Semester: II
Core Course
6. Course Code & Title: MPC 52 01 & Research Methodology in Health Sciences
Credits: 4

Course objectives:
The objective of this course is to equip students in developing an understanding of different methodological approaches in undertaking a research in health sciences with focus on public health.

Course outcomes:
On successful completion of this course, students will be able to:

1. Learn different paradigms and epistemological stands of conducting empirical research.
2. Identify an appropriate topic for research and develop research questions, objectives and hypotheses.
3. Learn how to undertake a systematic literature review in general and for the MPH dissertation in particular.
4. Apply the concepts of research methods in developing data collection tools and techniques.
5. Develop a research proposal employing quantitative and qualitative approaches.

Skills developed:
On successful completion of course, the students shall be skilled in quantitative and qualitative research methods and will be able to use NVivo for qualitative analysis.

Teaching methods: This course will be delivered using a variety of methods and modalities such as interactive classroom and online lectures, self-study, case studies, written assignment, class room exercises using computers/software, quiz, field visit, group work, field survey, class room presentations in groups etc.

Units and Topics	Teaching Methods	Mandatory Readings
Unit-I: Quantitative Research Methods		

	L	FW	FV	CS	GW	SS	SP	P	
Objectives of the course and the need for undertaking an independent research project for the MPH programme	**X**					**X**			
Literature review including various style of referencing, method of reviewing literature and how this has to be reproduced in the dissertation or a research paper with appropriate citation	**X**					**X**			Suresh, N., & Thankappan, K.R, (2019). Gender differences and barriers women face in relation to accessing type 2 diabetes care - A Systematic Review. *Indian Journal of Public Health*, *63*, 65–72. https://doi.org/10.4103/ijph.IJPH_26_18.
Choosing a research topic in general and specifically for the MPH dissertation Framing research questions and objectives of the study	**X**					**X**			Hall, N., & Kothari, R. (1999). Research Fundamentals: IV. Choosing a Research Design *Acad Emerg Med*, *6*(1), 67–74. https://doi.org/10.1111/j.1553-2712.1999.tb00097.x
Identification of variables, defining each variable and operationalizing them	**X**					**X**		**X**	Mini, G., Sarma, P., & Thankappan, K.,R. (2019). Cluster Randomised Controlled Trial of Behavioural Intervention Program: A Study Protocol for Control of Hypertension Among Teachers in Schools in Kerala (CHATS-K), India. *BMC Public Health*, *19*(1), 1718. https://doi.org/10.1186/s12889-019-8082-5
Various study designs including cross sectional, case control, cohort and randomized controlled trials	**X**					**X**			Riddell, M. A., Joshi, R., & Oldenburg, B et al (2016). Cluster Randomised Feasibility Trial to Improve the Control of Hypertension In Rural India (CHIRI): A Study Protocol . *BMJ Open*, *6*(10), e012404. https://doi.org/10.1136/bmjopen-2016-012404.
Different methods of data collection, Questionnaire method, interview schedules, and some physical measurements like weight, height, and waist circumference.	**X**					**X**		**X**	Patra, L., Mini, G. K., Mathews, E., & Thankappan, K.,R. (2015). Doctors' Self-Reported Physical Activity, Their Counselling Practices and Their Correlates in Urban Trivandrum, South India: Should a Full-Service Doctor Be a Physically Active Doctor?

									. *British Journal of Sports Medicine*, *49*(6), 413–416. https://doi.org/10.1136/bjsports-2012-091995
Organizational aspects of field survey, logistics of field survey organization, training of staff transportation etc.	**X**					**X**			Thankappan, K. R., Sivasankaran, S., Mini, G. K., Daivadanam, M., Sarma, P. S., & Khader, S. A. (2013). Impact of a Community Based Intervention Program on Awareness, Treatment and Control of Hypertension in a Rural Panchayat, Kerala, India. *Indian Heart Journal*, *65*(5), 504–509. https://doi.org/10.1016/j.ihj.2013.08.023
Estimating sample size for different study designs	**X**					**X**		**X**	Vishnu, N., Mini, G. K., & Thankappan, K. R. (2017). Complementary and Alternative Medicine Use by Diabetes Patients in Kerala, India. *Global Health Epidemiology and Genomics*, *15*(2), e6. https://doi.org/10.1017/gheg.2017.6
Sample selection procedure and sample frame	**X**					**X**		**X**	As above
Development of a questionnaire and interview schedule and the difference between the two, translation and back translation of the schedule/questionnaire	**X**					**X**		**X**	Sailesh, M., Pradeepkumar, A. S., Thresia, C. U., & Thankappan, K. R et al. (2006). Tobacco Use Among Medical Professionals in Kerala, India: The Need for Enhanced Tobacco Cessation and Control Efforts. *Addictive Behaviours*, *31*(12), 2313–2318.
Pilot testing of instrument/tool for the study	**X**					**X**			
Scales of measurement, reliability and validity and the difference between the two. Organization of data sheets, manual checking of data sheets, grouping them, storage and transportation,	**X**					**X**			Mathews, E., Salvo, D., Sarma, P., Thankappan, K., & Pratt, M. (2016). Adapting and Validating the Global Physical Activity Questionnaire (GPAQ) for Trivandrum, India, 2013. *Preventing Chronic Diseases*, *13*, E53.
Data entry using excel and SPSS, data cleaning	**X**					**X**		**X**	
Univariate, bivariate, and multivariate analysis	**X**					**X**		**X**	
Writing a research report with executive summary and a research article of scientific journal with an abstract.	**X**					**X**			Aziz, Z., Mathews, E., Absetz, P., & Sathish, T et al. (2018). A Group-Based Lifestyle Intervention for Diabetes Prevention in Low- And Middle-Income Country: Implementation Evaluation of the Kerala

									Diabetes Prevention Program. *Implementation Science*, *13*(1), 97.
Unit-II: Qualitative Research Methods									
Type of research approaches – Induction and deduction approaches, elements of research paradigm – Ontology, epistemology, axiology and ethics and research paradigm – Positivist, post-positivist and pragmatism.	**X**					**X**			Al-Saadi, H. (2014). Demystifying Ontology and Epistemology in research methods. *Research Gate*, *1*(1), 1-10. Noble, H., & Smith, J. (2014). Qualitative data analysis: a practical example. *Evidence-Based Nursing*, *17*(1), 2-3. Devers, K., & Frankel, R. (2000). Study design in qualitative research: Sampling and data collection strategies. Education for Health, 13(2), 263-271. Giddings, L. (2003). Rigour and trustworthiness in qualitative research. Qualitative Research Methods course, Auckland University of Technology, Auckland. Östlund, U., Kidd, L., Wengström, Y., & Rowa-Dewar, N. (2011). Combining qualitative and quantitative research within mixed method research designs: a methodological review. International Journal of Nursing Studies, 48(3), 369-383. Kitzinger, J. (1995). Qualitative research: introducing focus groups. BMJ, 311(7000), 299-302. Caracelli, V. J., & Greene, J. C. (1993). Data analysis strategies for mixed-method evaluation designs. Educational evaluation and policy analysis, 15(2), 195-207.
Qualitative design: Case-study, ethnography, participant's observation, and phenomenology Qualitative data collection techniques: In-depth interviews and focus group discussions. Qualitative data collection tools: In-depth interview and focus discussion guides Sampling techniques and sample size in Qualitative research.	**X**	**X**				**X**			
Mixed-method design: Sequential and concurrent designs and data triangulation.						**X**			
Type of qualitative data analysis approaches: Framework approach (thematic analysis), quasi-statistical (content analysis), Interpretative approach (phenomenological analysis and grounded theory) and Socio-linguistic approach (discourse analysis). Rigour and trustworthiness of qualitative research – Four techniques 1.) Credibility, transferability, dependability and confirmability.	**X** **X**			**X**		**X** **X**		**X**	
Demonstration of textual data analysis using Nvivo-7.5 including coding, generative patterns and developing sub-themes and sub-themes.	**X**					**X**		**X**	

									Clarke, V., Braun, V., & Hayfield, N. (2015). Thematic analysis. Qualitative psychology: A practical guide to research methods, 222-248. Saldaña, J. (2015). The coding manual for qualitative researchers. Sage Publications.

L- Lecture; FW- Field work; FV - Field Visit; CS - Case study; GW- Group work; SS- Self-study; SP- Seminar presentation; P-Practical

Evaluation:
As per CBCS guidelines, this course will be evaluated for 100 marks with a Continuous Evaluation (CA) component of 40 marks and End-Semester Evaluation (ESA) component of 60 marks.

Additional readings:

1. Bryman, A. (2016). *Social research methods*. Oxford university press.
2. Maxwell, J. A. (2008). Designing a qualitative study. The SAGE handbook of applied social research methods, 2, 214-253.
3. Rehman, A. A., & Alharthi, K. (2016). An introduction to research paradigms. International Journal of Educational Investigations, 3(8), 51-59.
4. Sandelowski, M. (1995). Qualitative analysis: What it is and how to begin. *Research in Nursing & Health*, *18*(4), 371-375.
5. Liamputtong, P. (2009). Qualitative data analysis: conceptual and practical considerations. Health Promotion Journal of Australia, 20(2), 133-139.
6. Higginbottom, G. M. A. (2004). Sampling issues in qualitative research. Nurse Researcher (through 2013), 12(1), 7.
7. Maxwell, J. A. (2010). Using numbers in qualitative research. Qualitative inquiry, 16(6), 475-482.
8. Minichiello, V., Aroni, R., & Hays, T. N. (2008). In-depth interviewing: Principles, techniques, analysis. Pearson Education Australia.