

## STUDY TOUR REPORT – MSc in Sports Nutrition 2023-24

Day 1

05/03/2024

### Venue of visit:- MYSORE UNIVERSITY

Mysore University, officially known as the University of Mysore, is a prominent public state university located in Mysore, Karnataka, India. Established in 1916, it is one of the oldest and most esteemed universities in India.



### HISTORY

Mysore University is the sixth university to be established in India and the first in Karnataka. It has 54yrs old department of nutrition. This department is named as "Manasgangothri".

Mysore University is recognized by the University Grants Commission (UGC) and accredited by the National Assessment and Accreditation Council (NAAC) with an 'A' grade.

**ACADEMIC PROGRAMS:** The university offers a wide range of undergraduate, postgraduate, and doctoral programs across various disciplines including arts, science, commerce, law, management, education, and technology.

RESEARCH AND INNOVATION S: The university is known for its emphasis on research and innovation. It has numerous research centers, institutes, and laboratories conducting cutting-edge research in various fields.

We were lucky to hear the research and experience from the 6 PhD students and their mentor.

- 1) Dr. Seema Siddiqui shared her research insights that was “studies on promotion of dietary status and food behaviour among children with autism”.
- 2) Dr. Akshata shared her research insights on “Impact of early nutrition support on clinical and metabolic outcomes in subjects with pancreatitis. Also made us aware of product formation which was “Panlife” created by her for the research.
- 3) Ms. Punita shared her research insights on “Cardiovascular risk assessment and nutritional modulation in type 2 Diabetes Mellitus” which also included functional food formulation.
- 4) Ms. Shraddha shared her research insights on “Clinical metabolic and nutritional status of women with polycystic ovary syndrome (PCOS).
- 5) Ms. Pratiksha Bhat shared her research insights on “ nutrition in pre-dialysis chronic kidney disease.
- 6) Ms. Shrejena from human development department also shared her research insights on “Bio-availability of (Agathi) polyphenols and it’s ability to inhibit lipid peroxidation.

#### DIFFERENT FACILITIES:

We also saw “Inbody 770” a body composition analysis machine which does whole body analysis including regional analysis of every body part like left arm, right leg, trunk etc.

Later we saw cooking lab with all equipment and different machines that are used for research as well as cooking practicals. We also saw chemistry lab and oil extraction machine.

#### LEARNINGS:

Along with guidance of all research scholars it was a great pleasure to visit Mysore University.

We also got to hear from one of the PhD scholar, how she and her classmate started their own business with knowledge received from their studies. That was a great inspiration and motivation for us to think about “how we can provide people a platform to earn and help society with our knowledge”.

Their business ventures name was “AMBARA WELLNESS CLINIC” , It provides family wellness programs, lifestyle corrections, stress management, workouts, and different Alternative strategies like naturopathy, yoga, physiotherapy etc.

Overall, Mysore University holds a significant position in the educational landscape of India, contributing to the advancement of knowledge, fostering academic excellence, and nurturing future leaders across various domains.

Day – Tuesday

Date – 5<sup>th</sup> March 2024

**Venue of visit:- VRINDAVAN GARDEN**

The visit was organised with the help of teachers and tour operators.

Observation at site –

Upon arrival at Vrindavan Garden, the first impression was striking, with lush green lawns and vibrant flowers. The weather was pleasant, enhancing the enjoyment of strolling through the garden pathways.

Musical Fountain Show –

The highlight of the visit was the mesmerizing musical fountain show held in the evening. The synchronized water jets, colorful lights, and melodious music created a captivating spectacle, delighting visitors of all ages.



#### Boating –

The garden features a serene lake where visitors can enjoy boating amidst lush greenery, adding to the charm and tranquility of the surroundings.

#### Maintenance and Cleanliness –

Overall, the garden appeared well-maintained, with regular upkeep evident in the neatly trimmed hedges, litter-free pathways, and clean restroom facilities. However, some areas could benefit from minor repairs and additional garbage bins to further enhance cleanliness.

#### Take home applications –

Visitors seemed to thoroughly enjoy their time at Vrindavan Garden, as evidenced by their smiles and engaged conversations. Families, couples, and groups were seen leisurely exploring the garden, capturing moments, and relishing the tranquil ambiance.

## Conclusion –

In conclusion, the visit to Vrindavan Garden, Mysore, was an enriching experience, offering a delightful blend of natural beauty, recreational activities, and cultural ambiance. The garden's attractions, maintenance, and visitor-friendly environment make it a must-visit destination for tourists seeking relaxation and rejuvenation amidst nature's splendor.

Day – Wednesday

Date – 6<sup>th</sup> March 2024

**Venue of visit – Nandini Dairy, a flagship brand of the Karnataka Cooperative Milk Producer's Federation Limited (KMF), is renowned for its quality dairy products.**

Observation at site :

1. The process begins with the reception of raw milk from local dairy farmers. The milk undergoes rigorous testing for quality parameters such as fat content,

solids-not-fat (SNF), acidity, and microbial load to ensure adherence to quality standards.

2. The raw milk is then subjected to centrifugal separation to separate cream from the milk. This step is crucial for producing various dairy products with different fat contents.
3. The milk is pasteurized by heating it to a specific temperature to eliminate harmful bacteria while preserving its nutritional value. Pasteurization ensures the safety and shelf-life of the dairy products.
4. After pasteurization, the milk is homogenized to break down fat globules and distribute them evenly throughout the milk, resulting in a consistent texture and preventing cream separation.
5. Depending on the desired fat content, the milk is standardized by adjusting the ratio of cream to skim milk. This step ensures consistency in the fat content of the final products.
6. The standardized milk is then processed to manufacture various dairy products such as milk, curd, butter, ghee, and mysore pak. Each product follows specific processing techniques and formulations to meet quality standards and consumer preferences.
7. The processed dairy products are packaged using advanced packaging machinery to maintain freshness and extend shelf-life. Proper labeling and batch coding are done to ensure traceability and compliance with regulatory requirements.
8. Throughout the production process, stringent quality control measures are implemented to monitor parameters such as taste, aroma, texture, and microbial safety. Regular quality checks are conducted at various stages to uphold the brand's reputation for excellence.

Take home applications:

We learned about the critical role of quality control, pasteurization, and homogenization in ensuring high-quality dairy products at Nandani Dairy. Standardization maintains consistent fat content, enhancing overall quality. The visit showcased milk's versatility in creating various dairy products, reflecting innovation. Proper packaging and labeling are crucial for freshness and authenticity, highlighting attention to detail. This experience provided valuable insights into dairy production and Nandani Dairy's commitment to excellence.



To conclude, the visit to Nandini Dairy provided a comprehensive understanding of the meticulous production process involved in delivering high-quality dairy products. From stringent quality control measures to technological innovations, Nandini Dairy's commitment to excellence in the dairy industry is evident. Consumers can trust the brand's products for their quality, nutritional value, and consistency. The emphasis on hygiene, product diversity, and packaging further underscores Nandini Dairy's dedication to providing consumers with safe and wholesome dairy products. Overall, the visit highlighted the importance of quality control, innovation, and brand commitment in the dairy industry.



## Venue of visit:- Mysore Palace

March 6<sup>th</sup>, 2024.

Wednesday.

We were accompanied by the teacher staff including Vibha Hasija Ma'am, Protity Dey ma'am, Sheetal ma'am as well as tour guides Nisha ma'am, Prince sir.



Mysore Palace, a stunning architectural masterpiece, is situated in the heart of the city of Mysore, Karnataka, India. Also referred to as the Amba Vilas Palace, it serves as a prominent symbol of the opulence and grandeur associated with the erstwhile Kingdom of Mysore.

The palace boasts a vast expanse of intricately carved arches, domes, and towers, adorned with vibrant colors, intricate patterns, and detailed sculptures. The exterior facade is a mesmerizing fusion of pink marble domes, gray granite walls, and intricate floral motifs, creating a stunning visual spectacle.



The interiors of the palace are equally magnificent, featuring ornate ceilings, elaborate chandeliers, stained glass windows, and richly decorated halls and chambers. The Durbar Hall, the main ceremonial hall of the palace, is particularly impressive, with its intricately carved wooden ceiling, marble floors, and a grand throne made of gold.

Throughout the palace, we admire a vast collection of paintings, artifacts, sculptures, and royal memorabilia, showcasing the rich cultural heritage and history of the Wadiyar dynasty. The palace also houses a private royal temple dedicated to the family deity, Chamundeshwari.

Surrounding the palace are beautifully landscaped gardens, fountains, and courtyards, adding to its allure and charm. Additionally, the palace is illuminated with thousands of lights during special occasions and festivals, creating a magical ambiance that attracts visitors from far and wide.

In addition to its architectural splendor, the Mysore Palace holds immense historical significance as the official residence of the Wadiyar dynasty, who ruled the Kingdom of Mysore for centuries. Today, it stands as one of India's most visited tourist attractions, offering us a glimpse into the grandeur and magnificence of India's royal past.

## **Venue of visit:- Sports Authority of India**

Introduction:

Our visit to the Sports Authority of India (SAI) on March 7<sup>th</sup>, 2024, provided an extensive understanding of the institution's multifaceted approach to athlete development and care.



### Facilities:

SAI's facilities are a testament to its commitment to excellence in sports training. We embarked on a comprehensive tour, exploring the diverse array of state-of-the-art amenities catering to various sports disciplines including running, throwball, javelin, basketball, badminton, volleyball, and more. Notable among these facilities is the presence of a swimming pool primarily dedicated to athlete recovery, alongside strength and conditioning rehabilitation centers.

From specialized training arenas to rehabilitation centers, each facility is meticulously designed to meet the unique needs of athletes at different stages of their careers.

### Nutrition and Hydration:

Our immersion into SAI's nutrition program was enlightening. We delved into the intricacies of meal preparation in their expansive kitchen, where a staggering variety of over 30 dishes are meticulously crafted to accommodate athletes from diverse cultural backgrounds. Chef Mr. Jairaj provided valuable insights into the science of nutrition and its role in optimizing athletic performance and recovery. We learned about the meticulous analysis of athletes' dietary requirements and the development of innovative recipes tailored to their specific needs.

### Training Schedule:

The training schedule at SAI is a well-oiled machine, finely tuned to maximize athletes' potential. We observed firsthand the rigorous training sessions, characterized by a balance of technical skill refinement, strength and conditioning exercises, and strategic rest periods. The structured approach ensures that athletes receive comprehensive preparation, fostering both physical prowess and mental resilience.

### Athlete Assessment and Support:

SAI's holistic approach to athlete care encompasses thorough assessments and personalized support systems. We witnessed the comprehensive evaluation processes, which encompass anthropometric measurements, biochemical analyses, medical screenings, and psychological assessments. These assessments form the foundation for tailored support programs designed to address each athlete's unique strengths, weaknesses, and aspirations.

#### Innovation and Learning:

Innovation is at the heart of SAI's ethos, driving continuous improvement in all aspects of athlete development. We explored the institution's research and development initiatives, which have led to the creation of cutting-edge training methodologies, equipment, and nutritional supplements. Moreover, SAI's commitment to education extends beyond the athletes themselves, as coaches and support staff are continuously trained and empowered with the latest knowledge and techniques in sports science and management.

#### Conclusion:

Our visit to the Sports Authority of India was an eye-opening experience, revealing the depth and breadth of the institution's dedication to excellence in sports training and athlete care. From world-class facilities to innovative nutrition programs and comprehensive support systems, SAI sets a gold standard for sports institutions worldwide. We are deeply grateful for the opportunity to learn from SAI's expertise and are inspired to incorporate these insights into our own endeavors in the pursuit of athletic excellence.

Date: 7<sup>th</sup> March, 2024

Day: Thursday

### **Venue of the visit: St. John's Research Institute**

The visit was organised with the help of teachers and tour operators

#### Introduction:

St. John's Research Institute is a pioneering institution dedicated to advancing knowledge in developmental biology, nutrition, and clinical research. One of its key areas of focus is body composition assessment, which involves various methods to

accurately measure and understand the body's composition across different stages of life and in various conditions like under and overnutrition.

#### Body Composition Assessment:

Ms. Rebecca Raj, a knowledgeable representative from the institute, provided a comprehensive overview of the methodologies employed in body composition assessment. These methods include laboratory techniques and field methods such as stable isotopes, BOD POD, DEXA, BIA, and skinfold techniques. These tools allow for precise measurements and insights into adaptations related to nutritional status.

#### Observations at Site:

During the visit to St. John's Research Institute, several observations were made regarding the facilities and equipment utilised in body composition assessment:

**BOD POD and PEA POD Machine:** These sophisticated devices employ air displacement plethysmography to measure body composition accurately. Notably, an ambulance equipped with the BOD POD machine facilitates assessments in rural areas, demonstrating the institute's commitment to reaching diverse populations.

**Potassium Count Machine:** The institute boasts a potassium count machine, emphasising the significance of electrolyte balance in sports nutrition. This technology enables practitioners to optimise athletes' hydration and performance based on precise measurements.

**Dual-Energy X-ray Absorptiometry:** During the DEXA demonstration, the volunteer laid still on the scanner table as the researcher positioned the scanner arm over her body. X-ray beams were emitted, passing through her body and detected by a sensor, generating detailed images and data. The analysis revealed the distribution of bone mass, lean tissue, and fat tissue, offering insights into health risks such as osteoporosis and obesity.

**Isometric Dynamometer:** Demonstrated by PhD students, the isometric dynamometer provides valuable insights into static and dynamic muscle strength across major muscle groups. This tool is essential for understanding muscle function and assessing changes in strength over time.

**Hand Grip Dynamometer:** Visitors were acquainted with the hand grip dynamometer, which assesses grip strength—a crucial indicator of overall muscle function and health. Proper usage involves maintaining a right angle arm position and exerting maximum isometric effort for accurate measurements.

Indirect Calorimetry: Another notable technique demonstrated was indirect calorimetry, which measures oxygen consumption and carbon dioxide production to estimate energy expenditure. This method offers insights into metabolic rate and nutrient utilisation.

#### Key Learnings:

The visit to St. John's Research Institute provided valuable insights and key learnings:

Accurate body composition assessment is crucial for understanding nutritional status and adaptations to various conditions.

Advanced technologies such as BOD POD, potassium count machine, and dynamometers offer precise measurements and insights into muscle function and metabolic rate.

Field-friendly equipment like the BOD POD ambulance ensures accessibility to diverse populations, including those in rural areas.

Practical applications include optimising nutrition and hydration for athletes based on precise measurements and understanding muscle strength and function in clinical settings.

#### Conclusion:

St. John's Research Institute stands at the forefront of body composition assessment and nutritional research, employing cutting-edge technologies and methodologies to advance understanding and improve health outcomes. The visit provided valuable insights and practical applications for professionals in the field of nutrition, sports science, and clinical practice.

#### Take-Home Applications:

Researchers and healthcare practitioners can integrate the learnings from St. John's Research Institute into their practice by utilising advanced body composition assessment techniques, prioritising electrolyte balance in sports nutrition regimens, and incorporating muscle strength assessment tools for comprehensive health evaluations. Additionally, the insights gained from indirect calorimetry can inform personalised nutrition plans tailored to individual energy requirements, thereby optimising health and well-being.



Date and Time: March 8, 2024, 11:45 AM

## **Venue: Padukone – Dravid Centre for Sports Excellence (CSE)**

Organisation of the Visit:

Our visit to the Padukone – Dravid Centre for Sports Excellence (CSE) was well-planned, giving us a good understanding of its operations and facilities. We were guided by the respected Chief Dietitian, Anandhi Iyer, who kindly shared her valuable insights into sports nutrition and different career options in the field.



Observations at Site:

The Padukone – Dravid Centre for Sports Excellence (CSE) is a large sporting centre spread across 16 acres, offering excellent facilities for nine different sports. These include Badminton, Cricket, Football, Tennis, Swimming, Shooting, Squash, Basketball, and Volleyball. The centre also has a gym, Pilates room.



The centre is known for nurturing talented athletes and building a strong sports community in India. It also supports Paralympic athletes and offers opportunities to deserving athletes at no cost. The presence of famous Olympians adds to its reputation for high-quality training.

Brief information on the sports facilities:

Badminton: Modern courts for professional training.

Cricket: Indoor and outdoor facilities for cricket practice.

Football: Fields for different formats, including 5-a-side football.

Tennis: Courts for regular and quick start tennis.

Swimming: Pools for indoor and outdoor swimming.

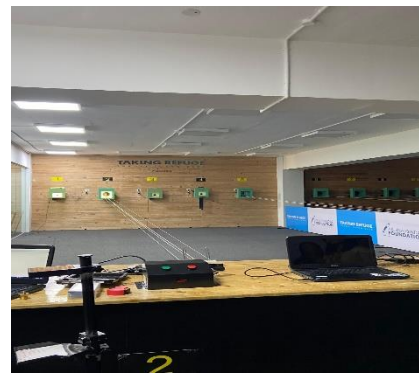
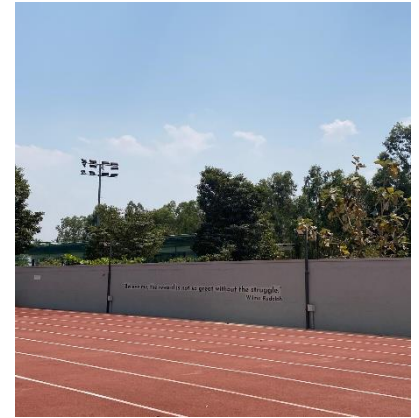
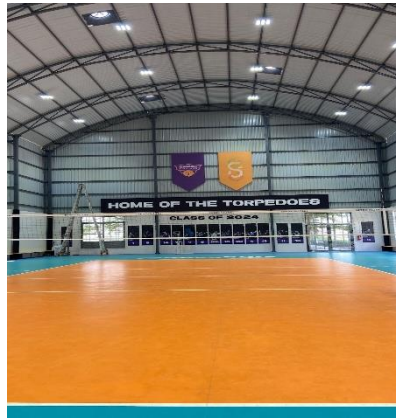
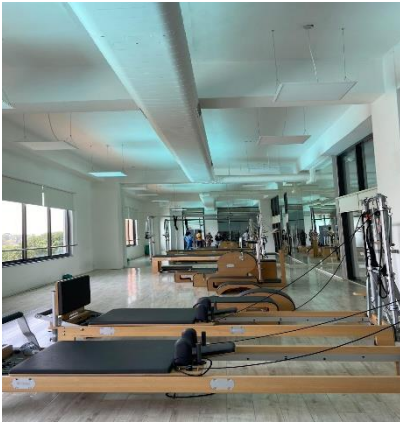
Shooting: Ranges for shooting practice.

Squash: Courts for squash players.

Basketball: Indoor facilities for basketball practice.

Volleyball: Setup for beach volleyball.

Athletic Track: Track for running and athletic events.



#### Notable Individual:

Chief Dietitian Anandhi Iyer exemplified warmth and expertise during our interaction. Her profound knowledge of sports nutrition, coupled with insights into career prospects, left a lasting impression. Her dedication to the athletes' well-being is evident, contributing significantly to the centre's holistic approach to sports training.

#### Key Learnings:

Our visit provided invaluable insights into the intricate world of sports nutrition and the multifaceted opportunities it presents. Understanding the pivotal role of nutrition in athletic performance has broadened our perspective as upcoming sports nutritionists. Additionally, witnessing the dedication and passion of the athletes at the centre served as a source of inspiration.



#### Take-Home Applications:

The visit reinforced the importance of continuous learning and staying updated with advancements in sports nutrition. We gleaned practical insights into tailoring nutrition plans for athletes, emphasising the significance of individualised approaches. Furthermore, the experience underscored the need for holistic support systems in maximising athletes' potential.

In conclusion, our industrial visit to the Padukone – Dravid Centre for Sports Excellence (CSE) was enriching and enlightening. We extend our gratitude to Chief Dietitian Anandhi Iyer and the entire staff for their hospitality and invaluable contributions to the sports community. The experience has undoubtedly equipped us with invaluable knowledge and inspiration as we embark on our journey as sports nutritionists.

Date: Women's Day, March 8, 2024

## Venue of visit:- Gold's Gym, Bangalore

Trainers: Dr. Nikita Nadkarni & Mr. Vishal Thomas

### Introduction:

On Women's Day, our team had the opportunity to visit Gold's Gym in Bangalore, which is affiliated with Cult Fit. The focus of our visit was to learn about functional exercises and the importance of weight training, especially for women. Dr. Nikita Nadkarni and Mr. Vishal Thomas led the session, guiding us through various exercises and enlightening us about their benefits.

### Functional Exercises:

Dr. Nikita Nadkarni and Mr. Vishal Thomas introduced us to a series of functional exercises aimed at improving overall strength and mobility. These exercises included:

1. Squats: A fundamental lower body exercise targeting the quadriceps, hamstrings, and glutes.
2. Deadlifts: A compound exercise engaging multiple muscle groups, particularly the posterior chain.
3. Russian Twists: A core-strengthening exercise that also engages the obliques.
4. Shoulder Press: A compound movement targeting the shoulder muscles, including the deltoids and trapezius.
5. Lunges: Another lower body exercise that helps improve balance, coordination, and strength in the legs.

### Importance of Weight Training for Women:





During the session, Mr. Vishal Thomas emphasized the significance of weight training for women, particularly its role in enhancing bone density. He explained that weight-bearing exercises, such as those demonstrated, help stimulate bone growth and reduce the risk of osteoporosis, a condition prevalent among women as they age. By incorporating weight training into their fitness routines, women can not only strengthen their muscles but also fortify their bones, contributing to overall health and longevity.

#### Conclusion:

Our visit to Gold's Gym Bangalore affiliated with Cult Fit proved to be both educational and empowering, especially on Women's Day. Dr. Nikita Nadkarni and Mr. Vishal Thomas provided valuable insights into functional exercises and dispelled myths surrounding weight training for women. The knowledge gained from this experience will undoubtedly influence our approach to fitness and encourage us to incorporate strength training into our routines for holistic well-being. We extend our gratitude to the trainers for their expertise and dedication to promoting women's health and fitness.