

USING INTERACTIVE METHODS IN TEACHING NUTRITION HYGIENE

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Abstract:

Teaching nutrition hygiene in medical institutions is a complex process that requires strict adherence to hygiene and sanitary requirements during dietary nutrition, food processing, preparation, and delivery. Since patients' health in healthcare facilities directly depends on the quality and safety of nutrition, maintaining hygienic standards in food service is of utmost importance. To ensure the meaningfulness of the educational process, the use of pedagogical technologies with interactive methods enhances the quality of teaching.

Keywords: Pedagogical technology, Interactive methods, SWOT analysis table, Nutrition hygiene, Brainstorming method.

The Law of the Republic of Uzbekistan "On Education," Presidential Decrees PQ-60 dated December 24, 2021, on additional measures for ensuring academic and organizational independence of state higher education institutions, and PQ-61 on financial independence of higher education institutions, as well as Presidential Decree PQ-188 dated April 1, 2022, on the establishment of Samarkand State Medical University and improvement of personnel training systems, together with the Ministry of Higher and Secondary Specialized Education's order No. 19-2018 dated August 9, 2018, "On approval of the system for monitoring and assessing student knowledge in higher education institutions," and Ministry of Health orders, provide the regulatory framework for assessing students' mastery of the taught subject.

SamDTU's educational process for 2nd to 4th-year students is organized according to the credit-modular system in compliance with the European Credit Transfer and Accumulation System (ECTS). Student knowledge is evaluated based on the following criteria: the ability to make independent conclusions and decisions, creative thinking, independent reasoning, practical application of knowledge, understanding and expression of the subject's essence. Grades are assigned as follows: 5 (excellent) for scores 90-100; 4 (good) for 70-89.9; 3 (satisfactory) for 60-69.9; and 2 (unsatisfactory) for below 60.

Pedagogical technology (PT) is a modern method of knowledge transmission in higher and secondary specialized education, which achieves significant results in the teaching system. It updates the activities of instructors and develops students' thinking and

reasoning abilities. Pedagogical technology has three aspects: scientific (the goal, content, and methods are scientifically based and pedagogical processes are planned), descriptive (application of drug use principles in diseases, pharmacokinetics, and pharmacodynamics), and technological (teaching technology as an integral part of the didactic system).

Interactive methods are teaching techniques based on students' interaction. All participants exchange opinions, share information, solve problems together, model situations, evaluate others' actions, and attempt problem-solving. The aim is to create a comfortable learning environment where students feel their success and intellectual ability, making the learning process effective.

Graphic organizers are recognized as tools for visually presenting thinking processes. The SWOT method (Strengths, Weaknesses, Opportunities, Threats) is used to develop student tasks that help them distinguish important from unimportant information. For this, small groups are formed and topics distributed.

For example, hygienic requirements in medical nutrition organization:

Medical nutrition is based on dietary principles, with individualized and fractionated nutrition recommended for each patient. Due to variability in food assortment, preparation time, and quantity, food undergoes multiple mechanical and heat treatments, increasing the risk of microorganism proliferation and foodborne toxic infections.

Hygienic requirements for kitchen and buffet systems:

Food preparation areas in medical institutions must be built according to sanitary regulations. Small hospital units place food blocks within the building, while large hospitals have central kitchens in separate buildings. Standards for space in hospital food units are defined due to their specific function. Modern medical facilities not only speed patient recovery but improve overall sanitary and hygienic conditions.

For cleaning dining tables, a set of white napkins named "for table cleaning" is used. Dirty dishes, tools, and utensils are collected using special carts or transport devices. Cleaning equipment for production, warehouses, showers, and toilets is marked with greasy paint, kept in separate workshops or locked cabinets.

Regulatory documents from the Ministry of Health set standards for hospital and sanatorium food service systems, dishwashing, disinfection, and transportation.

Analysis covered:

1. Placement of technological equipment and inventory: Equipment in production shops should allow free access. Separate equipment is used for raw and finished products. Work tables must be made of corrosion-resistant materials (excluding

galvanized iron). Cutting boards are made from hard wood and labeled ("raw," "boiled").

2. Washing systems and dish handling: Manual washing requires 3-section tanks; mechanical washing needs 5-section systems. Hot water (65°C) and detergents are used; disinfection is done with 0.2% chlorine solutions. Drying is done on metal racks or in special cabinets. Detergents and disinfectants must be approved by the Ministry of Health.

3. Waste collection: Waste is collected using pedal tanks and metal buckets. Facilities with more than 150 seats must use special containers stored in separate chambers.

4. Food transportation: Food is transported in specially designed vehicles under refrigerated or isothermal conditions. Vehicle interiors must be coated with galvanized iron. Semi-finished products must be transported in labeled containers with lids and smooth surfaces.

5. Tableware: Materials include faience, porcelain, glass, aluminum, cupronickel, stainless steel. Broken or chipped dishes are prohibited. Each dining room should have at least three sets of tea cups, forks, spoons, and knives.

6. Research results show that food service in hospitals and healthcare facilities must fully comply with hygienic requirements. Proper placement of equipment, mechanization of dishwashing, waste management, and transportation standards are essential for patient health, sanitation safety, and production efficiency.

SWOT Analysis:

1. Strengths: Well-equipped buffets with hot and cold water, electric kettles, double washing baths, food heating devices, cleaning and disinfecting tools.

2. Weaknesses: Food safety challenges, risk of contamination if "clean" and "dirty" dish streams intersect.

3. Opportunities: Special measures for specialized groups, e.g., separate dining rooms for patients with contagious tuberculosis with dedicated color-coded dishes and sterilization equipment.

4. Threats: Potential adverse effects when using food with certain drugs.

5. Each hospital department has buffets equipped with necessary facilities for hygienic food preparation and dishwashing. Separate dining areas for patients with infectious diseases are maintained. Food service areas are often located in separate buildings or ground floors with independent access, properly segregating production, storage, and sales zones.

The "Brainstorming" method is also used in teaching. Sample questions include:

Which products affect appetite? Mechanisms of action of spicy substances? Side effects of appetite-suppressing foods? Foods affecting gland activity? Substances affecting stomach glands? Diet used in hypoacid states? Mechanism of substances used in hyperacid states? Substances affecting gastrointestinal motility? Mechanism of action of inorganic laxatives? Indications and contraindications for inorganic laxatives? Mechanism of organic laxatives? Mechanism of antidiarrheal drugs?

Students are asked to think about and describe answers, enhancing critical thinking. Learning is also supported through the mt.sammu.uz platform, where practical lessons, video lectures, presentations, tests, case studies, and illustrated tests are available, creating optimal conditions for mastering the material.

Medical education requires not only theoretical knowledge but also practical application to develop competent healthcare providers. Deepening skills through practice and self-assessment methods is crucial. Being able to diagnose diseases correctly and prescribe appropriate medications is a skill to be cultivated.

Students mastering hygiene thoroughly during their education will become skilled doctors. The educational system provides all necessary resources. We encourage teachers to motivate students with interesting and practical examples. Lesson Objectives: To explain the basic principles and importance of nutrition hygiene to students. To teach hygiene rules and how to apply them correctly in everyday life. To deepen students' understanding of the topic through interactive activities. Teaching Methods: Brainstorming, SWOT analysis, Group discussions, Graphic organizers (diagrams, tables), Case study analysis, Short tests and quizzes

Lesson Plan Stages:

1. Introduction (5-7 minutes)

The teacher gives a brief introduction to the topic: What is nutrition hygiene? Why is it important in medicine? Ask students: "What do you think is the importance of proper nutrition and hygiene rules?" Use brainstorming to record students' ideas (on the board or electronic display).

2. Main Part (30-35 minutes)

A) Short Lecture Basic principles of nutrition hygiene: Maintaining cleanliness Proper food storage Washing hands and preparing food before use Separating cutting and preparation of poultry, fish, and meat Heating food properly and on time Sanitary rules for kitchens and buffets The role of hygiene in disease prevention B) Group Work with SWOT Analysis (15 minutes) Divide students into groups of 4-5. Assign each group one of the following topics: Strengths of hygiene in food preparation Weaknesses of nutrition hygiene Opportunities to improve hygiene Threats to hygiene Groups discuss

their topics and then present their results. Summarize the results collectively. C) Case Study Analysis (10 minutes)

Example: "How should nutrition hygiene be organized in a hospital to prevent disease spread?" Students share ideas and propose practical solutions. The teacher provides correct answers and additional explanations.

3. Conclusion (5-10 minutes) Conduct a short test or quiz: "What hygiene rules should be followed before preparing food?" "What conditions are considered safe for food storage?" Students answer; the teacher explains correct answers. Homework: Observe nutrition hygiene rules in their own family or nearby kitchen and write a report.

Additional Interactive Materials: Graphic organizers: Diagram of sanitary stages in the food process. Video clips: Kitchen cleanliness procedures (if possible). Online tests: Use relevant materials on the mt.sammu.uz platform. Teacher's Tips: Engage students actively in discussion. Use practical examples to relate the topic to everyday life. Assign small roles in group work (coordinator, recorder, presenter, etc.) so everyone participates. Give positive feedback frequently to motivate students.

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