



PUBLIC HEALTH MODULE (PH)

MODULE DESCRIPTION/OVERVIEW

Public health module aims to address the effect of environment and climate changes on human health and immune system modulation. Different environmental aspects, climate changes together with other natural and human-made health stressors influence human health and disease. Climate change threatens human health in many ways like impacts of extreme weather, wildfire, decreased air quality, and diseases transmitted by food, water, and carriers such as mosquitoes and ticks.

Public health is always affected by disruptions of physical, biological, and ecological systems, including disturbances originating locally or elsewhere on the globe. Where, some of the existing health threats will intensify and new health threats will emerge. Also, important human characteristics should be taken into considerations like immunity, age, genetics, economic resources, occupation, geographical location, nutrition and lifestyle" not everyone is equally at risk". Therefore learners should be aware of the effects of these disruptions like increased respiratory and cardiovascular disease, injuries and premature deaths related to extreme weather events. As well as, changes in the prevalence and geographical distribution of food- and water-borne illnesses, and other infectious diseases, and threats to mental health.

Additionally this module will also address teaching of the basics of scientific research methodology and bio- statistical analysis. Understanding the concept of different study designs plays a major role in determining the scientific value of a research study and it will aid the researchers in practicing evidence-based medicine.

Public health module will align with the following Sustainable Development Goals:

- **Goal 2.** End hunger, achieve food security and improved nutrition and promote sustainable agriculture (**objectives: 2.1 , 2.2, 2.3, 2.4**)
- **Goal 3.** Ensure healthy lives and promote well-being for all at all ages (**objectives: 3.3 , 3.4 , 3.9, 3.a ,3.b ,3.d**)
- **Goal 4.** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (**objectives: 4.4 , 4.7 , 4.c**)
- **Goal 6.** Ensure availability and sustainable management of water and sanitation for all (**objectives: 6.1 , 6.2 , 6.3 , 6.4, 6.5, 6.6, 6.b**)
- **Goal 7.** Ensure access to affordable, reliable, sustainable and modern energy for all (**objectives: 7.1 , 7.3)**
- **Goal 11.** Make cities and human settlements inclusive, safe, resilient and sustainable (**objectives: 11.1 ,11.2 , 11.3 ,11.4 , 11.5, 11.6 , 11.7, 11.a , 11.b**)
- **Goal 13.** Take urgent action to combat climate change and its impacts (**objectives : 13.1 , 13.2 , 13.3 ,13.a ,13.b**)



- **Goal 14.** Conserve and sustainably use the oceans, seas and marine resources for sustainable development (**objectives : 14.1 , 14.2 ,14.3 , 14.4 ,14.5 , 14.7**)

- **Goal 15.** Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss (**objectives : 15.2 , 15.a , 15.b**)

MODULE LEARNING OBJECTIVES

- 1-To realize the impact of the environment (indoor, outdoor and occupational), personal factors (genetic ,socio-demographic and geographical factors) , behavior and lifestyle on the human health and human immunology.
- 2- To explore the influence of climatic change on human health and immune system.
- 3-To demonstrate the epidemiology of human diseases both communicable diseases like water and food born diseases and the non-communicabl diseases like chronic diseases like asthma , cancer and others.
- 4- To formulate and construct plan for prevention and control of human health problems.
- 5-To identify, compare and implement the different research methodologies and different bio-statistical analysis.

MODULE INTENDED LEARNING OUTCOMES

Upon successful completion of this module, students will be able to:

A- KNOWLEDGE & UNDERSTANDING:(REMEMBERING AND UNDERSTANDING)

- A1- Outline the factors affecting the human immune system (**analysis**)
- A2- Identify the relation between environmental factors and the human immune disorders. (**understand**)
- A3 - Describe the influence of environmental changes on the immune system. (**understand**)
- A4- Explain the effect of climate change on the human immune system. (**understand**)
- A5- Describe the effect of personal lifestyle and behavior on human immunology. (**understand**)
- A6- Classify the scientific research methodologies and compare between them. (**analysis**)
- A7- Apply research ethics for human and animal research. (**application**)
- A8-Identify criteria of good scientific research. (**understand**)
- A9- Distinguish the different biostatistical analysis in research. (**analysis**)
- A10- Identify causes, risk factors and susceptible persons to different human diseases. (**understand**)



A11-Discuss the influence of climate change, and the environment on communicable diseases like water and food borne diseases and human immunology. **(understand)**

A12-Discuss various case studies related to climate changes like water and food born disorders. **(understand)**

B- INTELLECTUAL SKILLS: (APPLICATION, ANALYSIS, SYNTHESIS, EVALUATION)

B1- Formulate a good research question , title and objectives.

B2- Design human and animal research proposals.

B3- Justify the conclusions of research

B4- Criticize the different scientific research designs

B5- Construct plans for prevention and control of diseases and maintaining the safe environment

C- PROFESSIONAL SKILLS: (PRACTICAL SKILLS)

C1- Interpret the different biostatistical analysis in research

C2- Develop information handling and computer skills.

C3- Perform online search properly

C4- Practice the complex data analysis

D- GENERAL SKILLS: (ATTITUDES AND COMMUNICATION SKILLS)

D1- Anticipate teamwork ability.

D2- Respect the ethical consideration in research conduction.

D3- Communicate effectively with others in the research team and research participants.

D4- Adopt good time management and proper allocation of available resources.

MODULE RESOURCES

Required Module Textbooks and Materials

1- Wallace, Robert. Maxey-Rosenau-Last Public Health and Preventive Medicine: Fifteenth Edition. US: McGraw-Hill Medical, 2007.

2- Katz, D. L., Jekel, J. F., Elmore, J. G., Wild, D. M. G., & Lucan, S. C. Jekel's epidemiology, biostatistics, preventive medicine, and public health. US: McGraw-Hill Medical, 2014.

3- Krause, Peter J., Paula B. Kavathas, and Nancy H. Ruddle. Immunoepidemiology,



US: McGraw-Hill Medical, 2019.

4-Robert Diconzo, clinical pharmacist's guide to biostatistics and literature evaluation, American College of clinical pharmacy, 2013.

Optional Module Textbooks and Materials

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ASSIGNMENTS AND GRADING SCHEME

GRADING SYSTEM

1-**Formative:** quiz, interaction during demonstrations given periodically during course.

2- Summative:

- Written theoretical mid module and end module exams: multidimensional exams with MCQ, SAQ, problem solving, case studies and True or False to assess student knowledge & understanding as well as intellectual abilities.
- Assessment of Proposal writing and Survey conduction (presentation and discussion for students' evaluation): assess students' intellectual abilities as well as professional and practical skills gained from the module.

GRADING POLICY

Grades can be based on the following:

Class attendance/participation	5%
Assignments	10%
Proposal writing, research conduction and presentations	25%
Exams	60%
Total Points	100%

MODULE POLICIES

LATE ASSIGNMENTS

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CLASSROOM PROTOCOL

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DISSABILITY