes consisting from different combinations of genes.
- New chromosomes allow to analyze physical, mathematical, biomedical data.
- Results of modeling of cardiac arrhythmias and blockades as the unity of opposites, fractal and anti-fractal antonyms, oxymorons is presented on language "Dragon".[10]

We used the quantum genetic algorithm for differential diagnosis of antonym, oxymoron like heart electrical instabilities by using of qubit chromosomes.[12]

Pecularities of Moebius strip like cardiac arrhythmias and blockages were determined by convex analysis according to such scheme[9]:

- initialization of cardiac electrical instability as a Moebius strip by peculiarities of atrial and ventricular depolarization and repolarization;
- convex analysis by type, volume, surface bodies of rotation electrocardiograms elements;
- convex analysis by joining of PQSRT – PQSRT complexes points according to "Gift wrapping" algorithm"[9];
- construction of the convex hull for determination the relationship between the investigated complexes as Moebius strip like constituents;
- making conclusions by using of conceptual spaces data.

b) Statistical Analysis

We used of algorithm of creative solutions as derivatives of selective multiple testing[13]:

i. *Initial selection of multiple testing methods;*

A1: Selection of independent and dependent variability; Calculating the of mean, standard error of mean, standard deviation, 95% confidence interval for mean, median, minimum, maximum, range, quartiles;

Determination of the variabilities distribution - parametric or nonparametric by single-factor the Kolmogorov-Smirnov test; Shapiro-Wilk W test and graphical methods: frequency distribution histograms stem & leaf plots; scatter plots; box & whisker plots; normal probability plots: PP and QQ plots; graphs with error bars (Graphs: Error Bar).

A2: ANOVA (Analysis of Variance) test is used for parametric variabilities distribution. If deviations are homogeneous by Levene test would used the method of multiple comparison groups by Tukey HSD, Scheffe, Bonferroni, and in the cases without homogeneity we must use the criteria Tamhane's T2, Games-Howell; Kruskal-Wallis test, nonparametric equivalent of the ANOVA, is used for nonparametric variabilities distribution;

A3: The selection of variabilities, as criteria for making decisions, with P = .05 or less, and / or minimal false

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discovery rate, q-value. Determination of the sensitivity and specificity of these variabilities.

ii. *Secondary screening the variabilities for multiple test methods*

B1: These numerical dependent variabilities with P = .05 or less, and / or minimal false discovery rate, with high sensitivity and specificity by diagnostic capabilities must use for formation of new variabilities as descendants of 2, 3, 4.. n numerical dependent variabilities as the derivatives of various mathematical transformations as Cantor, Sierpinski, von Koch sets, etc., anti-fractal sets; Moebius strip like aggregates, oxymoron combinations; and others mathematical transformations derivatives.

iii. *Check the newly formed variabilities similar to step A to estimate the effectiveness of such changes.*

iv. *Comparison of multiple testing of more informative primary and secondary variabilities by accuracy, sensitivity and specificity of diagnostic possibilities.*

v. *If it's necessary, the search of new selection principles of variabilities for multiple testing must be continued.*

c) Ethical Approval

Complaince with Ethical Standards

III. Results

Examples of linear and nonlinear antonym pathogenesis of arrhythmias and blockades as result of unity[11]:

- Sinus node dysfunction as sinoatrial blockade II stage and atrial fibrillation;
- Sinus node dysfunction as tachy-brady-syndrome–bradycardia may originate in the sinus, atria, atrioventricular junction, or ventricle; the tachycardia is usually caused by atrial flutter or fibrillation, although it can also be caused, albeit less commonly, by reentrant supraventricular tachycardia in the sinus node or atrial muscle;
- Binodal syndrome as: Sinus node dysfunction-sinus bradycardia, alternating bradycardia and atrial tachyarrhythmias (bradycardia- tachycardia syndrome), sinus pause or arrest, and sinoatrial (SA) exit block. Various supraventricular tachyarrhythmias, such as atrial fibrillation and atrial flutter. Trifascicular Block-Right Bundle Branch Block (BBBB) with Both Left anterior fascicular block (LAFB) and Left posterior fascicular block (LPFB) give AV III block.
- Both Left anterior fascicular block (LAFB) and Left posterior fascicular block (LPFB) equal Left Bundle Branch Block (LBBB);

Example of the quantum genetic algorithm using for differential diagnosis of antonym, oxymoron like heart electrical instabilities for sinus node dysfunction syndrome or binodal syndrome by some qubit chrosomes:

$|q> = \alpha1|0> + \alpha2|1>$

$|q1> = \alpha1$ (sinoatrial blockade II stage) $|0> + \alpha2$ (atrial fibrillation) $|1>$

$|q2> = \alpha1$ (tachy- brady- syndrome) $|0> \alpha2$ (atrial flutter) $|1>$

$|q3> = \alpha1$(re-entrant supraventricular tachycardia) $|0> + \alpha2$ (Trifascicular Block - Right Bundle Branch Block with Both Left anterior fascicular block and Left posterior fascicular block) $|1>$

$|q4> = \alpha1$ (Atrioventricular III block) $|0> + \alpha2$ (atrial fibrillation) $|1>$

$|q5> = \alpha1$ (sinus bradycardia)$|0> + \alpha2$ (atrial tachyarrhythmias) $|1>$

$|q6> = \alpha1$ (sinus pause) $|0> + \alpha2$ (atrial fibrillation) $|1>$

$|q7> = \alpha1$ (sinoatrial exit block) $|0> + \alpha2$ (sinus bradycardia) $|1>$

Some examples of linear and nonlinear antonym pathogenesis of arrhythmias and blockades as result of unity[11]:

- Both Left and Right Bundle Branch Block (BBBB);
- Bifascicular Block - Right Bundle Branch Block (BBBB) with Left anterior fascicular block (LAFB);
- Bifascicular Block - Right Bundle Branch Block (BBBB) with Left posterior fascicular block (LPFB);
- Pair racemic, pirouette ventricular extrasystoles as sum of LVE (left ventricular extrasystole) and RVE (right ventricular extrasystole);

Rhythm and conduction disturbances can be represented by various known fractal- antifractal structural, electrical remodelling of the heart (fig. 1).[11] So Sierpinski napkin may reflect small and large sclerotic sclerotic processes in the myocardium, as a result of chronic and acute forms of coronary artery disease. [11] At the same time, this kind of fractal and Cantor set may reflect multiple foci of atrial depolarization during atrial fibrillation. Koch set may be a prototype, model of CLC, WPW syndromes; left, right bundle branch blockades. [11] Tricorn and multicorns antifractals can be a model of the pathogenesis of rhythm and conduction disorders, as a re-entry effect. [11] Examples of oxymoron pathogenesis of arrhythmias[11]:

The Moebius like space orientation of depolarization processes were characterized by the change of supraventricular pacemaker and ectopic activity onto the ventricular one.[11]

In the patients with sick sinus syndrome, the Moebius like arrhythmias were displayed as a combination of supraventricular and ventricular

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extrasystoles, pair fibrillation and flutter transformation from atria to ventricles.[11]

Qualitative and quantitative characteristics of 2D, 3D electrocardiograms in the patients with pirouette ventricular pair extrasystoles, pirouette ventricular tachycardia, vicarious rhythms as result of sinus node dysfunction, binodal syndrome gave us possibilities to determine peculiarities of oxymoron, fractal and antifractal, racemic Moebius strip like transitions and iteration (fig. 2,3).[14,15]

IV. Discussion

The proposed technology of solving clinical problems by system and anti-system comparison, presented as a graphical model and program by languages "Dragon", promotes understanding of complex principles of clinical medicine, improve the quality of diagnosis as precondition to change of the treatment.[11] Electrical instability of the heart is derived from its structural and electrical remodeling.[11] Rhythm and conduction disturbances can be represented by various known fractals and anti-fractals.[11]

Characteristics of volume, surface, laminar and turbulent data, spin, chirality of rotation bodies of electrocardiogram elements give us possibilities to determine depolarization and repolarization electro-magnetic picture, oxymoron, fractal and anti-fractal, Moebius strip like transitions and iteration, state of electrical heart instabilities.[11]

V. Conclusion and Implications for Translation

Our investigation give us possibilities to formulate models, algorithms for making heart electrical instability diagnosis by topology, symmetry, spin, semiotics of electromagnetic processes.

Understanding electrical myocardial instability mechanisms improve the quality of diagnosis as precondition to treatment correction.

Compliance with Ethical Standards

Conflicts of Interest: Author state that there are no conflicts of interest to report. The work done by the author, there is no fund received from any agency or company at all.

Financial Disclosure: The work done by the author, there is no fund received from any agency or company at all.

Ethics Approval: Complaince with Ethical Standards

Key Messages

Understanding electrical myocardial instability mechanisms improve the quality of diagnosis as precondition to treatment correction.

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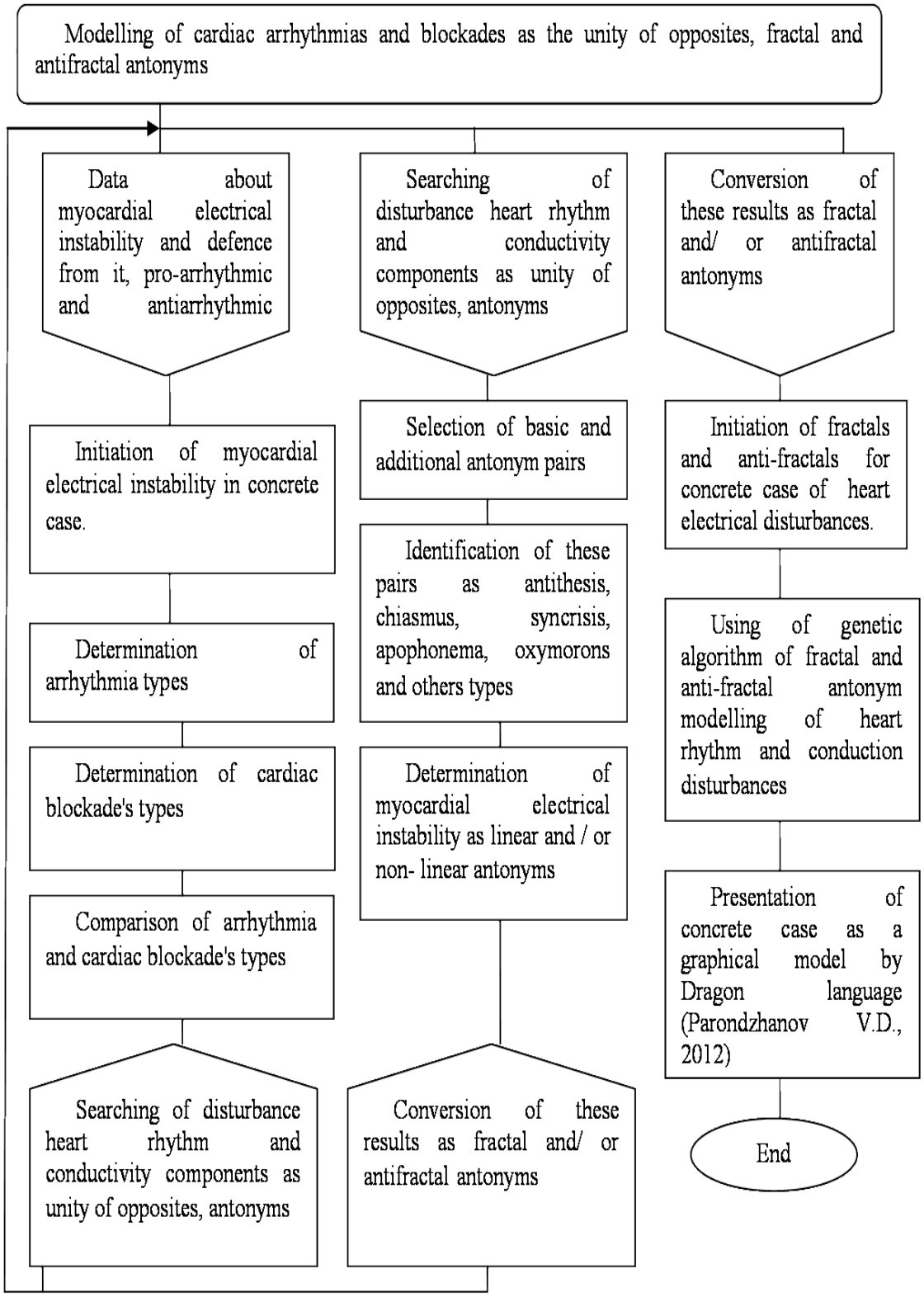


Fig. 1: Modelling of cardiac arrhythmias and blockades as the unity of opposites, fractal and antifractal antonyms[11]

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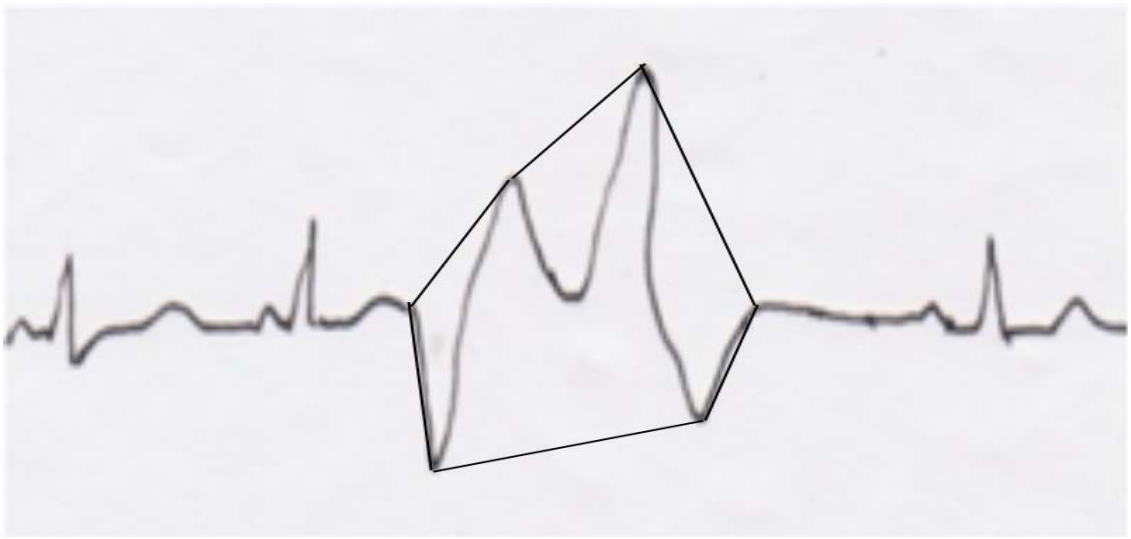


Fig. 2: The convex hull of ECG complexes as Moebius strip like constituents in the patients with pair pirouette ventricular premature beats.[15]

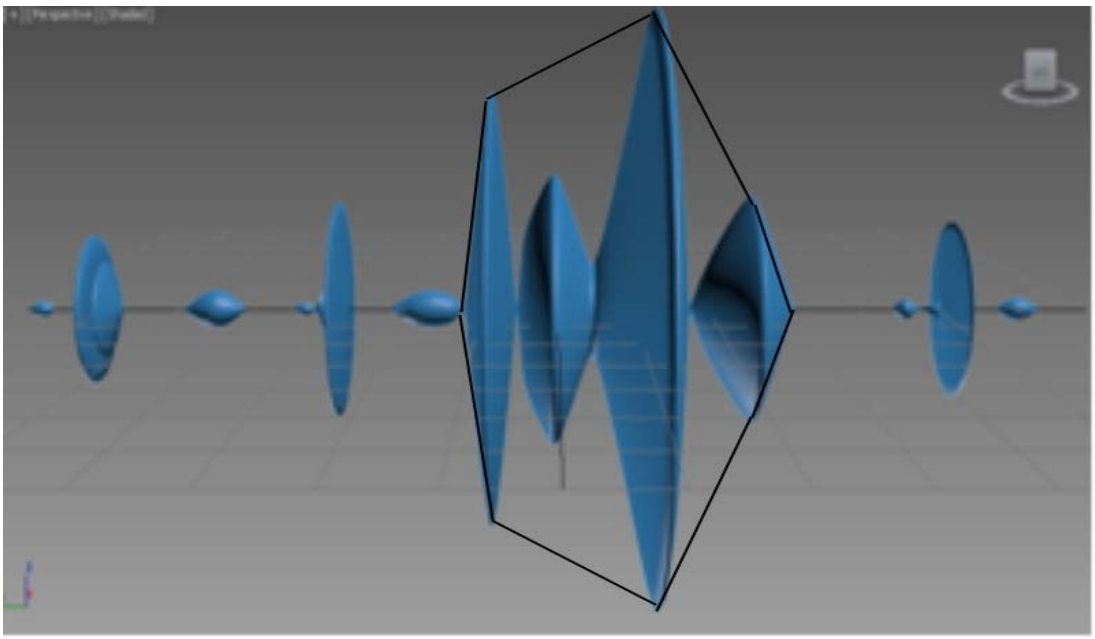


Fig. 3: The convex hull of rotation bodies of electrocardiogram elements complexes as Moebius strip like constituents in the patients with pair pirouette ventricular premature beats.[15]

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Results of Comparison of Two Types of Olfactory Recognition Tests Performed on 112 Peoples. -34 High School Students, 55 University Students, and 23 Middle-Aged

By Naomi Katayama, Syoko Kondo, Yui Ando, Youko Ashihara, Nene Kawano, Mrika Shibuya, Misaki Nanao, Inori Mase, Minami Abe, Marina Kouno & Yuuna Narimoto

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Abstract- The olfactory cognitive test is not commonly used. Still, it required in the future because it reported that and olfactory disorder appears as an initial symptom of Alzheimer's dementia or COVID-19 infection. There are several types of odor inspection kits used for testing, but in Japan, there are odor sticks, open essences, T&T olfactometry, etc. This time, we report that we conducted an olfactory cognitive test using Odor Sticks and Open Essence on healthy 112 peoples (34 high school students, 55 university students, and 23 middle-aged). The Open Essence (made by FUJIFILM) has the smell as same as the Odor Stick Identification Test (OSIT-J). The odor Stick (made by Daiichi Pharmaceutical industry Co., Ltd.) and the open essence include the aromas as curry, perfume, Japanese cypress, India ink, menthol, rose, wood, stynkysocks/sweat, roasted garlic, condensed milk, gas for cooking, and Japanese mandarin aromas. This 12 different odorants perception is not necessarily culture-free; the Japanese version employed.

Keywords: *olfaction test, odor stick, open essence, cognition, age.*

GJMR-K Classification: *NLMC Code: WV 140*

RESULTSOFCOMPARISONOFTWOTYPESOFOLFACTORYRECOGNITIONTESTSPERFORMEDON112PEOPLES34HIGHSCHOOLSTUDENTS55UNIVERSITYSTUDENTSAND23MIDDLEAGED

Strictly as per the compliance and regulations of:

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Results of Comparison of Two Types of Olfactory Recognition Tests Performed on 112 Peoples. -34 High School Students, 55 University Students, and 23 Middle-Aged

Naomi Katayama [α], Syoko Kondo [σ], Yui Ando [ρ], Youko Ashihara [ω], Nene Kawano [¥], Mrika Shibuya [§], Misaki Nanao [χ], Inori Mase [ν], Minami Abe [Θ], Marina Kouno [ζ] & Yuuna Narimoto [£]

Abstract- The olfactory cognitive test is not commonly used. Still, it required in the future because it reported that and olfactory disorder appears as an initial symptom of Alzheimer's dementia or COVID-19 infection. There are several types of odor inspection kits used for testing, but in Japan, there are odor sticks, open essences, T&T olfactometry, etc. This time, we report that we conducted an olfactory cognitive test using Odor Sticks and Open Essence on healthy 112 peoples (34 high school students, 55 university students, and 23 middle-aged). The Open Essence (made by FUJIFILM) has the smell as same as the Odor Stick Identification Test (OSIT-J). The odor Stick (made by Daiichi Pharmaceutical industry Co., Ltd.) and the open essence include the aromas as curry, perfume, Japanese cypress, India ink, menthol, rose, wood, stynkysocks/sweat, roasted garlic, condensed milk, gas for cooking, and Japanese mandarin aromas. This 12 different odorants perception is not necessarily culture-free; the Japanese version employed. The average ± standard deviation of the number of olfactory recognition using Open Essence was 8.4±2.0 for high school students, 8.4±1.5 for university students, and 7.8±2.2 for middle-age. The average ± standard deviation of the number of olfactory recognition using Odor Stick was 8.8±1.7 for high school students, 9.9±1.5 for university students, and 9.1±1.9 for middle-age. There were no significant differences between the two olfactory cognitive tests in high school students. However, the university students and the middle-age had a statistically significant difference in the cognitive score between Open Essence and Odor Stick. The Odor Stick score is better than the Open Essence. When odors examined individually, all data showed that menthol and stinky socks/ sweaty had a recognition rate of 80% or higher. And odors were examined individually; all data showed that India Ink had are cognition rate of less than 70%. The odors that differed in the number of cognition in the two olfactory cognition tests were the Stir-fried garlic, and the Odor Stick was better than the Open Essence.

Keywords: olfaction test, odor stick, open essence, cognition, age.

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I. Introduction

Recent years, many researchers have reported odor research, but few reports by age in healthy people. Also, since odors are closely related to daily life, there are differences in odors that are often contacted from birth to death in each country. Therefore, each country had its odor inspection kit (smell related to the life of the country). This time, I decided to conduct the Japanese odor test using the Japanese odor kit (Odor Stick: Daiichi Pharmaceutical industry Co., Ltd., and Open Essence: FUJIFILM). The Odor Stick Identification Test (OSIT-J) was used to assess odor perception for many years for our study. This test possesses high reliability and validity 1). The procedure resembles that of the San Diego Odor Identification Test 2). The aromas used in the OSIT-J includes curry, perfume; Japanese cypress, India ink, menthol, rose, wood, stinky socks/sweat, roasted garlic, condensed milk, gas for cooking, and Japanese mandarin aromas 2). This 12 different odorants perception is not necessarily culture-free, the Japanese version was employed 3, 4). Each fragrance enclosed in microcapsules made of melamine resin3,4). Therefore, in this study, I recruited high school students in their teens, university students in their 20s, and middle-age in their 30s to 40s, and compared the data by conducting two kinds of olfactory cognitive tests.

II. Materials and Methods

a) Participants

The participants were 34 high school students and 55 university students and 24 middle-age (n=112) who voluntarily participated in olfactory tests (Table 1). The average age of high school students was17.03±10.67, university students were 20.46±0.54, and middle-ages were 47.14±2.61.

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Table 1: Basic information of participants (Average of age, height, and weight)

	Age	Height	Weight
	Average ±S D	Average ±S D	Average ±S D
High school students (n=34)	17.03±0.67	157.17±5.12	48.27±6.60
University students (n=55)	20.46±0.54	157.76±6.20	50.35±4.48
Middle-age (n=23)	47.14±2.61	159.71±8.43	54.94±10.10

SD=Standard Deviation

b) Assessment of odor identification

In this test, two kinds of olfactory recognition tests performed on the same participant. The test kit used is the Odor Stick (Daiichi Pharmaceutical industry Co., Ltd.,) and Open Essence (FUJIFILM). There two types of olfactory cognitive test kits consist of 12 types of odors. This test possesses high reliability and validity 1). The basic procedure resembles that of the San Diego Odor Identification Test 2).Both kit includes curry, perfume, Japanese cypress, India ink, menthol, rose, wood, stinky socks/sweat, roasted garlic, condensed milk, gas for cooking, and Japanese mandarin aromas. This 12 different odorants perception is not necessarily culture-free; the Japanese version was employed 3,4). Each fragrance enclosed in microcapsules made of melamine resin3,4).Each correct answer was scored as one point with the total performance score ranging from 0 to 12 points5,6). We defined it as follows: normal range as more than 6 points, borderline as 3 to 5 points, and abnormal as less than 2 points5,6). All of these methods are the same as in the previously reported paper 5,6).

c) Statistical processing

The test results were confirmed to be normal distribution by F-test. Data that distributed compared with Student-t without correlation of parametric test. The data that was not distributed compared without correlated Mann-Whitney test of the non-parametric test. In comparing the taste test and the olfactory test result performed on the same participant, with correlated Wilcoxon test of the non-parametric test.

d) Ethical review board

This study conducted with the approval of the Ethical Review Board (Nagoya women's university 'hitowomochiitakennkyuunikansuruiinnkai').
The approval number is 30-11.

III. Results

a) Odor identification (number of the correct answers)

Tables 2, 3, and 4 show the results of two types of olfactory cognitive tests for high school students, university students, and middle-age. Tables 5 and 6 show the average and standard deviation of the number of olfactory cognition in each group for each olfactory cognitive test. No one had less than two olfactory cognition sat any age. There is no difference in the number of olfactory cognition among the groups in each olfactory cognitive test. However, there are differences when looking at the two types of test results in university students and middle-aged people.

Table 2: Comparison of recognition numbers of two of olfactory test in high school students (Number of people) (n=34)

	0	1	2	3	4	5	6	7	8	9	10	11	12
Open essence	0	0	0	0	1	2	4	2	10	6	5	1	3
Odor stick	0	0	0	0	1	2	0	2	6	11	7	5	0

Table 3: Comparison of recognition numbers of two of olfactory test in university students (Number of people) (n=55)

	0	1	2	3	4	5	6	7	8	9	10	11	12
Open essence	0	0	0	1	1	0	2	7	17	15	10	2	0
Odor stick	0	0	0	0	0	0	1	4	4	8	15	17	6

Table 4: Comparison of recognition numbers of two of olfactory test in middle age (Number of people) (n=23)

	0	1	2	3	4	5	6	7	8	9	10	11	12
Open essence	0	0	0	1	1	1	4	4	2	4	5	1	0
Odor stick	0	0	0	0	1	0	0	5	2	3	6	6	0

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Table 5: Results of olfactory cognition test using open essence
(Average number of recognition ± Standard Deviation)

	Numver of recognition±Standard Deviation
High school students (n=34)	**8.4±2.0**
University students (n=55)	**8.4±1.5**
Middle-age (n=23)	**7.8±2.2**

Table 6: Results of olfactory cognition test using odor stick
(Average number of recognition ± Standard Deviation)

	Numver of recognition±Standard Deviation
High school students (n=34)	**8.8±1.7**
University students (n=55)	**9.9±1.5**
Middle-age (n=23)	**9.1±1.9**

b) Statistical comparison

Tables7, 8 and 9 show a comparison of the olfactory cognitive test results using statistical methods. There were no stutisttically significant differences between the two olfactory cognitive test results in high school students. However, there was a statistically significant difference between the two types of olfactory cognitive test results between university students and middle-aged, and the odor stick had a higher degree of recognition than Open Essence. Furthermore, when comparing between groups, the Open Essence olfactory cognition test showed n statistically significant difference between all groups. However, there was a statistically significant difference between university students and other groups in the Odor Stick.

Table 7: Statistical comparison of olfactory recognition number of the open essence test and odor stick test
(High school students, University students and Middle-age)

Odor idetification	High school students (n=34)		University students (n=55)		Middle-age (n=23)	
	Open essence	Odor stick	Open essence	Odor stick	Open essence	Odor stick
Average number of recognition±Standard Deviation	8.4±2.0	8.8±1.7	8.4±1.5	9.9±1.5	7.8±2.2	9.1±1.9
F test	P=0.154		P=0.443		P=0.261	
Paired Student-t test	P=0.309		P=0.0001**		P=0.005**	
Mann-Whitny test						

Table 8: Statistical comparison of olfactory recognition number of the open essence test
(High school students vs University students, University students vs Middle-age, Middle-age vs High sch. students)

Odor idetification	Open essence		Open essence		Open essence	
	Hight school students	University students	University students	Middle-age	Middle-age	Hight school students
Average number of recognition±Standard Deviation	8.4±2.0	8.4±1.5	8.4±1.5	7.8±2.2	7.8±2.2	8.4±2.0
F test	P=1.00		P=0.031*		P=0.396	
Paired Student-t test	P=0.999				P=0.170	
Mann-Whitny test			P=0.129			

Table 9: Statistical comparison of olfactory recognition number of the open odor stick test
(High school students vs University students, University students vs Middle-age, Middle-age vs High sch. students)

Odor idetification	Odor stick		Odor stick		Odor stick	
	Hight school students	University students	University students	Middle-age	Middle-age	Hight school students
Average number of recognition±Standard Deviation	8.8±1.7	9.9±1.5	9.9±1.5	9.1±1.9	9.1±1.9	9.1±1.9
F test	P=0.154		P=0.103		P=0.316	
Paired Student-t test	P=0.001*		P=0.026*		P=0.649	
Mann-Whitny test						

c) Odor identification (percentage of each smell)

Next, Tables 10, 11, and 12 show the results of individually examining each of the 12 odors. Curry was the smell that high school students, university students, and middle-age showed the highest olfactory perception.

When odors examined individually, all data showed that menthol and stinky socks/ sweaty had a recognition rate of 80% or higher. And odors examined individually; all data showed that India Ink had are rcognition rate of less than 70%. The odors that differed in the number of cognition in the two olfactory cognition tests were the Stir-fried garlic, and the odor stick was better than the open essence.

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Table 10: Comparison of results of different odors of two cognitive test in high school students (%) (n=34)

	India Ink	Wood	Perfume	Menthol	Mandarin orange	Curry	Household gas	Rose	Cypress	Stinky socks/Sweaty	Condensed milk	Stir-fried garlic
Open essence	52.9	61.8	58.8	97.1	44.1	97.1	70.6	85.3	91.2	91.2	73.5	23.5
Odor stick	44.1	50	23.5	85.3	97.1	97.1	58.8	88.2	76.5	94.1	70,6	97.1

Table 11: Comparison of results of different odors of two cognitive test in university students (%) (n=55)

	India Ink	Wood	Perfume	Menthol	Mandarin orange	Curry	Household gas	Rose	Cypress	Stinky socks/Sweaty	Condensed milk	Stir-fried garlic
Open essence	45.5	74.5	58.2	94.5	21.8	96.4	81.8	83.6	83.6	96.4	83.6	20.0
Odor stick	61.8	63.6	67.3	90.9	87.3	89.1	87.3	92.7	78.2	96.4	89.1	94.5

Table 12: Comparison of results of different odors of two cognitive test in middle age students (%) (n=23)

	India Ink	Wood	Perfume	Menthol	Mandarin orange	Curry	Household gas	Rose	Cypress	Stinky socks/Sweaty	Condensed milk	Stir-fried garlic
Open essence	47.8	56.5	82.6	87	95.7	73.9	73.9	73.9	73.9	82.6	56.5	26.1
Odor stick	65.2	69.6	17.4	95.7	91.3	100	87	91.3	73.9	100	60.9	100

IV. Discussion

The result of the elderly reported by Katayama et al. In the past showed that the olfactory cognitive test results gradually decreased in both males and females after the '50s. This time, I reported the results of olfactory cognition tests in the teens, 20s, and 30s to 40s. The results of olfactory cognition tests were almost the same in the younger age group, and most of them recognized eightor more of 12 odors. The results of the olfactory cognition test using open essence showed no statistically significant difference in the cognitive results among high school students, university students, and middle-age. However, there was a statistically significant difference between the results of university students and middle-age in the odor stick compared to high school students. When odors examined individually, all data showed that menthol and stinky socks/ sweaty had a recognition rate of 80% or higher. And odors were examined individually; all data showed that India Ink had are cognition rate of less than 70%. The odors that differed in the number of cognition in the two olfactory cognition tests were the Stir-fried garlic, and the odor stick was better than the open essence. Also, since the results of the olfactory cognition test in the younger generation are a small number, I would like to continue the test and collect the data for re-examination.

V. Conclusions

This time, we report that we conducted an olfactory cognitive test using odor sticks and open essence on healthy 112 peoples (34 high school students, 55 university students, and 23 middle-aged). The Open Essence (made by FUJIFILM) has the smell as same as the odor Stick Identification Test (OSIT-J).

The average ± standard deviation of the number of olfactory recognition using open essence was 8.4±2.0 for high school students, 8.4±1.5 for university students, and 7.8±2.2 for middle-age. The result of the odor stick was 8.8±1.7 for high school students, 9.9±1.5 for university students, and 9.1±1.9 for middle-age. There were no significant differences between the two olfactory cognitive tests in high school students. However, the university students and the middle-age had a statistically significant difference in the cognitive score between open essence and Odor Stick. The Odor Stick score is better than the Open Essence. When odors examined individually; all data showed that menthol and stinky socks/ sweaty had arecognition rate of 80% or higher. And odors examined individually; all data showed that India Ink had are cognition rate of less than 70%. The odors that differed in the number of cognition in the two olfactory cognition tests were the Stir-fried garlic, and the odor stick was better than the open essence. In the future, I would like to increase the number of participants and report the results of participants and report the results of olfactory cognition tests by age and sex.

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The Founding Analytical Categories to the Concept of *Nutritional Rationality*: Qualitative Research with Postgraduate Programs Professors in Nutrition in Brazil

By Marcia Regina Viana

Abstract- *Objective:* To investigate how the academy collaborates in what is believed to be a process – the constructionof the concept of nutritional rationality as the foundation of food practicesdirected to the priority fulfillment of nutritional presup positions.

Method: Qualitative research withthe application of semi structured interview and content analysis of these interviews conducted with professors of Post graduate Programs in Nutrition interviewed during the field research concerning the author's doctor althesis developed in the Programa de Pós Graduação em Alimentação Nutrição e Saúde of the Universidade do Estado do Rio de Janeiro (UERJ).

Keywords: *nutritional rationality, healthy food, qualitative research, food practices.*

GJMR-K Classification: *NLMC Code: QU 145*



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The Founding Analytical Categories to the Concept of *Nutritional Rationality*: Qualitative Research with Postgraduate Programs Professors in Nutrition in Brazil

Categorias Analíticas Fundadoras Do Conceito D*eracionalidade Nutricional*: Pesquisa Qualitativa Com Docentes Pesquisadores De Programas De Pós Graduação Em Nutrição no Brasil

Marcia Regina Viana

Abstract- Objective: To investigate how the academy collaborates in what is believed to be a process – the construction of the concept of nutritional rationality as the foundation of food practices directed to the priority fulfillment of nutritional presup positions.

Method: Qualitative research with the application of semi structured interview and content analysis of these interviews conducted with professors of Post graduate Programs in Nutrition interviewed during the field research concerning the author's doctor althesis developed in the Programa de Pós Graduação em Alimentação Nutrição e Saúde of the Universidade do Estado do Rio de Janeiro (UERJ).

Results: From the analysis of these interviews, representative categories of their content were developed: 1) food convenience, wich presented the intention to consider industrialized food as anally in solving day today difficulties; 2) food prescribing/food standardization, expressing the idea that healthy food should be governed under the principles of Nutritional Science; 3) scientification of the alimentary process, wich entail sa view of technical knowledge as having hegemonic status and being a guarantee of truth.

Conclusion: The analyzed narratives presented significant evidence that the formation of the nutritionist, with special focus on the formation of the researcher, encounters a significantly greater sense of importance related to conceptual constructs that come from researches related to the biological nucleus of food and nutrition.

Keywords: nutritional rationality, healthy food, qualitative research, food practices.

Resumo- Objetivo: Investigar como a academia colabora no que se acredita ser um processo - a construção do conceito de *racionalidade nutricional* como fundante de práticas alimentares voltadas ao cumprimento prioritário de pressupostos nutricionais.

Método: Pesquisa qualitativa com aplicação de entrevista semiestruturada e análise de conteúdo destas entrevistas realizadas com professores de Programas de Pós Graduação em Nutrição, entrevistados durante o trabalho de campo de pesquisa de doutoramento desenvolvida no Programa de Pós Graduação em Alimentação, Nutrição e Saúde da Universidade do Estado do Rio de Janeiro (UERJ).

Resultados: A partir da análise das entrevistas, foram encontradas categorias representativas de seu conteúdo:1) conveniência alimentar, que apresentou a intenção de considerar os alimentos industrializados como aliados na resolução de dificuldades do dia a dia;2) prescrição/ normatização alimentar, expressa a concepção de que alimentação saudável deva estar regida sob os princípios da Ciência da Nutrição; 3) cientificização do processo alimentar, que enseja uma visão do conhecimento técnico enquanto hegemônico e como garantia de verdade.

Conclusão: As narrativas analisadas apresentaram sensível evidência de que a formação do nutricionista, e aqui nesse estudo destacou-se a formação do pesquisador, encontra peso ou valor bem mais significativo nas construções conceituais advindas de pesquisas relacionadas ao núcleo biológico da alimentação e nutrição.

Palavras-chave: racionalidade nutricional, alimentação saudável, pesquisa qualitativa, práticas alimentares.

I. Introdução

Atualmente encontram-se diferentes estudos que se dedicam a analisar o padrão do consumo alimentar das populações[1,2,3,4,5], o qual tem se modificado pela interferência de diversos fatores. Dentre estes,destacam-se a grande industrialização do setor alimentício, que passou a oferecer maior variedade de produtos para o mercado consumidor,e a crescente inserção da mulher no mercado de trabalho, fazendo com que sua permanência no lar tenha se reduzido e, consequentemente, a procura por alimentos prontos para consumo tenha aumentado. Paralelamente a estes movimentos, cresceu também o interesse das pessoas comuns aos assuntos relacionados à saúde e à alimentação[6].

Para o presente estudo, tomou-se como ponto de partida o desejo de compreensão do fenômeno social observado nestas últimas décadas expresso na maior preocupação das pessoas em praticar um tipo de alimentação *adequada* e que atenda a algum pré-requisito fundamental para garantia de boa saúde e performance física e mental. Esta busca é percebida

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principalmente entre pessoas do senso comum, não *experts* no tema da alimentação saudável, mas que construíram o entendimento de que a alimentação deva ser *equilibrada e saudável*. Exemplo desse fenômeno, e também sua consequência, é a grande produção de livros de orientação sobre alimentação escritos por "leigos" e que, notoriamente, indicam haver maior preocupação com um consumo racional da alimentação rica em nutrientes, restrita em energias e que se apresente funcionalmente eficaz, isto é, que vá ao encontro de expectativas de melhor performance e de prevenção de riscos[7].

A *racionalidade nutricional*, objeto de um estudo anterior[8], é o conceito que reúne oconjunto de práticas alimentares atentas ao permanente cuidado em manter na alimentação o equilíbrio de nutrientes, em detrimento do prazer de comer e dos valores com que a alimentação marca o convívio social a ela associados. Tais práticas desdobram-se em princípios que apontam preocupações centradas no "consumo racional de alimentos" e na "alimentação balanceada", como já mencionado. Esse conceito atende a reduzir a relação entre valor nutricional do alimento e saúde como causalidade necessária, isto é, ao entendimento de que a saúde está única e necessariamente implicada com a composição bioquímica do alimento enquanto fonte de nutrientes e com o seu processo de aproveitamento fisiológico no corpo.

Esta discussão ganhou posição de destaque na atualidade, tanto no meio acadêmico, mormente constituído por *expertise*s diferenciadas e especializadas, como também no senso comum do campo de alimentação e nutrição, o qual é formado principalmente por estudiosos "amadores" deste campo, ou seja, que não detém título de *expert* mas que transitam bem por estes conhecimentos, seja por afinidade intelectual ou por interesses ligados ao novo campo de atuação no espaço digital (os chamados "influenciadores digitais"); ou ainda por outros profissionais que abordam essa área com um olhar de crítico da realidade, como é caso do jornalista Michael Pollan, que já escreveu diversos livros sobre o tema, destacando-se os títulos *O dilema do onívoro* (2006), *Em defesa da comida* (2008), *Regras da comida*(2010), *Saber comer* (2017).

Paralelo à preocupação das pessoas em consumir alimentação saudável[9], chama a atenção também o grande número de práticas alimentares diferenciadas encontradas atualmente: vegetarianismo, veganismo, crudismo, dieta sem glúten, alimentação natural, entre outras designações. Navolar et al (2012) em seu estudo *Contribuições para a construção da Nutrição Complementar Integrada,* buscam o entendimento de que as "racionalidades nutricionais" referem-se às práticas alimentares associadas à terapias complementares e que "merecem ser reconhecidas, compreendidas e estudadas" e constituiriam o conceito de Nutrição Complementar Integrada (NCI)[10]. Estas racionalidades sinalizam para uma perspectiva de tratar a alimentação sem privilegiar o modelo dominante pautado em uma perspective energético-quantitativa da Nutrição, a qual exerce o papel fundador da noção moderna do que é um alimento saudável.

Muitos desses modelos de práticas alimentares diferenciadas assentam sobre diferentes propósitos, indo desde a segurança proporcionada por estudos científicos, como seria o caso da funcionalidade alimentar, qualificando os alimentos como *funcionais*, como também posições filosóficas e/ou ideológicas de proteção aos animais e ao meio ambiente, encontradas em práticas alimentares que pretendem eliminar os alimentos de origem animal. A resistência ao uso de produtos industrializados, por sua vez, é encontrada na *ortorexia*, prática alimentar reconhecida como a obsessão por saúde alimentar, qualidade dos alimentos e pureza da dieta, situação em que a pessoa não tolera o fato de desconhecer a origem, o modo de preparo e quem preparou o alimento. ALMEIDA (2014) complementa este debate ao afirmar que "optar por um tipo de alimentação diferente pode ter a ver com escolhas filosóficas e de maior consciência a respeito do papel que se tem no mundo enquanto ser humano e cidadão"[11].

No que diz respeito ao tratamento da obesidade observa-se que a racionalidade nutricional é tomada como a principal diretriz de cuidado[12,13], o que tende a desconsiderar o excesso de peso como processo multifatorial decorrente de ambiente alimentar favorável ao ganho de peso, mas que acaba sendo enfrentado por medidas individualizantes focadas apenas no corpo e restritas à dimensão biológica[14,15.]

A nutrição esportiva é outro segmento em que a racionalidade nutricional é pensada como a principal diretriz de suporte terapêutico, cujo propósito principal é melhorar a performance física, priorizando maior acuidade funcionaldos elementos bioquímicos e fisiológicos favoráveis à prática esportiva[16]. O treinamento para atletas demanda planejamento individualizado por razões inerentes a própria situação singular de atividade física intensa, onde o maior aproveitamento implementado de fatores nutricionais e bioquímicos pode colaborar para que sejam atingidas metas determinadas. Por outro lado, observa-se que frequentadores de academias de musculação têm praticado o uso indiscriminado de suplementos alimentares com o intuito de "potencializar no menor espaço de tempo possívelos seus desejos"[17]. É possível verificar um grande apelo midiático para a utilização dessas substâncias, uma vez que a indústria de suplementos nutricionais está lanç ando constantemente no Mercado produtos dittos ergogênicos que prometem efeitos imediatos e eficazes. Ao lado disso, não se pode deixar de

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mencionar a ocorrência de profissionais de educação física que estimulam o uso de suplementação para "melhorar" a performance de seu aluno e conquistar maior adesão ao plano de atividades[17].

Dessa forma, este estudo propõe o seguinte questionamento: a maior racionalidade atribuída às práticas alimentares, como implicado no conceito de racionalidade nutricional, poderia ser resultante de extravasamento de conteúdo acadêmico para além dos propósitos pertinentes à Ciência da Nutrição ou, dito de outro modo, que os estudos do campo de alimentação e nutrição estejam sendo desvirtuados do seu propósito original que é o de promoção da saúde humana e levando à corrida ao ideal alimentar preconizado pelo discurso científico? As práticas alimentares definidas no conceito de racionalidade nutricional, são parte de processo maior - o de medicalização da sociedade, em cujo bojo assiste-se à supervalorização do conhecimento científico? Estaria a academia implicada com este processo ao preconizar, na prática docente especializada, um discurso legitimador da soberania de um conhecimento científico contaminado pela ideologia consumista, o qual endossaria conceituações que fomentariam a noção de uma *racionalidade nutricional hegemônica*?

II. Método

Para tentar clarear nosso entendimento acerca dessas questões, efetuou-se pesquisa de campo com professores de Programas de Pós Graduação em Alimentação e Nutrição com o intuito de investigar como a academia colaboraria no que se acredita ser um processo - a construção do conceito de *racionalidade nutricional* como fundante de práticas alimentares voltadas ao cumprimento prioritário de pressupostos técnico-científicos. É resultado parcial de pesquisa qualitativa realizada durante o projeto de pesquisa de doutoramento intitulado "A Racionalidade Nutricional como co participe do processo de medicalização da sociedade" apresentado ao Programa de Pós Graduação em Alimentação Nutrição e Saúde da UERJ (PPGANS/UERJ). Utilizou-se o método de pesquisa qualitativa, com a técnica de entrevista semiestruturada e roteiro de entrevista formado por três eixos investigativos: formação profissional, concepção de alimentação saudável e relação ciência/ normatização/ industrialização. Serviram como campo de pesquisa três programas de pós graduação em Nutrição - UERJ, UFRJ e UNIFESP/Baixada Santista. Foram entrevistados vinte e seis professores desses programas. As entrevistas foram transcritas e analisadas com base na análise de conteúdo de Lawrence Bardin[18]. O objetivo da pesquisa foi o de investigar nas falas dos sujeitos de pesquisa, a tendência em reconhecer no campo científico em que atuam a perspectiva tecnicista e biologicista.

Sobre a metodologia utilizada, é importante colocar que vários estudos problematizam a inserção da pesquisa qualitativa em estudos de saúde coletiva[19,20]. Segundo DENZIN et al, desde as décadas de 1920 e 1930 a Escola de Chicago já reconheceu nesse método sua importância no estudo da vida de grupos humanos[21]. No estudo que ora se apresenta, intencionou-se investigar o consenso de pesquisadores que, a princípio, têm a si mesmos como os construtores e consolidadores do conhecimento acerca do objeto pesquisado – a racionalidade nutricional, a qual implicará, como já descrito, na efetivação das práticas alimentares. Isto justificaria a adoção deste método como via de acesso aos dados de interesse.

Ainda citando DENZIN et al, a investigação qualitativa pode apresentar três posturas epistemológicas: interpretativismo, hermenêutica e construcionismo social, as quais oferecem a percepção do pressuposto de que as pessoas agem em função de suas crenças, sentimentos e valores; significados que não se dão a conhecer de modo imediato, e por isso, precisam ser desvelados. A pesquisa qualitativa pretende compreender processos em realidades sociais definidas. Nesse caso em especial, desde a fase de especulação do problema investigado, tem-se a inclinação de olhar o processo alimentar como fator estruturante da convivência social e principalmente, da expressividade do sujeito. Ao contrário de estudos que buscam a comprovação estatística das causas de fenômenos (naturais) se repetirem de determinada maneira, a pesquisa qualitativa requer observar e compreender a *qualidade* de fenômenos (da existência humana), qualidade esta expressa na forma, modo, local e no contato com os atores envolvidos na expressão fenomênica.

Em relação à abordagem, pensou-se em criar situação favorável para motivar os professores a discorrer sobre os temas de interesse. Adotou-se a técnica da entrevista semiestruturada com roteiro elaborado de modo a fomentar construções discursivas indicadoras do conceito investigado, o qual associasse ideias que pudessem ser estruturantes deste conceito. Definiu-se *a priori* três questões para motivar as narrativas:

1. Qual a motivação que levou o professor a seguir a carreira do magistério: esta pergunta teve a intenção de resgatar projetos históricos, construídos sob influência da história vivida.
2. Qual a concepção de alimentação saudável: esta pergunta visou estimular possíveis choques entre as crenças tradicional e aquela constituída pela *expertise*;
3. Qual a relação que se estabelece, e se esta relação é possível e justificável, entre a ciência e a indústria de alimentos; esta pergunta não estabelecia nenhuma intenção inicial.

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Após transcrição das entrevistas e posterior estudo e análise do conteúdo das falas, buscou-se expressar estas narrativas em categorias ou temas que traduzissem a informação sobre as construções subjetivas e intersubjetivas em torno do objeto de estudo.

O projeto foi submetido e aprovado pelo CEP/HUPE sob o parecer 517.525 em 20/01/2014.

- Seleção do campo de pesquisa

Foi feita seleção intencional dos programas que viriam a se tornar os campos de pesquisa. Os critérios que definiram a seleção foram:

1. A concentração da produção intelectual do campo científico Alimentação e Nutrição;
2. Localização favorável ao deslocamento da pesquisadora.

A princípio, os estados federativos escolhidos para serem o campo de pesquisa foram Rio de Janeiro e São Paulo, por terem apresentado a maior incidência de grupos de pesquisa neste campo, no período de 2000 a 2008[22]. Foram eleitos os Programas de Pós Graduação em Nutrição (PPGN) da Universidade Federal do Rio de Janeiro (UFRJ), *Campus* Ilha do Fundão, o Programa de Pós Graduação em Alimentação, Nutrição e Saúde da UERJ (PPGANS/UERJ) e o Programa de Pós Graduação em Alimentos Nutrição e Saúde (PPGANS) da Universidade Federal de São Paulo (UNIFESP), *Campus* Baixada Santista. Em relação aos sujeitos de pesquisa e definição da amostra, a intenção inicial era conseguir entrevistar todos os professores dos três programas, independentemente de suas áreas de atuação e assim fechar a amostra por exaustão. A não seleção prévia da área de atuação do professor demonstrava ser um fator favorável à maior ou melhor observação da hipótese inicial de participação da academia no construto racionalidade nutricional, principalmente por permitir a diversidade de discursos: tanto aqueles provenientes de áreas mais vinculadas aos estudos biológicos e clínicos, como dos discursos advindos de áreas com interface com as ciências humanas.

III. Resultados

- Caracterização dos campos

O PPGN/UFRJ possui vinte e quatro professores credenciados e tem o Curso de Mestrado em Nutrição Humana desde o ano de 1985 e o Doutorado em Ciências Nutricionais desde 2005, com as linhas de pesquisa:

1. Bioquímica Nutricional;
2. Ciência e Tecnologia de Alimentos;
3. Epidemiologia Nutricional;
4. Micronutrientes.

O PPGANS/UNIFESP tem o Mestrado Acadêmico em Alimentos, Nutrição e Saúde. Foi fundado em 2014 e comporta treze professores credenciados e as seguintes linhas de pesquisa:

1. Epidemiologia nutricional, saúde urbana, processos socioculturais e políticas públicas;
2. Ciência de Alimentos e Saúde;
3. Nutrição Clínica e Experimental.

O PPGANS/UERJ tem vinte e três professores, quarto deles intencionalmente excluídos por estarem alocados no mesmo núcleo de pesquisa de origem da pesquisadora. Possui as seguintes linhas de pesquisa:

1. Adaptações fisiológicas e metabólicas: programação, nutrição e atividade física;
2. Determinantes individuais e contextuais do estado nutricional e seus impactos na saúde coletiva;
3. Políticas, saberes e práticas em alimentação, nutrição e saúde.

Todos os professores dos três programas foram convidados a participar da pesquisa mas não houve adesão total. Ao todo, foram entrevistados 26 professores dos três programas, assim distribuídos: 9 professores do Programa de Pós Graduação em Alimentação, Nutrição e Saúde da UERJ, 8 professores do Programa de Pós Graduação em Nutrição da UFRJ e 9 professores do Programa de Pós Graduação em Alimentos, Nutrição e Saúde da UNIFESP/Baixada Santista.

O Quadro 1 demonstra como foi minimamente caracterizada a distribuição dos pesquisadores nos referidos programas. Na distribuição entre homens e mulheres, vê-se que na UFRJ a amostra foi composta em sua totalidade por mulheres. Na UERJ e na UNIFESP os números se repetiram: dois homens e sete mulheres. Esse resultado poderia sugerir uma possível proporção entre o número de mulheres e homens na profissão. Em relação ao tempo de conclusão da graduação, o quadro de professores da UFRJ mostra ser mais maduro, com maior número de professores com mais de trinta anos de formação. A UNIFESP concentra o maior número de professores com formação entre dez e vinte anos, o que indica serem professores mais jovens. Esta característica pode ser atribuída ao fato de ser um programa novo e que tenha atraído profissionais mais jovens.

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Quadro 1: Quadro demonstrativo do sexo e do tempo de formação docente

INSTITUIÇÃO	UFRJ	UNIFESP	UERJ PRÉ TESTE
Mulheres	8	7	9
Homens	0	2	0
TEMPO DE TITULAÇÃO	UFRJ	UNIFESP	UERJ
Graduação			
menos de 10a	0	0	1
10-15a	1	4	2
16-20a	1	3	2
21-25a	1	0	1
26-30a	2	1	1
31-35a	1	1	1
36-40a	1	0	1
mais de 40a	1	0	0
Mestrado			
até 5a	0	1	0
6-10a	0	1	3
11-15a	1	2	0
16-20a	5	0	3
21-25a	1	1	1
26-30a	1	0	1
31-35a	0	0	0
36-40a	0	0	0
mais de 40a	0	0	0
Doutorado			
menos de 5a	1	2	2
6-10a	2	5	3
11-15a	4	1	3
16-20a	0	1	0
21-25a	1	0	1
mais de 25a	0	0	0

Fonte: Plataforma Lattes - CNPQ, acessado em abril de 2015.

O Quadro 2 mostra as modalidades de formação que os sujeitos de pesquisa apresentaram, tanto na graduação como mestrado e doutorado. Vê-se que, na graduação, é unânime a presença maciça da formação tecnicista biológica. A UNIFESP apresentou maior número de graduação diferentes de Nutrição. Em relação ao mestrado, algumas curiosidades podem ser percebidas: não se registrou docente com formação em Alimentação Coletiva e já se tem uma tímida procura pelas Humanidades – um mestrado em Sociologia, ocorrido na UNIFESP. No mais, as áreas das formações tendem a refletir a distribuição das principais áreas de atuação: alimentos (bioquímica), nutrição (clínica/ biologia), saúde pública (saúde coletiva/ epidemiologia).

No doutorado, o interesse pelas Humanidades pode ter se expressado melhor na procura pela formação em Ciências. Salienta-se que nem todos os professores tinham o curso de Pós Doutorado e que apenas um professor tinha Livre Docência. Como visto, a graduação dos professores era unanimemente composta pela formação tecnicista e biológica, envolvendo cinco profissões básicas: a Nutrição, a Ciência dos Alimentos, a Medicina, a Educação Física e as Ciências Biológicas. É necessário pontuarmos que tal fato é devido principalmente aos editais de concursos para o magistério superior para o Curso de Nutrição ainda serem exclusivamente voltados para nutricionistas. As outras formações apareceram no escopo dessa pesquisa porque seu interesse estava focado na pós graduação e tais modalidades são permitidas e atualmente em alguns programas até desejadas, em mestrados e doutorados *stritu sensu.* O fato do professor aceitar a participação na entrevista pode ser tomado como um indicativo de flexibilidade no processo de elaboração de crenças que norteiam sua prática profissional; esta aceitação pode ser lida como o reconhecimento de que esse tipo de pesquisa – qualitativa – tem relevância epistemológica.

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Quadro 2: Quadro Demonstrativo Da Especialização Docente

MODALIDADES	UFRJ	UNIFESP	UERJ PRÉ TESTE
Graduação			
Medicina			1
Nutrição	8	6	7
Engenharia de Alimentos		1	
Educação Física		1	
Ciências Biológicas		1	1
Especialização			
Bioquímica	1		1
Residência em Clínica Médica			1
Clínica			
Saúde Pública	1	1	1
Saúde Pública e Medicina Social		1	
Gestão da Saúde Materno Infantil			1
Saúde Nutrição e Alimentação Infantil		1	1
Administração Hospitalar		1	
Adolescência e Equipe		1	
Especialização em Nutrição Clínica		1	
Especialização em Fisiologia do Exercício		1	
Mestrado			
Saúde Coletiva	2		
Epidemiologia			1
Biofísica			1
Bioquímica	1		1
Ciência dos Alimentos	1		
Nutrição	3	1	1
Saúde Pública	1	1	2
Sociologia		1	
Medicina Social			1
Ciências Médicas			1
Ciências Endocrinológicas		1	
Doutorado			
Saúde Coletiva	2	1	2
Epidemiologia em Saúde Pública			1
Nutrição em Saúde Pública		1	
Biofísica			1
Bioquímica	1		
Nutrição	1	1	1
Ciências Nutricionais	1		
Ciências	2	3	
Saúde Pública	1	1	1
Ciência dos Alimentos		1	3
Biologia Celular e Estrutural		1	
Pós Doutorado			
Área não definida	2	2	2
Epidemiologia	1		
Saúde Coletiva	2		
Ciências da Saúde		1	
Ciência e Tecnologia dos alimentos		1	

Fonte: Plataforma Lattes - CNPQ, acessado em abril de 2015.

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- Tratamento e análise das narrativas

A etapa de leitura e interpretação dos resultados das narrativas é o esforço do pesquisador em doar algum sentido ao material coletado para que possa ser usado como forma de melhor compreender a realidade vivida por seus sujeitos de pesquisa, cujos dados o levarão a dar respostas à sua questão de pesquisa[21,23]. A primeira providência tomada nessa fase constituiu em estudar o *corpus* integral das narrativas e reunir as falas em blocos temáticos de acordo com os eixos do roteiro de entrevistas. A partir desta pré análise, obteve-se um arquivo menor, selecionado por trechos das narrativas especificamente relacionados aos temas. Já com esse arquivo menor, a análise foi orientada pela pergunta principal: "há evidências da racionalidade nutricional no discurso dos professores?" aplicada para refinar esta orientação em cada eixo do roteiro de entrevista, a qual desdobrou-se em três outras perguntas: 1) Como a escolha da profissão pode mostrar evidências da racionalidade nutricional? 2) Como a concepção de alimentação saudável pode mostrar evidências da racionalidade nutricional? 3) Como a construção concebida entre a relação ciência/industrialização pode mostrar evidências da racionalidade nutricional? A partir de então, ao se deter no *corpus* de cada bloco temático, era procurada a resposta para essas perguntas. Estas respostas reunidas criaram um arquivo menor – as unidades contextuais, como listadas a seguir: *melhoramento/inovação*, *informação útil*, *prescrição alimentar, conveniência, gênero, responsabilidade do indivíduo, controle do corpo/equilíbrio/poder, racionalidade "naturalizada"/o não racional, conhecimento científico soberano/a doença (cura)*.

A partir dessas unidades contextuais, chegou-se a categorias principais de análise: *conveniência alimentar, prescrição /normatização alimentar, cientificização do processo alimentar*. Chegou-se a essas categorias pela aglutinação de temas: as unidades contextuais melhoramento/inovação, informação útil, conveniência foram aglutinadas na categoria (i) conveniência alimentar. As unidades contextuais prescrição alimentar, gênero, responsabilidade do indivíduo, controle do corpo/ equilíbrio/poder compuseram a categoria (ii) prescrição / normatização alimentar e por fim as unidades contextuais racionalidade naturalizada/o não racional/conhecimento científico soberano/a doença (cura) foram aglutinadas na categoria (iii) cientificização do processo alimentar. O Quadro 4 mostra a distribuição e origem dessas unidades contextuais e categorias analíticas.

Quadro 3: Quadro de distribuição e gênese das unidades contextuais e categorias analíticas

Categorias Analiíticas	Unidades Contextuais
Conveniência alimentar	. melhoramento/inovação
	. informação útil
	. conveniência
Prescrição alimentar / normatização do comportamento	. prescrição alimentar
	. gênero
	. responsabilidade do indivíduo/controle do corpo/equilíbrio/poder
Cientifização alimentar	. racionalidade naturalizada/o não racional
	. conhecimento científico soberano/doença

Fonte: Texto integral transcrito das entrevistas com os sujeitos da presente pesquisa.

- Interpretação das categorias de análise

A categoria conveniência alimentar acomodou as narrativas que mostraram, principalmente, o entendimento de que a alimentação humana pode ser beneficiada pela industrialização de alimentos. Algumas falas mostram inclinação em atribuir à indústria de alimentos o papel de resolução de entraves do cotidiano:

> "o alimento processado, ele tem que ser feito de maneira diferenciada, ele tem que trazer e não é só o rótulo, né, ele tem que ser um produto saudável na perspectiva do que realmente é necessário...não importa se a gente vai ter que adicionar, o que ... a gente vai ter que desenvolver e adicionar pra fazer isso"

e

> "a gente não consegue viver sem o alimento industrializado [...] a indústria hoje já tem procedimentos e técnicas de desenvolvimento de produtos que podem proporcionar, né, um repertório de produtos muito mais saudável do que o que a gente tem hoje".

Notou-se que a conveniência ou a praticidade por vezes está associada às dificuldades contrárias ou contra hegemônicas ao ideal de bem estar:

> "eu acho difícil pra população preparar o vegetal, ele exige realmente um tempo, ele exige a higienização, descascar, o cortar, ah, bom né nada, isso faz rápido o fogo, faz, mas o contexto é muito complicado".

A avidez de informações sobre composição dos alimentos e sobre alimentação equilibrada também é uma preocupação presente nestas falas. O trecho a seguir mostra isso:

> "hoje em dia as pessoas estão procurando, ao mesmo tempo que as pessoas já começam a ter informações de dieta, de alimentação, da sua relação à saúde".

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O gênero, apesar de ter sido absorvido pela categoria prescrição, mostrou associação à ideia de conveniência ao atribuir à mulher a responsabilidade, mesmo que de forma velada, do preparo de refeições e acúmulo de funções, expresso quase como uma justificativa para a conveniência proporcionada pela indústria:

> "nós mulheres [...] a nossa cobrança é muito grande, porque hoje a gente quer ser, né, a gente tá aí no mercado de trabalho, a gente quer ser boa dona-de casa, boa mãe, boa profissional e estar linda, que a sociedade cobra isso da gente".

A categoria prescrição/normatização alimentar aglutinou discursos sustentados pela crença epistêmica de que a prática alimentar deve ser norteada pela prescrição e ainda que o comportamento de modo geral deva ter um modelo normatizador. Exemplo dessas narrativas:

> "vejo como um conjunto de alimentos que atenda desde a questão de requisições nutricionais mas também a questão sensorial, prazer da alimentação, de convívio com outras pessoas".

Esta narrativa tem uma formação peculiar: a primeira afirmação, e por ser a primeira tem maior força de inferência, é a de que o alimento tem que atender requisições nutricionais; só depois é apresentado o aspecto prazeroso e social da alimentação.

Encontrou-se narrativas mais específicas ao aspecto técnico da alimentação, incluindo também os micronutrientes na preocupação alimentar:

> "que atenda os ... também as questões dos macro e micro nutrientes" e "tem que ser adequada na proporção, né, dos macronutrientes, tem que ser... importantíssimo que seja adequado em micronutrientes".

Foram incluídas também nesta categoria de análise as falas que apontavam algum tipo de disciplina, tanto física como atitudinal, como a ideia de equilíbrio sugere:

> "(alimentação saudável) é uma dieta que tem um equilíbrio entre proteínas, carboidratos, lipídios, fibras, vitamina [...] o papel meu é, que eu vejo me policiando é mais tentar não exceder na falta de equilíbrio".

O aspecto da autoridade profissional, também expresso nessa categoria, aparece na fala:

> "o poder que a gente tem nas mãos de fazer uma diferença na vidas das pessoas, né, então eu acho que transmitir o conceito da alimentação saudável".

Também nesta categoria estão incluídas as falas que mostram a responsabilização do indivíduo pela qualidade da alimentação a seguir:

> "instrumentalizar o consumidor porque a pressão vem do consumidor [...] quem tem que fazer esse movimento inverso é o consumidor, é ele que tem que ser orientado pra saber o que buscar".

A categoria cientificização do processo alimentar priorizou as falas que mostravam a crença consolidada no conhecimento científico. Um dos modos de perceber a força dessa crença foi enfatizado pela preocupação com a alimentação dos filhos: "eu tento o máximo possível manter o padrão adequado de dieta pra elas" e "eu sou bem regrada com a alimentação dela, [...] mas dela, sim eu controlo".

A crença na primazia do conhecimento científico aliado ao desenvolvimento tecnológico industrial insuflou algumas narrativas:

> "tem produtos novos ofertados no mercado que são de boa qualidade nutricional, tentam aumentar o controle de fibras, diminuir o valor calórico, por conta da obesidade, mas tem que saber escolher e por isso é necessário procurar um nutricionista pra saber adequar a dieta do indivíduo".

A crença na verdade científica é bem colocada na fala a seguir:

> "é porque existem trabalhos científicos de várias áreas confirmando os porquês que frutas fazem bem, o porque que eu preciso ter feijão [...] nós estamos com uma base da ciência pra recomendar esses alimentos por dia muito maior do que nunca tivemos... agora isso ajuda a normatizar né, então é pela ciência que eu descobri que isso é bom [...] se é que isso faz bem comprovadamente pela ciência eu vou normatizar".

IV. Discussão

- As categorias analíticas como expressão da racionalidade nutricional

Após o trabalho de análise das narrativas, chegou-se a três categorias: a conveniência alimentar, a prescrição/normatização alimentar e a cientificação do processo alimentar.

A categoria conveniência alimentar, nas narrativas, mostrou a intenção de considerar os alimentos industrializados como aliados na resolução de dificuldades do dia-a-dia, como o preparo e conservação de refeições. Desde as mudanças observadas na sociedade, como a participação da mulher no mercado de trabalho, a jornada de atividades aumentada e o menor tempo dedicado ao preparo de refeições, as práticas alimentares têm sofrido influência da ideia de conveniência, dada a necessidade de refeições prontas e nutritivas em menor tempo. Esta ideia está também presente no discurso da mídia de alimentos industrializados, no comércio de refeições fora do lar, como também nas propostas de produtos inovadores que visam o melhoramento da saúde. Medina Filho e Motta em seu estudo "Cidade, consumo conveniente, paradigma científico e marketing" explora essa temática e aponta uma transformação econômica ocorrida, "passando da produção de alimentos para a produção de produtos alimentícios", o que acaba por favorecer o agronegócio em detrimento da agricultura familiar[24]. A consequência disso é o monopólio de grandes indústrias de alimentos que detém a produção e comércio desses produtos, observação feita por

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Contreras e Gracia[25], também apontada por aqueles autores.

Outro fato que favorece os produtos alimentares é que seu uso parece ser legitimado principalmente pela ideia de que são nutricionalmente adequados. Seus rótulos exibem uma composição química do conteúdo, evidentemente sem mostrar o que não apresenta, quando comparado ao produto natural, o qual não apresenta rótulo que chame a atenção para as suas propriedades. Ao lado disso vê-se também que o discurso utilizado para sugerir a adesão ao produto industrializado é o da comodidade encontrada na conveniência, com a promessa de eliminar ou minimizar o trabalho de *fazer* a comida. Mas essa promessa pode não ser totalmente verdadeira, uma vez que, em relação a atividades da vida comum, tudo demanda algum empenho para ser realizado. Talvez não requeira o mesmo tipo de trabalho, mas algum trabalho sempre será necessário, restando ao sujeito escolher ou priorizar o que lhe é mais importante.

A categoria prescrição/normatização alimentar é expressa através da concepção de que a alimentação saudável deva estar regida pelos princípios da Nutrição, os quais prescrevem o equilíbrio entre nutrientes e micronutrientes, como algumas falas evidenciaram. Além disso, esta categoria também considerou narrativas de cunho normatizador, com recomendações de que haja disciplina e equilíbrio na alimentação e ainda, de que o sujeito é o responsável por proporcionar a si e aos que estão sob sua influência a aplicação deste rigor. Desde os primeiros cursos de Nutrição, o que se considerava como informação fundamental e que deveria constar como norma passou por ênfases diferentes, indo desde a ideia de que o certo seria introduzir novos alimentos nos cardápios da população até à noção atual de que o costume alimentar local deva ser respeitado[26]. Essa categoria de análise – prescrição/normatização alimentar – também expressa o discurso científico consensual dos pesquisadores com maior afinidade ao aspecto técnico e biológico da profissão, cujas comprovações são mais facilmente demonstradas através de ensaios clínicos e experimentos laboratoriais. Esta linha de raciocínio mais tendente à linearidade causal, isto é, à ideia de que algo acontece em função de uma causa e que os acontecimentos são explicáveis pela sequência causal de fenômenos, é mais suscetível a compreender a realidade como determinada por uma lógica causal. Assim, nesta lógica a alimentação saudável seria estabelecida muito mais pela ingestão adequada de nutrientes e micronutrientes, o que em uma concepção extremamente reducionista poderia ser conseguido mediante formulação química. Aliás, este é o pressuposto dos suportes nutricionais (enteral e parenteral). Este estatuto de coisas em que existe a norma a seguir, atribui ao sujeito a escolha entre seguir ou não a prescrição e a saúde alimentar poderia ser definida entre a aceitação ou não da norma. Entretanto, acredita-se haver outros elementos responsáveis por essas escolhas, tais como aqueles vinculados à existencialidade da comida.

A categoria cientificização do processo alimentar salienta o aspecto do conhecimento como hegemonia e como garantia de verdade. *Ter o conhecimento das coisas* é debate presente na tradição do conhecimento e remonta à Grécia Clássica com o Rei filósofo de Platão[27], quem agrega a qualidade de conhecimento das coisas à atividade política. O filósofo era o amante do conhecimento, e por isso, o melhor indicado para governar, assim confirmando a relação entre conhecimento e poder. Mais adiante na história da ciência, no século XVI, Francis Bacon (1561-1626) endossará esta relação ao afirmar que "ter conhecimento é ter poder"[28]. É certo que Bacon se referia à capacidade do conhecimento de pôr alguma coisa em movimento, mas o que ficou certo também é que ao longo dos tempos essa relação configurou-se como importante tensão entre nichos específicos de ciência e política. Na esteira desse processo, o iluminismo consagrou o conhecimento advindo da racionalidade como soberano, instituindo a ideia de uma razão organizadora da Natureza, que observava os fenômenos através do método e assim credenciava-lhes a Verdade. A despeito ou não de tais considerações, ou como construto deste preâmbulo histórico, a sociedade atual tem sido denominada de *sociedade do conhecimento*, a qual, na visão de Max Weber[29], atribuiu maior racionalização nas atividades humanas, concedendo maior sistematização da burocracia e incrementando o desenvolvimento tecnológico.

V. Considerações Finais

A título de conclusão temporária deste estudo, retomo a pergunta que norteou a pesquisa, não com o propósito de dar-lhe uma resposta definitiva, mas para considerar como o estudo tratou essa problemática. Seria a *racionalidade nutricional* parte do processo de medicalização da sociedade e estaria a academia implicada com este processo?

A primeira parte desse questionamento leva a considerar que a racionalidade nutricional, definida como prática alimentar muito mais atenta ao permanente cuidado em manter o equilíbrio de nutrientes em detrimento do prazer de comer e dos valores com que a alimentação marca o convívio social a ele associado, é um fenômeno insuflado pela valorização de um tipo de conhecimento que algumas vezes se reveste de científico, mas que nem sempre se trata de conhecimento resultante de pesquisa acadêmica e sim de um tipo de *expertise* interativa[30], não legitimada por campo científico consolidado.

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Parece haver um mimetismo da *expertise* interativa sobre a produção acadêmica legítima, o qual encontra maior facilidade de fluir por se revestir da mesma linguagem e "seriedade" da expertise contributiva, como definida por Collins[31].

Uma das possíveis explicações ao destacado papel ocupado pela Ciência é o grande valor que lhe é atribuído como depositária de confiança em futuro melhor, reflexão já engendrada por vários pensadores. O fato é que em tempo de grande volume de informações acessíveis, os resultados de estudos com escopo de pesquisa científica, quando apresentados, conquistam maior adesão de parte da população. Por esse aspecto, as ofertas de estilos de vida onde seja requerida, aparentemente maior empenho da racionalidade, incluindo neste conjunto a prática alimentar, se mostram mais sedutoras.

As narrativas analisadas apresentaram sensível evidência de que a formação do nutricionista, e aqui nesse estudo destacou-se a formação do pesquisador, encontra peso ou valor bem mais significativo nas construções conceituais geradas por pesquisas relacionadas ao núcleo biológico da alimentação e nutrição, principalmente pelas categorias descritas: conveniência alimentar, prescrição/normatização alimentar e cientificização do processo alimentar. Nota-se que aquele núcleo tem como interesse investigativo a comprovação de hipóteses pelo modelo causa e efeito e suas teorias assumem o valor de verdade comprovada, reafirmando e consolidando a hegemonia do conhecimento científico consagrado pelo método investigativo de refutação ou comprovação de hipóteses. E assim fechamos um ciclo, o conhecimento científico é muito valorizado, a academia supervaloriza suas produções. Não quer dizer que este tipo de investigação proveniente da comprovação de hipóteses, também conhecido como objetivo, não seja importante; obviamente que é, mas o que se vislumbra ser problemático é a pouca valorização de um tipo de conhecimento em que esse modelo de investigação determinista não se verifica,como se acredita ser o caso do conhecimento das Humanidades, dentro do escopo de programas formadores de pesquisadores em Nutrição, área que abrange não só as Ciências Biológicas mas também as Ciências Humanas.

Um modelo de conhecimento voltado mais para apreciação do aspecto biológico da alimentação, talvez não se mostre competente para perceber os mecanismos de despotencialização e desempoderamento subjetivos que ocorrem no processo de medicalização da sociedade. Segundo Peter Conrad[32], autor visitado durante esse estudo, a medicalização, de modo bem simplificado, é um processo em que manifestações subjetivas são tratadas como desordens médicas. Ora, quem trata de definir o que seja desordem médica é a Ciência, mas quem ou o que poderia, em se tratando de disciplina, tratar da manifestação subjetiva, se não estivermos atentos a elas, através de um arsenal de conhecimento que saiba lidar com esse tipo de conhecimento?

Apesar destas observações, também foi visto que as narrativas dos professores foram atravessadas por questões relacionadas às humanidades. Temas como o gênero, a realização da mulher no mercado de trabalho e a implicação do indivíduo na escolha da alimentação estiveram presentes nas falas e mostraram a preocupação do pesquisador em se apropriar, ou pelo menos, incorpora-las ao seu perfil profissional, uma vez que essas falas se pronunciaram durante as entrevistas.

Um ponto insistente em se fazer relevante na organização dessa reflexão final é a lacuna apontada, em algumas narrativas, da necessidade de haver mais estudos tendo as Humanidades como marco teórico e reflexivo. Faz-se necessário um estudo das práticas alimentares que contemple de modo mais íntimo e acurado a relação que a comida acorda com o ser humano em seus diferentes lugares: cultivo ou produção, distribuição, armazenamento, consumo. Dentro do consumo a miríade relacional se multiplica: comida do campo, comida de festa, comida de escola, comida de velho, comida crua, etc. Nesta miríade de significados e sentidos que a comida assume, não há muito espaço ou condições para se colocar em pauta as relações de causação de efeitos.

Por fim, é mister reconhecer que nessa interface de objetos de estudos - a alimentação e nutrição e a reflexão filosófica, onde penso ter me situado, ainda há muitos pontos de discussão a se encaminharem.

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4. Use of computer is recommended: As you are doing research in the field of medical research then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

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6. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. Revise what you wrote: When you write anything, always read it, summarize it, and then finalize it.

8. Make every effort: Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

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10. Use proper verb tense: Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. Pick a good study spot: Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice.

Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. Arrangement of information: Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. Multitasking in research is not good: Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. Go to seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

19. Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

20. Think technically: Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

21. Adding unnecessary information: Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

22. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

23. Upon conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.



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Mistakes to avoid:

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.
- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.

Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.



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Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

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Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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