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PROJECT: MARitime Soft Skills for Onboard Healthy Nutrition and CULinary Arts in Seagoing Services – CUL-MAR-Skills

Erasmus+ Program - KA220-VET - Cooperation partnerships in vocational education and training
2023-1-RO01-KA220-VET-000156711

WORKSHOP: „Improvement solutions for healthy nutrition in seafaring activities”

**Organized by ROMANIAN NAVAL ACADEMY “MIRCEA CEL BATRAN” (RNA),
CONSTANTA, ROMANIA
JUNE 05th, 2025**

EVENT AGENDA

Seminar: „Improvement solutions for healthy nutrition in seafaring activities”

Thursday, June 5th, 2025

- 10:30-11:00 – Registration for Cul-Mar-Skills workshop - attendance registration, folders distribution
- 11.00-11.15 – Welcome session, project introduction – Col.dr. Catalin Popa
- 11.15-11.30 – Project results and project activities presentation – partners representatives
– RNA auditorium plenary session IMAF Conference
- 11:30-12:00 – Participants’ transfer to MIRCEA Tall Ship – RNA team, participants
- 12.00-12.30 – Visit of– Ship galley visit, victualling services presentation, food samples, recipe presentation – Ship CO, Col.dr. Catalin Popa, Cdr. Marius Cucu
- 12:30-13:30 – onboard MIRCEA TS - Nutrition onboard ships **„Improvement solutions for healthy nutrition in seafaring activities”** – presentations, debates, and





discussions – partners presentations as below in the agenda (10 presentations) – Col Catalin Popa, Cdr Marius Cucu
13.30-14.00 – Transfer to the Seamanship Training Base
14.00-14.30 – Visit of campus galley, victualling services presentation, recipes presentations - Col.dr. Catalin Popa, Cdr. Marius Cucu, participants
14.30-17.00 – Bufee (Lunch) on Seamanship Training Base – Navy recipes presentations - Cul-Mar-Skills WP4 debates on cooking book, solutions for nutrition improvement
17.00-17.30 – Discussions – debates, Q&A session
17.30 – Closing remarks

Workshop Scientific Board:

Chairman: Col. Dr. Catalin POPA (Romania)

Prof. Dr. Taner ALBAYRAK (Türkiye)

Prof. Dr. Maria LEKAKOU (Greece)

Dr. Ozdemir PINAR (Türkiye)

Dr. Ivo Yotzov (Bulgaria)

Section Coordinator:

Cdr Marius CUCU (Romania)

Board Members:

Dr. Eker İŞÇİOĞLU (Türkiye);

Dr. Kamelya NARLEVA (Bulgaria);

Dr. Magdalena STEFANOVA (Bulgaria);

Dr. Eleni IAKOVAKI (Greece);

Dr. Vasiliki BOUNTZIOUKA (Greece);

Dr. Ioannis KATSOUNIS (Greece);





E1: IMPROVEMENT SOLUTIONS FOR HEALTHY NUTRITION IN SEAFARING ACTIVITIES

June 05th 2025

CUL-MAR-SKILLS PROJECT PRESENTATION

Col.dr. Assoc.Prof.dr. Catalin POPA

In introducing healthy nutrition standards on maritime vessels, **MARitime Soft Skills for On-board Healthy Nutrition and CULinary Arts in Seagoing Services – CUL-MAR-Skills** create an extremely timely and valued opportunity. This seminar, marked as "Improvement Solutions for Healthy Nutrition in Seafaring Activities", will majorly present innovative approaches and solutions aimed at improving the health of the crew through nutrition, culinary arts, and a practical approach to food management onboard ships.

This seminar brings together a collection of abstract papers and presentations given under the SeaConf International Conference frame, within the seminar themed "Improvement Solutions for Healthy Nutrition in Seafaring Activities", which was held on 16 and 17 May 2025. This seminar is one of the activities within the CUL-MAR-Skills project. It is devoted to finding an answer to what steps can be taken to diversify and drastically improve nutritional conditions and culinary practices on board, as well as conditions of health of the crew in conditions of the maritime environment. The challenges offered by seafaring are quite unique because of their limited resource and confined space; thus, the proper health and well-being of the crew are considered at the top through well-balanced and nutritive meals. This book gives details about research concerning healthy nutrition, food safety, menu planning, and cultural dietary needs, which seeks to increase the quality of food and dining experience onboard ships. For further insight, the abstracts included in this volume are aiming to propose ideas for optimizing food intake in maritime settings, one of them being about promoting healthy eating habits among crew members while keeping practical constraints of shipboard life in mind. The papers cover issues such as the dietary needs of the seafaring workforce and the problems in space-restricted provision, food safety and hygiene, and culinary presentation as a tool to make the crew feel well-fed. Findings in this book represent not only state-of-the-art research but also the applications of these solutions in the maritime industry, now and in the near future. They will be of interest to all involved— maritime specialists, chefs, dietitians, and researchers— in wanting to improve crew welfare and the food interest aboard the ship further. As we join forces through the effort, these insights we share may inspire more collaboration and innovation towards fostering healthy and sustainable food systems in the maritime sector. We express our gratitude to each, and every one of the respondents involved and look into the future with confidence regarding the positive impact our investigation is set to have on the future of the nutritional and culinary arts on maritime matters. Sustainability is now an integral characteristic of responsible and efficient operations in ships' galleys, thus playing a fundamental role in galley operations. Ships sail in areas far away from cities, where receiving fresh provisions takes some time. Plus, there is very little space within the ships, coupled with long-distance voyages, which portend sustainable practices, making sustainable galley operations key to crew





welfare. Proper provisioning would minimise the impact of maritime catering on the environment while maintaining the well-being of the crew.

PARTICULARITIES FOR NUTRITION ONBOARD MARITIME SHIPS

Dr. Pinar OZDEMIR – Piri Reis University

Background

Proper nutrition is very important for all people; however, it is far more important for seafarers because of the challenges the seafarers must bear onboard. They should maintain a balanced diet considering limited food choices, cultural preferences, shift work, and other hardships they face. However, studies conducted so far reveal some contradictory results on the consciousness of seafarers about balanced nutrition. In this study, we will try to reach as many seafarers as possible to find out their level of awareness about nutrition and the effects of the particular conditions of the ship on the nutrition of seafarers.

Objective

This study tries to find out the situations onboard relating to healthy nutrition. It tries to find out whether seafarers are experiencing problems that could be caused by malnutrition or that can be prevented by good nutrition. The study will also analyze how onboard conditions such as limited food supply, storage constraints, cultural diversity, and shift work influence dietary choices. In addition, the study also aims to identify potential areas for improvement in onboard meal planning and food management, providing recommendations for enhancing seafarers' nutrition and overall well-being at sea.

Methodology

The study will use a survey that has been prepared to gather data about the eating habits of seafarers and particular problems they face onboard. It will be electronically distributed to seafarers and students who have served onboard for a certain period. The data will be evaluated statistically.

Results

Seafarers' eating habits such as their preference for fresh vs. processed foods, and frequency of fast food or sugary drinks will be found in addition to their level of awareness regarding nutrition and its impact on health. Common nutritional deficiencies or unhealthy trends that threaten their health will be identified. Seafarers are advised to eat certain amounts of vegetables, fruit, nuts, or meat daily to stay healthy. They should also eat dairy products and drink plenty of water. One of the results of the study will be to reveal if they are conscious of the requirements of a balanced menu.

Conclusion

The study will determine if seafarers' eating habits are suitable for a healthy working life on board. Although some seafarers have a good level of awareness about healthy nutrition, the majority of them may probably need general support on healthy nutrition. The study will help the improvement of onboard nutrition, such as menu adjustments, education, or policy changes.





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EXPLORING MARITIME NUTRITION

Dr. Magdalena STEFANOVA – "Nikola Vaptsarov" Naval Academy

Col.dr. Assoc.Prof.dr. Catalin POPA

Background

Maritime nutrition plays a crucial role in maintaining crew members' health, well-being, and productivity aboard vessels. The unique challenges of life at sea, including limited access to fresh food, confined spaces, and resource constraints, make it difficult to provide balanced, nutritious meals that meet the dietary needs of the crew.

Objective

This study aims to find the bidirectional relationships that exist between food, crew health, productivity, and crew well-being in a maritime setting. It will also try to devise ways through which food can be planned to meet the nutritional requirements of the crew while being practical and sustainable and, at the same time, being restricted within the dynamics of shipboard life.

Methodology

The study shall use a mixed-methods design that considers the application of both qualitative and quantitative research techniques. It shall start with a detailed presentation of the pertinent literature and proven practices in marine nutrition. Surveys will be conducted on various category crew members to derive an opinion on their point of view on food quality, nutritional value, and overall satisfaction regarding food. An analysis of the nutrient content of the food served on board will be carried out to consider whether the food meets the dietary requirements recommended for respective crews. It would further elaborate on the existing menu planning strategies and the alignment of their menus with the nutritional needs of seafarers.

Results

Properly balanced meals high in essential nutrients and energy (proteins, carbohydrates, fats, etc.) are associated with the quality of onboard meals, crew health, and performance. Positively appropriate balanced meals improve energy, cognitive function, and wellness in the physical being involved. Another is the improvement of crew meal satisfaction — not only because of the nutritional value but also because of the variation and cultural content in the meals. From the resource-constrained perspective, this study reveals well-formulated menu planning strategies that are very impactful in enhancing crew health and reducing fatigue and sickness.

Conclusion

Ensuring that balanced and nutritious meals are achieved is the very basics that can support the optimal health and productivity of seafarers. The findings of this study imply that a well-organised menu, which combines the nutritional requirements of the crew with the practical constraints of life on board shipping, can influence crew well-being significantly.

BASIC NUTRITION AND DIETARY REQUIREMENTS ONBOARD MARITIME SHIPS

Dr. Ivo YOTZOV – "Nikola Vaptsarov" Naval Academy

Dr. Kamelya NARLEVA – "Nikola Vaptsarov" Naval Academy (Bulgaria)





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Background

The dietary needs of the seafarers are important because heavy physical work and the shipboard working system require an adequately nourishing diet. Due to the problematic maritime environment, long hours, and backbreaking work, it is essential for proper health maintenance with fatigue avoidance and performance preservation based on the provision of adequate nutrition.

Objective

This study aims to determine the basic nutritional requirements of seafarers based on their specific intensity of physical activity, environmental stressors, and the absence of food availability. The second objective of the research will be to study the ways in which meals in adequate amounts are planned to adequately meet the nutritional requirements, taking into account the cultural, logistical, and storage conditions on ships.

Methodology

This paper is multi-method in character, comprising an in-depth literature review about nutritional provisions in the seafaring world, some statistical data analysed arising from surveys conducted as well as structured interviews on maritime professionals—ship's cooks, nutritionists, and health officers. The other great dimension of these data lies in the eating habits of crew members of varied ship types, such as cargo, among others, plus the length of their sea stay.

Results

The findings suggested that adequately planned diets enriched with necessary macronutrients (proteins, carbohydrates, and fats) and micronutrients (vitamins and minerals) improve the crew's work. Based on this research, there are positive relationships between balanced meal plans and crews' low tendencies in fatigue, sickness, and nutrition deficiencies. It thus indirectly stresses the necessity of adjusting meals to be practical for the physical and psychological requirements of prolonged travel.

Conclusion

Healthy and balanced meals are the most important sources of energy and health for all the workers aboard any ship. Besides, adequate respect for the prescribed rules of nutrition is the prime key to managing the duties of a maritime crew and keeping the whole team in good health. The paper highlights that provisions shall be made for nutrition in maritime operations in an attempt to optimise performance and readiness for the long sea voyages that are about to be undertaken in the name of health.

PRACTICAL SKILLS ONBOARD MARITIME SHIPS: MENU PLANNING

Prof. Dr. Maria LEKAKOU – University of Aegean

Dr. Magdalena STEFANOVA – "Nikola Vaptsarov" Naval Academy

Background

Menu planning for maritime crews must address diverse nutritional needs and preferences while being compatible with storage and food delivery constraints. The central research question is how to design a balanced and practical menu in a maritime environment, where limited resources, restricted space, and varying supplies significantly impact meal preparation. To identify and assess diverse nutritional needs, diet preferences, and storage and serving constraints for maritime crews to design nutritionally balanced and practical menus.





Objective

This study aims to develop effective menu planning procedures that will fine-tune menus to meet the nutritive needs of the crew in the face of challenges emanating from food storage conditions, ingredient availability factors, and logistical constraints of life aboard a ship. The research aims to find an approach based on which the menu will emphasize the nutritional aspect without overlooking the practical realities of sea life.

Methodology

The paper discusses shipboard menus in an existing comparative analysis, crew-member survey, and expert interviews with maritime chefs and nutrition experts. Shipboard kitchen case studies and the adaptation of recipes to very explicit constraints in maritime environments add value to the discussion.

Results

Results show that recipe adaptation to maritime conditions and balancing nutritional ingredients with available resources is a workable approach to meeting the dietary needs of the crew. It discusses basic menu development strategies that are nutritionally balanced and feasible in the confined environment of the galley with limited resources. Proper menu adaptation can also improve crew morale and satisfaction since it can serve different palates and diets.

Conclusion

The menus of the maritime sector have to be flexible and efficient, priding itself in serving meals that are not only nutritive but also appreciating the constraints of storage and delivery of the product. The study highlights the need to develop flexible catering menus for the crew regarding their nutritional content and requirements, directing them to better health, efficiency, and general contentment on voyages at sea.

FOOD SAFETY AND HYGIENE PRACTICES ONBOARD MARITIME SHIPS

Col.dr. Assoc.Prof.dr. Catalin POPA – Romanian Naval Academy

Dr. Magdalena STEFANOVA – "Nikola Vaptsarov" Naval Academy

Background

On board a ship, proper food safety and hygiene practices are important since they maintain the health and well-being of a crew. Realities that the State brings with its maritime environment set down operational prerequisites ensuring the sustenance of humans on board. The central research question is: What hygiene and safety practices should be implemented to prevent foodborne illnesses and ensure the quality of prepared meals onboard? In this regard, all efforts should be geared towards coming up with proper food safety and hygiene practices.

Objective

This study aims to study and optimise hygiene practices and techniques in the safe handling of food products on surface ships. Improving the study aims to appraise our current levels of food safety standards and try to find effective ways to reduce the associated risks of food-related illnesses and contamination.

Methodology

The work is based on observational techniques, interviews conducted among the galley staff, and an analysis of the actual practices of food safety and hygiene maintained aboard ships. The paper shall also discuss the best practices for food handling, storage, and temperature control techniques in galley kitchens.





Results

It shows that regular training of the team and strict control of temperatures and storage conditions significantly reduce the probability of transmitting infections through food. Standard hygienic production practices enhance general meal quality by assuring practices of safe and sound preparation and storage conditions.

Conclusion

Stringent hygiene standards and safe food handling practices should be observed to keep the crew healthy and to keep the food safe. Therefore, practices must be phased in daily galley operations to make sure that quality and safe food is always maintained throughout the voyage.

PRACTICAL SKILLS ONBOARD MARITIME SHIPS: KNIFE SKILLS AND FOOD PREPARATION TECHNIQUES

Cdr. Marius CUCU – Romanian Naval Academy

Dr. Magdalena STEFANOVA – "Nikola Vaptsarov" Naval Academy

Background

Proper knife skills and effective food preparation techniques will be the benchmark competencies expected from a professional chef working on ships. The confined space in shipboard galleys, limited resources, and the demand for high work output require efficient and safe handling of knives and food preparation. The bulk of the primary research will be on how such skills can be better developed to ensure that the humane maritime environment is meant for maximal efficiency and safety, whose answer lies partially again in the extreme complexities associated with the constraints of space related to time further complicating the preparation of meals.

Objective

This study aims to critically appraise the techniques of effective food preparation, emphasising the correct handling and safety of knives and having insight into how to cook healthy meals while minimising the amount of time spent preparing the ingredients. Thus, the research will try to pinpoint the factors that ensure the safety and efficiency of kitchen work, with a specific focus on work in maritime conditions where it is not humanly easy to work because of the challenges laid by working conditions.

Methodology

The study, therefore, mixes a qualitative view of knife skills and food preparation method demonstrations, interviews with seasoned professional chefs from the maritime loft, and practical training sessions. Data is collected through observation of kitchen practices, feedback from chefs on knife safety and food preparation practices, and the effectiveness of various techniques and how they affect prep time versus the maintenance of quality meals.

Results

Results proved that comprehensive training in knife skills plus food safety would improve the efficiency with which food is prepared onboard. Proper technique had the effect of accelerating not just the preparation process but also mitigating the risks associated with accidents, such as cuts and injuries that are pretty rampant in high-pressure kitchen environments. Proficiency in these skills, according to the study, would improve the variedness of meals





but, more importantly, raise the minimum requirements for hygiene to ensure further safety for the food served to the crew.

Conclusion

The mastery of knife skills and tying them up with efficiency in food preparations really serve to assure the safety, effectiveness, and quality of meals onboard. This can be extremely useful in reducing accidents while at the same time enhancing the operational efficiency of shipboard workers in the kitchen. The results indicate that enterprise-based training programs concentrating on the improvement of knife handling techniques and food preparation practices can prove productive towards guaranteeing safety and increasing productivity in maritime culinary operations.

PRACTICAL SKILLS ONBOARD MARITIME SHIPS: CULINARY PRESENTATION AND PLATING TECHNIQUES

Cdr. Marius CUCU – Romanian Naval Academy

Dr. Ivo YOTSOV – "Nikola Vaptsarov" Naval Academy

Background

Food presentation on board ships is one of the major factors used to enhance the dining experience for the crew. For the service on ships, the main concern is the nutritional value and quantity of the meal, and visual appeal in the plating and presentation of the meal also plays a major role in the crew's satisfaction. What plating and presentation techniques will improve the aesthetic perception of food and uplift the overall pleasure of dining onboard?

Objective

This study aims to review the needs, objectives, and subjective effects of different plating methods and styles of food arrangement on the crew's perception and dining experience. In other words, this research is about how different plating methods, styles of food arrangement, and visual elements can make the crew enjoy their meals on board and, with high regard, feel satisfied with the onboard dining environment.

Methodology

The study combines empirical observations, crew surveys, and a visual analysis of the aesthetic values of meals served on board. It details plating techniques: the arrangement of portions, contrast in colours, garnishes, and the several styles of plating used. Crew members must rate their dining experience concerning the visual appeal of meals, their taste perception, and the overall atmosphere.

Results

Such results repeatedly confirm what has been realised about crews' perceptions of their meals and how they are taken: proper food presentation dramatically enhances them. Good plating, in turn, creates visual stimuli that, in the end, trigger responses meant for the quality and flavour of the meal served.

Conclusion

Results proved that the visual presentation, being part of the service, worked to improve the perceived quality of food and thus helped foster a positive dining environment.





ONBOARD BASIC NUTRITION AND DIETARY REQUIREMENTS

Dr. Kamelya NARLEVA – "Nikola Vaptsarov" Naval Academy

Dr. Magdalena STEFANOVA – "Nikola Vaptsarov" Naval Academy

Background

Healthy meals from various cultural backgrounds should find their way into onboard menu offerings as one of the primary avenues through which food diversity can be achieved, and the cultural dietary needs of the crew met. A lot of maritime galleys have very little available provision space, so they struggle to be able to provide varied and healthy meals that also stick to cultural preferences amidst an extremely diverse crew. A major question then arises: To what extent can rich, healthy international culinary traditions be brought into shipboard menus to meet both the nutritional requirements and also the logistical constraints that a maritime kitchen has to contend with?

Objective

This study aims to study different healthy culinary traditions across the globe and to see how feasible it is to adopt them in the menu of a ship so that the crew will be given due respect for maintaining their diversity in meals while taking a balanced diet for themselves. The research will help ensure diversity in meals, keeping the crew's energy and nutrient needs in mind to ensure quality crew commitment to the well-being and satisfaction of every crew member in the dining experience on board.

Methodology

This, therefore, can be taken as a culinary and cultural inquiry plus a crew test, with it being explicitly stated to determine the acceptability of new foods and their cultural preferences. This brought about the survey and the interview data amongst the crew in the process of trying to explicitly get their side about what their food preferences are and how open they are towards dishes that hail from another latitude. The works further discussed the maneuverability of bringing these dishes into any maritime galley in light of the fact that it falls within reach of ingredients, the space for their storage, and cooking methods.

Results

These results show how meals from all cultures significantly improved social integration and satisfaction with meals among the crew. A higher level of enjoyment was expressed by members reflecting the cultural diversity of meals and when they were introduced to dishes native to their fellow members; thus, cultural inclusivity in the menu set a better social cohesion and a more salient positive atmosphere in the dining area which elicited the notion of shared experiences and mutual respect among the crew through food.

Conclusion

Healthy foods from various cultures at sea menus could thus prove a better path to enhancing diversity as well as satisfaction among crew members and, in turn, bring about a positive and inclusive dining experience. The results expressed that cultural diversity in the foods offered bears a multiplier effect on the nutritional results of a meal by eliciting social interaction, which is harmoniously desirable to maintain a harmonious and effective crew environment.





EFFECTIVE SUPERVISION OF FOOD SUPPLIES AND BUDGETING IN SHIPBOARD CULINARY OPERATIONS

Dr. Magdalena STEFANOVA – "Nikola Vaptsarov" Naval Academy

Dr. Pinar OZDEMIR – Piri Reis University

Background

Proper inventory and budgetary controls play a critical role in the proper utilization of resources with minimal wastage and facilitating efficiency in cost management. To ensure smooth shipboard food operations, management must effectively monitor food supplies and control the budget in the galley.

Objective

This study aims to review how food supplies and budget controls are undertaken in the maritime section of economic activities. The primary objectives will be to identify best practices in inventory control, to try out different budget management strategies towards ascertaining the effective shipboard food service, what conditions are found efficient to improve food supply and budgetary control, how such conditions work in practice, and to relate such results to other organisations in other industries.

Methodology

It is an analytical study of the contemporary practice applied in food supply management and budgeting. Data were collected in the field through an unstructured, open interview with key informants such as head chefs, kitchen managers, and logistics personnel based on ships. Observations were also recorded of the processes of inventory control and budget control so as to have a comprehensive understanding of how food supplies and budget management are being controlled. In addition, it also discusses and evaluates software tools and manual systems for food supply usage and cost forecasting and tracking used by different companies.

Results

The findings also suggest that systematic control over inventories of food and strict budgeting practices would bear attendant effects, leading to decreased total costs as well as improvement in monitoring resources. Thus, effective control over supplies, timely procurement, and careful expenditure eventually decrease waste and financial inefficiency. From the findings of the study, effective coordination among kitchen staff, the purchasing team, and the financial officer indeed played a very critical role in ensuring resource optimization and always keeping within the budget.

Conclusion

Food management and financial control would guarantee the optimization and economic sustainability of operations. That study proves inherent cost savings, better resource allocation, and improved operational efficiency through systematic inventory control and sound budget management practices integrated into the day-to-day activities of the company. It would be necessary, therefore, for maritime services to have proper supervision and management of food inventories on board to achieve optimal onboard food operations and economic sustainability of maritime operations. These units of practice must flow through in maritime culinary management for it to deliver shipboard food services with financial and operational success.

