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MPH - Bos-2

**Central University of Kerala
Department of Public Health and Community Medicine**

Board of Studies (BoS) - 16/05/2017 & 17/05/2017

Meeting Minutes

The Department of Public Health and Community Medicine, Central University of Kerala conducted the Board of Studies (BoS) meeting on 16th and 17th May 2017. It was the first BoS meeting since the establishment of the department in 2016. The venue was Conference Hall, Central University of Kerala, Main Campus, Periya. The meeting started at 9.45 am and ended at 2.00 pm on both days. The panel members included invited subject experts, Dean, School of Medicine and Public Health, Assistant Registrar (Academic), Central University of Kerala, Head of the Department and other faculty members of the Department of Public Health and Community Medicine. The attendees of the meeting were as follows: -

BoS Attendees:

Invited subject experts

- **Prof. (Dr.) K R Thankappan**, Professor Emeritus, Achutha Menon Centre for Health Science Studies (AMCHSS), Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), Thiruvananthapuram.
- **Prof.(Dr.) Vijayakumar. K**, Consultant, State Health Systems Resource Centre(SHSRC), Thiruvananthapuram.
- **Prof.(Dr.) B. Unnikrishnan**, Associate Dean and Professor, Department of Community Medicine, Kasturba Medical College(KMC), Mangalore.

Representatives from the Central University of Kerala (CUK)

- **Dr. Rajendra Pilankatta**, Dean, School of Medicine and Public Health and Associate Professor, Department of Biochemistry, Central University of Kerala.

HOD In-charge and the Faculty Members

Dr. Madhu Unnikrishnan, Assistant Professor and HOD In-charge

- **Dr. Elezebeth Mathews**, Assistant Professor
- **Dr. Sibasis Hense**, Assistant Professor
- **Ms. Jayalakshmi Rajeev**, Assistant Professor
- **Mr. Prakash Babu Kodali**, Assistant Professor

*Absentees: Prof(Dr.) V. RamanKutty, Shri. Sureshan Kandathil

The first day of BoS meeting (16/05/2017) started with the welcome address by Dr Madhu Unnikrishnan, Head of the Department (i/c). Dr Madhu gave a brief introduction of the Central University of Kerala, the Department of Public Health and Community Medicine as well as the objectives of the BoS. Thereafter, he welcomed all experts and faculty to the meeting, and briefed the agenda for two days of BoS meeting.

The agenda for discussion in the BoS meeting was proposed by the Department with approval from the Dean, School of Medicine and Public Health and Assistant Registrar (Academic), CUK. The main items discussed in the BoS are given below.

- 1) Discussion on 'Name of the Department, Title of the Programme and Objectives of the MPH Programme.
- 2) Decision to be taken on the minimum "Eligibility criteria with respect to educational qualifications for MPH admission"
- 3) Discussion on the "MPH programme structure for all the semesters"
- 4) Discussion on the "Evaluation pattern for all courses in the MPH programme"
- 5) Discussion on recruiting an Associate Professor with specialization in Bio-statistics

The MPH programme structure was discussed semester wise. Semesters I and II were discussed on the first day and Semesters III and IV on the second day of the BoS meeting. However, revisit of the first day's discussion was required in some cases.

The details of agenda-wise discussion and the final recommendation by the BoS are given below.

Agenda: 1 Name of the Department, Title of the Programme, Objectives of the Programme:

Dr Madhu Unnikrishnan presented the items before the BoS members.

i. Name of the Department

The first item presented before the BoS was re-naming the department from 'Department of Public Health and Community Medicine' to 'Department of Public Health'. Dr Madhu opened the issue for discussion mentioning the following crucial points: -

- a) Currently the department offers only one programme i.e. Master of Public Health (MPH)
- b) Community Medicine is a medical speciality which requires Medical Council of India

- guidelines to be followed.
- c) The CUK follows University Grants Commission and Ministry of Human Resource Development guidelines.
 - d) There may be a Community Medicine Department upon the University starts a medical college in the future.

Recommendation: All the expert members in the panel agreed to propose the new name for the department i.e. *Department of Public Health*.

ii. Title of the programme

The name of the programme offered by the department is 'Master of Public Health'. Since all members consented with the title, *no change was proposed in the BoS meeting*.

iii. Objectives of the MPH programme

The current MPH programme did not have any specific objective. Therefore, the following objectives were proposed for discussion

- Train young, experienced and cross-cultural graduates across multiple disciplines to undertake challenging responsibilities in the contemporary and dynamic healthcare ecosystems.
- Develop core, desirable and exemplary competencies among the graduates for practice, training and research in public health.
- Build capacities of graduates for leadership and innovative roles in the health and allied sectors.

These three objectives were accepted with consent from all panel members.

Agenda 2: Minimum eligibility criteria for admission into the MPH programme

Mr Prakash Kodali introduced the existing eligibility criteria and the proposed criteria to the BoS members with the rationale and called for a discussion. Two categories of eligibility criteria were proposed (one with all Bachelor's degree in Health Sciences and Masters in Social Sciences discipline being eligible to apply for MPH, and second with all the Bachelors in Health Sciences and all the Bachelors in Social Sciences with 2year experience in the health sector. Of these options, the later was rejected and former was accepted with changes.

Discussion: With regard to second criteria, Dr Thankappan opined that usually students go for masters after a bachelor's degree. Dr Vijayakumar viewed that there should be stringent criteria of selection at the beginning itself in order to improve the standards of the programme and increase the likelihood of employability among the students. Therefore, there are chances that two years of experience after the bachelor's degree might dilute the quality of the MPH programme since it may be difficult to secure exceptional candidates, to which Dr Rajendra Pilankatta agreed.

Dr Madhu inquired (to Dr Rajendra Pilankatta) if it is possible to include interview in the screening procedures for the intake of MPH students. However, Dr Pilankatta said that it may not be possible to conduct interview for one department considering logistic reasons. Dr Thankappan mentioned that Tata Institute of Social Sciences is also admitting students with a bachelor's degree however they have a stringent screening process such as interview in addition to the written examination. He also pointed out that when the eligibility criteria are broad, it will invite more diverse pool of applicants. Dr Unnikrishnan inquired whether the Central Universities have a common curriculum for MPH? Dr Madhu answered him that there is no such common curriculum as of now. After the discussion, it was decided to remove the criteria "bachelor's degree with experience in the health sector". In addition to the educational qualifications proposed by the Department it was also decided that Masters in Life Sciences discipline, Statistics, Allied Health Sciences and bachelor's in professional courses such as Engineering, Law and Agriculture can also be included. The discussion on eligibility criteria extended to the second day to clarify certain doubts raised after the first day of the discussion. A summary of the discussion is given below:

- The first one was with respect to engineering streams. Are all Bachelors in engineering eligible was the question. For this, experts recommended to keep it open for Bachelors in all the streams of engineering to be eligible to apply for MPH admission.
- Dialogue about M.Sc. in Clinical Research being eligible was also brought in to discussion. The panel believed that M.Sc. in Clinical Research could be made eligible.
- However, given that several universities offer the course even in distance means, it was decided that UGC approved programme may be considered eligible.
- **Additionally, it was decided to add the condition, "All courses as approved by UGC" to the title above the list of eligibility criteria for educational qualifications.**

- Disciplines such as Political Science and Geography were added in to the Social Sciences group
- With respect to MBAs, panel members agreed that all MBAs can be considered eligible to apply for MPH.
- Dr.Vijayakumar pointed out that Masters in Humanities disciplines could be included to make the course more inclusive and hence the course “Master’s in Philosophy” was also added in to the eligibility criteria.

Recommendation: Following a detailed discussion on the eligibility criteria with respect to minimum educational qualification for MPH admission, BoS members recommended the following categories of educational qualifications: -

- o Bachelor’s Degree in Health Sciences (MBBS, BDS, AYUSH, Nursing, Veterinary Science)
- o Bachelor’s Degree in Allied Health Sciences (Optometry, Audiology, Physiotherapy, Pharmacy and Medical Lab Technology).
- o Bachelor’s Degree in Engineering disciplines, Agriculture and Law.
- o Master’s degree in Life Science disciplines (Botany, Zoology, Biochemistry, Microbiology, Biotechnology, Nutrition, Anatomy, Clinical Research and Physiology)
- o Master’s Degree in Social Science disciplines (Economics, Sociology, Social Work, Public Policy, Public Administration, Anthropology, Demography, Psychology, Philosophy, Political Science and Geography)
- o Master’s Degree in Management - MBA (all specializations), Health Management/Administration, Hospital Management/Administration.
- o Master’s Degree in Statistics

Agenda 3: Discussion on MPH Programme Structure for all semesters

There was an elaborate discussion on this item and many times it was required to go ‘back and forth’ in the whole semester plan to come to consensus.

i. Discussion on MPH Programme Structure for Semester-I and Semester-II

Dr Elezebeth Mathews presented the current and proposed courses for semester I and II of the MPH programme. She also explained the rationale for making the changes in the current syllabus. One of the rationales was to streamline the courses to impart the knowledge in a sequential manner. Additionally, the faculty also wanted to incorporate some new areas of relevance in contemporary public health and equalize the number of credits in each semester to reduce the burden for the students.

Discussion: Dr Vijayakumar and Dr Unnikrishanan expressed that there is an overlap between Epidemiology and Biostatistics when coming to measuring events and it has to be taken into account when teaching these courses. Dr Vijayakumar pointed that these courses should be planned in such a way that the students may not lag behind graduates from other states and also advised to include more field activities while teaching epidemiology. All expert members emphasized on teaching systematic review and meta-analysis since these are used widely. Therefore, it was decided to segregate the Epidemiology course into basics and advanced.

Dr Thankappan viewed that Semester-I had more quantitative courses to which Dr Elezabeth answered that the Qualitative Research Methodology course is also taught in Semester-I. She also added that the students would get a good grasp over research methodology if it is delivered in Semester-I.

Dr Vijayakumar indicated that the course 'Public Health Legislation' may be included as a separate course since it is a weakly addressed, but an important area in public health. It was also discussed that the resources of the Department of Legal Studies, CUK could be utilized to deliver the course. There was also some discussion on emerging courses such as Molecular Epidemiology, Human Resources for Health and it was agreed to include them as electives.

Dr Vijayakumar expressed his view that social causes of illness like poverty etc. may be captured along with the marginalized sections of the society. In the discussion, it was decided to include a new course 'Health Inequities' as suggested by Dr. Elezabeth Mathews and later agreed by the BoS members since it is an important and contemporary to the discipline of public health.

ii. Discussion on MPH Programme Structure for Semester-I and Semester-II

Dr.Sibasis presented the current course structure of Semesters III and IV, and the proposed changes in it with the rationales.

Discussion: In the current course structure, all the electives are offered in Semester-I along with two core courses. However, the experts suggested that the electives may be spread across Semesters I, II and III. In addition, BoS members consensually proposed following changes also to the complete course structure.

- The course 'Public Health Legislations' was added to core courses in Semester-III (As per Day 1 Discussion).
- The courses 'Health Technology and Informatics', 'Advanced Biostatistics' and 'Health Inequities' will be transferred from Semester II to Semester III.

- With respect to Semester IV, all experts agreed to the proposal of adding 'Internship' in place of 'Integration and Wrapping up' in the present curriculum along with Dissertation.
- With respect to credits distribution, given that Semester IV is for 6 months; and a duration of 4 and 2 months are exclusively devoted for Dissertation and Internship respectively, experts suggested to allocate 12 credits to dissertation and 6 credits to internship, which was agreed upon by all the members of BoS.
- In addition, it was also decided to develop 'evaluation guidelines' for internship in order to ensure more objectivity for giving credits.
- The experts insisted to have the relevant tie-ups and MOU's with institutions for the students to secure internship at various health organizations.
- It was agreed upon that there should be an empaneled list of organizations where the students could go for internships.
- Since it has been decided to add 'Advanced Epidemiology' as an elective; the experts proposed to change the name of the course "Epidemiology" in Semester I to "Basic Epidemiology". All the members of BoS consented to this suggestion.
- The suggested changes were done by the faculty members during the break and were presented to experts which were agreed upon.

The other conclusive points in the discussion were as follows: -

- All members agreed to the equal distribution of credits across semesters and all the courses were rearranged so that each semester constitutes a total of 18 credits.
- The new relevant areas identified during the discussion were incorporated into the syllabus appropriately.

The final course distribution in each semester is shown below: -

Semester- I			
	Course Title	Credit	Total
Core Courses	Introduction to Public Health Practice, Training and Research	3	15
	Basic Epidemiology	4	
	Basic Biostatistics	4	
	Research Methodology (Quantitative, Qualitative and Research Ethics)	4	

Elective Courses (Any 1 out of 3)	Pedagogy	3	3
	Disaster Management in Public Health	3	
	Demography	3	
		Total	18

Semester- II			
	Course Title	Credit	Total
Core Courses	Health Management	2	12
	Environment and Occupational Health	3	
	Infectious Disease Epidemiology	2	
	Chronic Disease Epidemiology	2	
	Health Policy and Systems Research (HPSR)	3	
Electives Courses (Any 2 out of 5)	Minor Research Project	3	6
	Project Management	3	
	Human Resources for Health	3	
	Sexual and Reproductive Health	3	
	Geriatric Health	3	
		Total	18

Semester- III			
	Course Title	Credit	Total
Core Courses	Data Analysis in Health Sciences	3	15
	<i>Analytics</i> Advanced Biostatistics	2	
	Health Economics	3	
	Health Technology and Informatics	2	
	Health Inequities	3	
	Public Health Legislations	2	

Elective Courses (Any 1 out of 3)	Advanced Epidemiology	3	3
	Molecular Epidemiology	3	
	Nutritional Epidemiology	3	
		Total	18

Semester- IV			
	Course Title	Credit	Total
Core Courses	Dissertation	12	18
	Internship	6	
	Total		18

Agenda 4. Evaluation of MPH Programme

Ms. Jayalakshmi presented the evaluation method (Choice Based Credit System- CBCS) followed in the university. No change was proposed by the faculty members, and it was made open for the discussion.

Discussion: The experts felt that since the CBCS guidelines constitute the UGC norm, no change could be advocated to it. However, discussion happened about the external examiners for question papers setting and evaluation.

- Dr.Unnikrishnan voiced that in order to ensure the standards of the University, it is better to go with external examiners. Supporting the same, the Dean clarified on the Vice Chancellor's standpoint of having external examiners for the initial few years.
- Even the Head of the Department (Dr Madhu) opined that since the university follows the method involving external examiners, it is better to go with the existing approach.
- However, there was a discussion about the question paper setting. *It was decided that the question paper setting could be done at internal level and the evaluation should be done by the external. This was decided owing to the previous experiences where the questions which were given in an externally set question paper being different or totally out of syllabus from what was taught.*
- Additionally, it was decided that answer key should be developed for transparent external evaluation.

Agenda 5. Need for a Biostatistician

The need for an additional faculty with the specialization in Biostatistics was presented by Dr Madhu to the members of BoS. It was informed that since the department has at least 2 batches of MPH students at any given point of time, and with the prospect of having PhD scholars and Public Health Projects in future, it was deemed important that the department needs a dedicated biostatistician.

- The experts said that it is difficult to run a public health department without a biostatistician and said that the recruitment should focus on recruiting a bio-statistician.
- The same was voiced by all the members of the BoS. Overall, *the BoS strongly recommended the recruitment of an Associate Professor with specialization in Biostatistics as soon as possible.*
- *However, given that recruitment takes time and taking into consideration of the current need, the experts insisted to recruit faculty on adhoc basis as immediate measure. This was agreed by all the members of BoS.*

Post BoS:

After the discussion on the need for an Associate Professor in Biostatistics, the overall agenda discussed in the BoS were summarized. Thereafter, Dr Sibasis offered the vote of thanks, which concluded the BoS meeting.

Post BoS, the members of the BoS met the Vice Chancellor, CUK when *Dr.Vijayakumar stressed on placing the MPH students in National Health Programmes (during field placements) so as to get a handson experience on National Health Programme functioning.* It was also decided to appoint a Community Medicine Expert(MD,Community Medicine) at the position of Associate Professor to strengthen the human resource of the Department and also to strengthen the primary and secondary prevention activities to the public.


5/6/2017
Dr.Madhu Unnikrishnan

Semester: I

Core Course

4. Course Code & Title: MPC 51 04 & 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. <i>Indian Journal of Public Health</i> , 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 <i>Acad Emerg Med</i> , 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. <i>BMC Public Health</i> , 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 . <i>BMJ Open</i> , 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? . <i>British Journal of Sports Medicine</i> , 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. <i>Indian Heart Journal</i> , 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. <i>Global Health Epidemiology and Genomics</i> , 15(2), e6. https://doi.org/10.1017/gh.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. <i>Addictive Behaviours</i> , 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. <i>Preventing Chronic Diseases</i> , 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. <i>Implementation Science</i> , 13(1), 97.
Unit-II: Qualitative Research Methods									
Type of research approaches – Induction and deduction approaches, elements of research paradigm – Ontology,	X					X			

epistemology, axiology and ethics and research paradigm – Positivist, post-positivist and pragmatism.								Al-Saadi, H. (2014). Demystifying Ontology and Epistemology in research methods. <i>Research Gate, 1(1)</i> , 1-10.
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		Noble, H., & Smith, J. (2014). Qualitative data analysis: a practical example. <i>Evidence-Based Nursing, 17(1)</i> , 2-3. Devers, K., & Frankel, R. (2000). Study design in qualitative research: Sampling and data collection strategies. <i>Education for Health, 13(2)</i> , 263-271. Giddings, L. (2003). Rigour and trustworthiness in qualitative research. <i>Qualitative Research Methods course, Auckland University of Technology, Auckland.</i>
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		Östlund, U., Kidd, L., Wengström, Y., & Rowa-Dewar, N. (2011). Combining qualitative and quantitative research within mixed method research designs: a methodological review. <i>International Journal of Nursing Studies, 48(3)</i> , 369-383. Kitzinger, J. (1995). Qualitative research: introducing focus groups. <i>BMJ, 311(7000)</i> , 299-302. Caracelli, V. J., & Greene, J. C. (1993). Data analysis strategies for mixed-method evaluation designs.
	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	Educational evaluation and policy analysis, 15(2), 195-207. Clarke, V., Braun, V., & Hayfield, N. (2015). Thematic analysis. <i>Qualitative psychology: A practical guide to research methods</i> , 222-248. Saldaña, J. (2015). <i>The coding manual for qualitative researchers</i> . Sage Publications.
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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.