

Module Details	
Module Title	Epidemiology and Biostatistics
Module Code	NUR7048-B
Academic Year	2020/1
Credits	20
School	School of Nursing and Healthcare Leadership
Subject Area	Nursing
FHEQ Level	FHEQ Level 7
Pre-requisites	N/A
Co-requisites	N/A

Contact Hours	
Type	Hours
Laboratories	10
Learning Objects Interaction	2.5
Online Lecture (Asynchronous)	2
Online Lecture (Synchronous)	25.5
Tutorials	20
Directed Study	140

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Semester 2

Module Aims
To enable the student to develop the theoretical knowledge base and practical skills required to interpret research evidence from quantitative study designs, with a focus on epidemiological research, and to undertake statistical analyses for relatively simple study designs.

Outline Syllabus

Epidemiology - definition & example landmark studies (e.g. Doll & Hill on smoking, Framingham heart study). Introduction to the philosophy of science - nature of 'evidence', uncertainty and impossibility of 'proof'. Association & Causation. Hierarchy of research evidence & characteristics of study designs (Meta-analyses, RCT's, cohort studies, case-control studies, surveys (cross-sectional studies), ecological studies, diagnostic accuracy studies. Bias, confounding, stratification and effect modification. Descriptive and graphical methods - measures of central tendency, dispersion, proportions; histograms, box-and-whisker plots, scatterplots (including linear and non-linear associations); transforming data. Inferential statistics - hypothesis testing (and limitations), interpretation of p-values (Fisher and Neymann-Pearson), effect size estimation - point estimates and confidence intervals. Analysis methods for quantitative and categorical data (independent and dependent (paired/matched) samples). Statistical significance v. clinical importance. Principles of sample size estimation.

Learning Outcomes

Outcome Number	Description
01	Understand the fundamental principles of epidemiological study design and statistical data analysis.
02	Critically appraise published epidemiological research.
03	Interpret statistical analyses reported in published research.
04	Undertake simple data management tasks and statistical data analysis on primary research data.
05	Communicate effectively within your peer group in order to contribute to collective decisions.

Learning, Teaching and Assessment Strategy

Adopting a blended learning approach, research informed key lectures will deliver core content; providing students with the opportunity to acquire knowledge on the principles of epidemiology and statistics (LO: 1, 2, 3, 4). This approach will also be used to facilitate teacher/learner/peer dialogue and inter-professional discussion to further develop and challenge conceptual understanding through reflection and analysis of epidemiological research and statistical data (LO: 1, 2, 3, 4, 5).

Lectures will be delivered as live (synchronous session and some as asynchronous session ? meaning you can access the lecture at your own convenience) and student tutorials will be offered face to face on campus (LO 1, 2, 3, 4). Online blended learning will be used for group discussion to enable students apply learning to their own role and engage in critical debate, self-reflection and critical evaluation of the key issues associated with designing epidemiological studies and interrogating public health data sets (LO: 1, 2, 3, 4, 5).

Independent study will provide students with the opportunity to undertake directed reading, participate in enquiry based learning, address individual learning needs, contextualise learning to the students own area of knowledge/practice/experience (LO: 1, 2, 3, 4) and to develop further their own portfolio of learning which will enhance transferable skills and knowledge related to the enhancement of critical thinking and analysis (LO: 1, 2, 3, 4).

VLE and library services will be used to support online blended learning and to provide access to online resources, lecture notes and external links to websites of interest. Learning objects will entail the use of quizzes within the module for students to engage with specific packages of learning using problem-based learning (LO: 1, 2, 3, 4).

Formative assessment and feedback will be provided at individual and group tutorials, meetings and through electronic communication to facilitate reflection and student self-assessment. All learning outcomes will be assessed by the assessment.

Mode of Assessment				
Type	Method	Description	Length	Weighting
Summative	Examination - Closed Book	Closed book exam on applied epidemiology and biostatistics	2 hour	100%

Reading List
To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html

Please note:

This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.

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