Today's Cutting Edge In Research Education Increases Tomorrow's Employability

Beatrice Low Wei Jin[1], Hardip Kaur Dhillon[2]

[1]MBBS Year 2 undergraduate ,[2]Senior Lecturer, Jeffrey Cheah School of Medicine and Health Sciences, Monash University Malaysia, Bandar Sunway, 46150 Selangor, Malaysia

Abstract

Evidence-based medicine (EBM) is now considered a fundamental basis for clinical practices globally. There is an enormous necessity of going beyond merely reading research articles to actually applying research studies to solve patient management problems on a day to day basis. In order to have a cutting edge in a very competitive, international trade of education, Monash University Malaysia encourages Year 1 and 2 undergraduates to engage in various research projects, available within the School of Medicine during their semester breaks. This paper demonstrates a student's use of experiential learning, reflective journaling and blended Learning while engaging in a research project. The basic research skills acquired early in the undergraduate MBBS curriculum is expected to achieve advance level research skills as the medical student completes the fifth year of the course. Hence, today's cutting edge of developing research skills early increases the chances of tomorrow's employability and employment in evidence based health care settings.

Keywords: Experiential learning, research journaling, research skills, reflective process, blended learning, Malaysia.

I. Introduction

In recent years many more teacher educators are considering innovative methods in which to introduce and enhance research skills development through use of reflectivity [1]. In the current digital age, there is a push to acquire knowledge in the most efficient manner possible. Learning is no longer confined to classrooms nor is it merely didactic, requiring the constant presence of a lecturer. This paper shares the process of a second-year medical student acquiring basic research knowledge and skills during her internship. She accompanied a researcher who conducted a cross-sectional community-based survey and later in-depth interviews in a project titled '*A Study of Urinary Incontinence in women living in Selangor Malaysia'*. Educators are aware that in the world of research, there are many research skills which could be acquired through experiential learning [2] rather than traditional learning. In order for the medical student to develop research knowledge and skills throughout her internship, the researcher encouraged her to maintain a reflective journal [2].

> *"There is an intimate and necessary relation between the processes of actual experience and education."*
>   John Dewey, 1938

The Kolb Experiential Learning Theory (ELT) emphasizes the importance of experience in learning. The theory is called "Experiential learning" [2] to emphasize the central role that experience plays in the learning process. It provides a holistic model of the learning process and is a multi-linear model of adult development, both of which are consistent with what we know about how we naturally learn, grow, and develop.
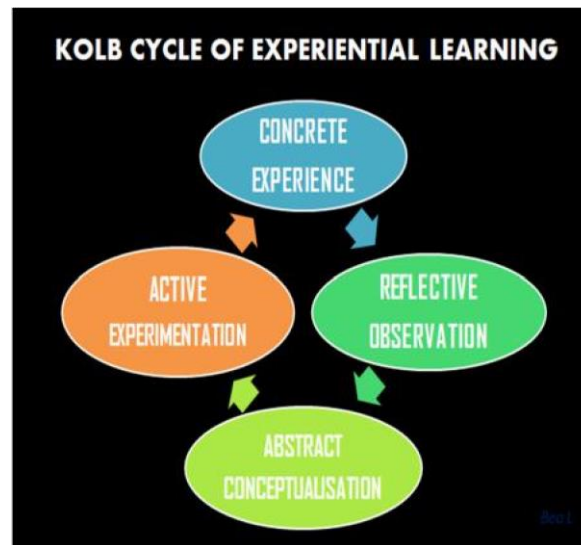
Figure1. The Kolb Cycle of Experiential Learning [2]

Kolb cycle involved a four-step continuous cycle, composing of (i) concrete experience, (ii) reflective observation, (iii) abstract conceptualization, (iv) active experimentation. The cycle began at any step. However it was recognized that usually learning began with the student participating in an activity for him/herself. The student then spends time to reflect upon what had been done and the impact it carried. This was then followed by a stage whereby the student generalized the action and its impact and did some research and critical thinking over what had been reflected. Sometimes thinking how it could have been done in a differently. The last stage is to put the abstract conceptualizations to practice by trying the action again.

During the first and second year internship, the researcher included the constructivism theory [3] in the student's learning experience. Learning was considered an active process in which the student constructed new ideas or concepts upon her current and previous research knowledge and skills. Based upon her cognitive structure, the reflective journaling, the intern provided meaning and organization to her learning experiences in Year 1. In the following year, the intern selected and transformed new information generated from her experience in Year 1 and at times even went beyond the information provided by the researcher.

 Since technologies were considered cognitive tools to help learners elaborate on what they are thinking and to engage in meaningful learning [4], the intern was also encouraged to use online learning. Online learning resources, web-based instructions with technical support including web search were some of the tools made available to the students at Monash University Malaysia.

By Year 2 the MBBS student had already received formal lectures on data entry, statistical tests, and analysis and in her own time she increased her comprehension of data entry and SPSS analysis through the use of online tutorials. This concept of blended learning [5] is considered a formal education when thoughtful integration of two components, internet technology and face to face teaching (lecture) is provided to enhance the student's learning experiences [6].

Internship

The medical student's internship at Monash University Malaysia began in December 2012 to
January 2013. Her placement was at Pandan Jaya, Hulu Langat, Selangor, Malaysia. She was exposed to quantitative research. A pilot study was conducted to validate the research instrument, Malay language questionnaire for urinary incontinence diagnosis (QUID) [7]. It was administered to a cohort 150 women of whom one hundred and eleven healthy Malaysian women living in the communities of Selangor responded.

They were required to meet the inclusion criteria prior to voluntary recruitment to the study. The aim of the study was to document the prevalence, and the risk factors associated with urinary incontinence (UI). The subsequent internship was at the end of Year 2 MBBS program. This time the intern was exposed to qualitative research. She observed and participated in sessions when the researcher conducted in-depth interviews using audio recording and note taking to assess the quality of life of women with urinary incontinence using the QUID score criteria.

Brief outline of the research project

1. Problem statement ☐ Urinary incontinence is a common problem that may be under reported by Malaysian women.
    ☐ A standardized, validated English language Questionnaire for Urinary Incontinence Diagnosis (QUID) was translated to Malay language QUID to be used in this study.
2. Aim
    ☐ To test the validity and reliability of the Malay Language Questionnaire for Urinary Incontinence Diagnosis (QUID).
3. Research Methodology
    • Survey
    • Purposive sampling method
4. Study design
    ☐ Cross-sectional, observational pilot study
5. Sample size
    ☐ n =100
6. Source of Funding
    ☐ Ministry of Science, Technology and Innovation (MOSTI) e-Science Fund Project no: 06-02-10-SF0103
7. Materials
    ☐ Malay language Questionnaire   UrinaryIncontinence   Diagnosis (QUID)
8. Ethics approval☐ Ministry of Health Malaysia Ethics Committee Approval dated 1st June 2011-15 was obtained (Project no. NMRR-11-149-8830).
    ☐ Monash University Human Research Ethics Committee Certificate of Approval was obtained from 16th August 2011–16th August 2016 (Project no. CF10/1725-2010000963).
9. Recruitment
    • Inclusion criteria comprised of healthy, Malaysian women aged 18 years and above, women with children aged 2 years and above, single women, nulliparous women, and women with well controlled diabetes, hypertension, hyperlipidemia, and coronary heart disease.
    • Exclusion criteria consisted of non –Malaysian women, under the age of consent (<18 years) women with uncontrolled diabetes, hypertension, cardio-vascular disease, undergone gynecological or abdominal surgery in the last six months, recent abortion or childbirth, women with children under the age of 2 years, women undergoing chemotherapy or in remission for cancer treatment.
.   10. Data collection

- Quantitative research- self- administered questionnaires or face to face interview

11. Statistical analysis
    - SPSS version 20 was used to analyse the data.
    - Statistical tests - Factor analysis and reliability

12. Publication
    - Dhillon, H.K., *et al.* (2014) Exploratory and Confirmatory Factor Analyses for Testing Validity and Reliability of the Malay Language Questionnaire for Urinary Incontinence Diagnosis (QUID). *Open Journal of Preventive Medicine*, 4, 844-851. http://dx.doi.org/10.4236/ojpm.2014.411095 [7]

Some of the research knowledge and skills, acquired by the MBBS student during her internship were as follows; purposive sampling method, ethical consideration, cultural awareness, data collection, data entry and basic statistical tests.

Reflective journal

1. Research skill: Purposive sampling method used to recruit respondents

   Concrete experience

In order to perform purposive sampling method to recruit appropriate respondents in various locations in Selangor, the researcher had obtained various maps from Department of Statistics, Malaysia (Jabatan Perangkaan Malaysia). In preparation for the first field trip the researcher showed me a map of Pandan Jaya. Within the map, a number of houses had been highlighted on certain roads and streets. In order to become familiar with the locality, we drove around the roads and streets identifying the house addresses. By performing this first visit to the area, we already had a rough idea of the location and planned appropriate strategies for the home visits. We planned to recruit approximately 30 participants per location using the purposive sampling method. Flyers in English and Malay language had been placed in the letterboxes of identified houses on marked roads according to the map provided to us. Another ingenious way to recruit participants was through the networking sampling. Once gaining access to a subject's home, sometimes the respondent would enquire from the researcher if their female friends who met the inclusion criteria and were living within the area of the survey could participate in the study. More often than not, respondents had at least one or two friends to recommend. This was known as the snowball technique.

Reflective Observation

The pilot study was a cross sectional survey and recruitment was initially made using a purposive (purposeful) sampling method. Bilingual flyers were used to advertise the recruitment drive at Pandan Jaya before making any initial contact with the women. Initial recruitment was successful but due to no responses from some of the addresses the dropout rate was significant. To overcome that issue, the researchers used the snowball technique to recruit sufficient number of women (n=30) from each location of a district.

Abstract Conceptualization

A pilot study is a small-scale study or trial run done prior to a major study. This study was a cross-section survey which was a non-experimental research that focused on obtaining information which influenced lifestyle activities, beliefs, preferences and attitudes [8]. This data was obtained via direct questioning from a sample of respondents [8-9]. Initially, recruitment was done using the purposive sampling. Polit & Beck [8] defined it as a nonprobability sampling method, whereby the researcher selected participants on the basis of personal judgment about which ones will be most representative of the population. This was also known as judgmental sampling. But as the weeks passed by, the target number of achieving 30 respondents was still not met as the

dropout rate from non-responsive household was significant. To overcome this problem, the researcher started using the snowball technique of recruiting respondents instead. This selection of participants was by means of nomination or referral from earlier participants. If the referred women lived in the same location and met the inclusion criteria they were then recruited into the study.

Active Experimentation

The purposive sampling method continued to be used for recruiting subjects. But for those houses where the researchers were unable to gain access they were aborted. Instead the researcher was able to recruit other women within the same location through the "snowball technique". This method proved to be successful and within a very short period of time the researcher was able to achieve her target respondents within one district.

2. Research skill: Ethical consideration during home visits.

Concrete experience

Prior to doing home visits, I was also involved in the administrative preparation of recruitment envelopes. Developing a process to enable easier packaging of recruitment packs was important to ensure I would not miss anything out when placing them into packets. Recruitment packs contained a consent form, explanatory statement with the researcher's

contact number enclosed, and research questionnaire booklet. This preparation was so vital because it enabled us to carry out the recruitment with ease when we reach the houses of respondents. Those who met the inclusion criteria had given implied consent by agreeing to participate. I observed the researcher going through the explanatory statement and consent form together with the respondent to ensure valid, legal voluntary consent was obtained prior to data collection. The respondents were asked if they wished to self-administer the questionnaire or to engage in face-to-face interviews to complete the questionnaire.

Reflective Observation

Based on Monash University Research Ethics Committee (MUREC) guidelines, I learnt the importance of conducting research professionally and ethically in order to protect both the researcher and the respondent. To obtain valid, legal voluntary consent, the researcher was ethically bounded to provide explanation, both verbally and written in order to obtain voluntary informed consent in a language the potential participant was most comfortable to speak in. It is only through this experience that I was able to appreciate better the knowledge that I had acquired during the lectures on bioethics in the first year of MBBS program. Deeper learning and comprehension was occurring in me by way of further understanding the knowledge obtained from bioethics lectures through practice of recruitment using purposive and sampling method.

Abstract Conceptualization

From the beginning of the project, I learnt the importance of research ethics. The researcher was both legally and ethically bound to ensure the research was carried out according to the Nuremberg code and Declaration of Helsinki which states that all researchers should adhere to the ethical code of conduct as it protected the wellbeing of the respondents [10]. It was considered ethical to have all relevant documents such as explanatory statement, consent form and questionnaire to be made available in major languages used in Malaysia, namely, English, Malay, Tamil and Mandarin. The assumption was that the respondents would provide a valid, informed consent and comprehend the questionnaire better if it is available in a language of her choice. In return the quality of data collected would be better.

Active Experimentation

During the field visits, the researcher has to ensure that all relevant documents such as explanatory statement, consent form and flyers were made available in order to obtain valid, legal, informed consent from the volunteer who met the inclusion criteria. I therefore personally took the responsibility to ensure all the relevant documents

to obtain valid informed consent was available in the recruitment envelopes before we set out to recruit subjects for the study.

3. Research skill: Cultural awareness during home visits.

Concrete experience

Initial approach to potential respondents in their homes was paramount. I observed my researcher greeting and introducing herself to potential participants, making sure not to come across as being too forceful as participation in the study was entirely voluntary. A total of two to three visits were necessary at each household in order to recruit women who met the inclusion criteria and collect their data. We always dressed simply in long or three quarter sleeves, collared shirts or Monash tee-shirts and long or three quarter length pants. Preferably in dark colours, in order not to draw attention to ourselves. As we scouted the location looking for identified house addresses for recruitment we always checked for any clues at the front door, to the type of culture and religion the residents of the identified household would be practiced. Various religious and cultural symbols such as the Arabic calligraphy with Malay handicrafts in the garden depicted a Muslim, Malay household or a cross at the top of the front entrance of a house may be a Chinese or Indian Christian. Red Chinese lanterns hanging from the porch with an altar in the garden may be a Chinese person's house. Some Indian houses had strings of mango leaves at their main entrance or symbols of the Hindu gods and goddess on the front doors. Noticing all these clues were crucial when making our first home visit as it ensure the researcher made proper greetings with due respect to the potential participants. Meeting various families opened my eyes towards the astounding cultural diversity in Malaysia. Not only did we meet people of many races but interracial marriage too contributes towards the melting pot. An instance that we saw was an African-Chinese child who looked like her African father but spoke like a true Malaysian.

Reflective Observation

Preparation for recruitment was crucial as it will set the tone for the visit. I learnt that preparation was not only confined to materials and apparatus but also the mental preparation necessary to be able to approach potential respondents with confidence. The preparedness will come across during the home visit and affect the flow of the visit (which may inadvertently affect the response of the respondents). A few strategies enabled us to gain easy access to homes of potential respondents. Firstly, we were aware of the cultural differences of the three major ethnic groups. The rough demographics of the area to be surveyed were kept in mind. For instance, if the location was predominately Muslims, the logic would be to cover up more i.e. long pants and a long-sleeved shirt. Furthermore, I realized that it helped in home visits when the researchers were female, especially when our target respondents were women. There is also no real substitute for politeness and being nice.

I learnt that we did not have to rely solely on the randomly generated addresses we obtained from the Ministry, but rely on help from the existing participants themselves, who passed on news of the research by word of mouth to friends living in the same area. For me, a useful aspect was learning to be flexible in approaches to different participants. Some respondents were more open to advice and lifestyle 'critique' whereas others refuse to disclose personal matters. Some were very relaxed while others tended to be very uptight and stressed out. The research must go on! Researchers needed to be ready for anything – just put on a mask of calmness and carry on. In addition, I learnt it was important to be empathetic towards the respondents, as I observed my mentor communicating with them in that manner.

Abstract Conceptualization

The home visits conducted during research is different from one done by the health professionals such as midwives, nurses and doctors. In research, the initial contact with respondent strongly affects the woman's decision whether to participate or not in the study. A friendly, motivating interviewer can increase response and

item response rates, maintain motivation with longer questionnaires, probe for response and clarify ambiguity [11]. Some may also use memory jogging techniques for aiding recall of events and behavior as well as control the order of the questionnaire. Both cultural awareness and effective communication skills are of utmost importance in retaining recruits [12]. In this instance, culturally congruent questionnaire were essential to the success of this research study as the information collected was both personal and sensitive [12]. The QUID was translated into three major languages; Malay, Mandarin and Tamil languages using the MAPI guidelines [13].

Active Experimentation

The intern had assisted the researcher in undertaking the task of translating the English language version of the explanatory statement, consent form and flyer to Malay language. Being bilingual, she was able to translate it from English to Malay with ease, using Google Translate as a guide. It was later that the student fully appreciate the importance of the translation of the explanatory statement later on when we started recruiting more respondents in other locations. Most women were most comfortable answering questions in their native language; hence the availability of different languages to read from; showed that the researcher was both culturally competent and sensitive to the needs [14] of the respondents.

Future pilot studies within Malaysian cohorts were expected to be conducted to validate the Mandarin and Tamil language questionnaires.

4. Research skill: Data collection

Concrete Experience

I participated in the qualitative research, during the survey, I observed the researcher conducting a face-to-face verbal interview mode using the traditional pen and paper interview (PAPI) questionnaire. This mode was used for all the respondents who had limited education. Those respondents who had received O level education (SPM), the researcher applied the self-administrative mode.

Reflective Observation

I observed how the researcher conducted a face to face interview with respondents who were unable to comprehend the questions due to limited education. A significant element that I noticed was the diverse education levels among these respondents ranging from no formal education to tertiary education. Educated women were able to answer the entire questionnaire on their own within a short period of time whereas for the uneducated ones we had to painstakingly go through each question with them.

Abstract Conceptualization

During the survey, the researcher had used two modes to collect the data using the paper questionnaire, i.e. verbal face to face interview using traditional pen and paper to answer the questionnaire [11]. The interview mode used was verbal-interviewers, face to face; using traditional pen and paper interview (PAPI) and questionnaires, as well as self-administrative mode. Traditional paper and pen self-administrative 'interview' (PAPI) was used whereby the this time the paper questionnaire was handed to women in person and asked to complete it by hand and return the answered questionnaire to the researcher personally. Evidence based medicine is not just about clinical skills but also to be able to demonstrate sensitivity with appropriate communication skills to fully understand the patient's context. Including the ability to elicit and understand patient values and preferences [14]. This concept can also be applied in research studies.

Active Experimentation

After observation, I participated in a verbal face to face interview using the PAPI mode with a respondent under supervision. To ensure accurate responses I would go through each question slowly and where necessary, if the

respondent appeared confused, I would use simpler words to reach the respondent's level of comprehension. At times language did become a barrier. For instant, the participant who couldn't speak English, knew very basic Malay and was unable to read Mandarin but spoke a Chinese dialect. On the other hand, I was of Chinese origin and did not speak Mandarin fluently. Being Chinese myself, she had anticipated that I would assist her to answer the questionnaire in Mandarin. I became aware of my own limitation. During my subsequent home visits I was able to speak in Mandarin when necessary. This was because I started to learn common Mandarin terms off the internet. In this way I was prepared for similar encounters in future.

5. Research skill: Data entry and analysis

<u>Concrete experience</u>
Of the 200 women who were approached, a total of 111 respondents responded to the questionnaires. They were from various locations of Selangor. To me, a significant aspect of research was to observe the researcher use SPSS Statistics version 20. Even though she entered the data of her pilot study herself but she did allow me to assist her in developing a code book for each variable. She demonstrated how to perform basic analysis of the data using descriptive statistics. The results were illustrated using tables and figures. The analytic reasoning to interpret the findings was a challenging one for me. Later I created my own dataset.

<u>Reflective Observation</u>
Previously, I thought that I knew it all when it came to data entry using Microsoft Excel. I was blissfully ignorant of the mountains of data to be entered and analyzed in a study such as this one. I was introduced to software called Statistical Package Social Science (SPSS) version 20. My researcher showed me how to create a codebook by providing a number to the various responses for each question. Later I learnt to enter the data carefully as this was considered a very important aspect of data entry. I realized that poor data entry could affect the analysis of the study.

<u>Abstract Conceptualization</u>
I applied online learning [4] by exploring various online tutorials, hosted by the popular social networking site. You-tube guided me by showing a step-by-step approach. I filled in the gaps with a SPSS guidebook and observation of my supervisor. I had significantly developed my knowledge of data entry and analysis. I realized that while this process was tedious, it was also fruitful especially when one starts to get results from clicking on the button to analyze data. <u>Active Experimentation</u>

Under supervision, I created my own dataset and learnt to perform data entry and analysis using SPSS version 20. I practiced on various statistical analyses for factor analysis and reliability of the instrument. To do so, I would press the following buttons: Factor analysis ☐ Dimension reduction☐Factor☐ (i) Descriptive☐initial solution and KMO and Bartlett's test of sphericity, (ii) Extraction☐Unrotated factor solution and scree plot, (iii) Rotation ☐Varimax. For Reliability test the following analysis was performed: Scale ☐ reliability analysis☐statistics ☐Item, scale and model alpha. Changes were made based on feedback from my supervisor and also reference material I found online. I experienced and learned throughout the process

6. Research skill: Reflective journaling

<u>Concrete experience</u>
Initially, my reflective journal was a big jumble of material that was a product of my reflection which was maintained throughout the duration of the study. Subsequently when doing literature review and came across papers about urinary incontinence, I started questioning my own academic writing skills. So what is reflective writing?

Reflective observation

Through reflection, I began to critically think about my experiential learning of various research skills. To be able to write the information generated by my brain in an organized and structured manner definitely required skill. Even while writing this manuscript, I learnt to write and rewrite drafts of manuscript, and to build upon and refine my ideas. I learnt to compartmentalize my written material, organize it, and give it clear headings. I also changed sentence structures and improved the grammar in order to give my ideas more substance.

Abstract conceptualization

Informal writing is for diary entries, personal writing, letters or emails to friends. On the other hand academic writing is formal writing and its characteristics include a formal tone, clear focus on the issue or topic and precise word choice. Reflective writing is again different from either of the two; it is evidence of reflective thinking in an academic context; it usually involves looking back at an incident, idea or object, analyzing the event through different perspective and in-depth and trying to explain often with reference to a model or theory the subject that is being reflected upon [2-4]. Reflective writing is more personal than other kinds of academic writing. Unlike academic writing where the use of the third person rather than the first person perspective is applied, in reflective journaling the pronoun "I" is frequently used.

Active experimentation

Following repeated discussions and feedbacks from my supervisor, my thinking process slow began to comprehend. I began to recognize the difference between informal writing, academic writing and reflective journaling. Through writing a reflective journal, as I probed into my experience further, my understanding of the various research skills I had been exposed to also increase. My deeper learning of research skills occurred mainly during the abstract conceptualization of reflection. It was self-directed learning process and gaining new research knowledge and skill gave me a sense of empowerment.

III. Conclusion

Medical students need to be highly encouraged to develop research skills in the course of their medical education. Acquiring research skills and knowledge through experiential learning, construct and blended learning is expected to broaden the students' perspective on research and the contributions they can make as a future medical practitioner. Since evidencebased medicine (EBM) is now considered a fundamental basis for clinical practices the results from this research project, when published would provide evidence based knowledge on urinary incontinence (UI) in Malaysian women living in Selangor to the medical and health professionals. By undertaking this internship, the medical student was able to develop some basic research skills within the first two year of her MBBS course. In future, in terms of employability and increased chances of employment, this research internship would provide this medical student a cutting edge over other medical students who possess no research skills.

References

1.   Lovat, T., Davies, M., and Plotnikoff, R. Integrating research skills development in teacher education. Australian Journal of teacher Education. 1995, 20; 1: 31-35.
2.   Mobbs, R. David Kolb [Internet]. UK: University of Leicester; 2003 [updated 2003 December; cited 2014 December 18]. Available from:
        http://www.le.ac.uk/users/rjm1/etutor/resources/learningtheories/kolb.html
3.   Burner, J. (1966). Towards a theory of instructions. Cambridge, MA: Harvard:
        www.instructionaldesign.org/theories/constructivist.html

4.   Hsiu-Mei Huang (2002). Toward constructivism for adult learners in online learning environment. British Journal of Educational Technology. 2002; 3: 1, 27-37.

5.   Garrison, R. and Kanuka, H. Blended learning: Uncovering its transformative potential in higher education. Internet and Higher Education, 2004, 7: 95-105.

6.   Sharma, P. Blended learning. ELT J[Internet]. 2010 Jul [cited 2014 Dec 18]; 64(4):456-458. Available from:http://eltj.oxfordjournals.org.ezproxy.lib.monash.edu.au/content/64/4/456 doi: 10.1093/elt/ccq043

7.   Dhillon, H.K., et al. Exploratory and Confirmatory Factor Analyses for Testing Validity and Reliability of the Malay Language Questionnaire for Urinary Incontinence Diagnosis (QUID). Open Journal of Preventive Medicine, 2014, 4, 844-851. http://dx.doi.org/10.4236/ojpm.2014.411095

8.   Polit, D.F.,and Beck, C.T. Nursing research: appraising evidence for nursing practice. 7th ed. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2010. Chapter 12, Sampling plans; p.305-333.

9.   Gledhill, S., Abbey, J., Schweltzer, R. Sampling methods: methodological issues involved in the recruitment of older people into a study of sexuality. Australian Journal of Advanced Nursing. 2008, 26; 1: 84 - 94.

10.   Grove, S., Burn, N., and Grey, J. The practice of Nursing Research, Appraisal, Synthesis and Generation of Evidence, Chapter 4, Examining ethics in nursing research; 7th edition. United States of America: Elsevier Saunders 2012, p. 102-143.

11.   Bowling, A. Mode of questionnaire administration can have serious effects on data quality. Journal of Public Health, 2005, 27; 3: 281-291. Doi:10.1093/pubmed/fdi031.

12.   Shiu- Thronton,S. Addressing cultural competency in research: integrating a community based participatory research approach. Alcohol. Clin. Res.[Internet]. 2003 Aug [cited 2014 Dec 28]; 27(8):1361- 1364.Available from: http://onlinelibrary.wiley.com.ezproxy.lib.monash.edu.au/doi/10.1097/01.ALC.00000 80200.07061.66/abstract;jsessionid=7502FD9C50894C921A32DEAE026D956A.f03t 04 doi: 10.1097/01.ALC.0000080200.07061.66

13.   MAPI Institute: Linguistic Validation Manual for Health Outcome Assessments, 2nd edn. Lyon: MAPI Research Trust; 2012.

14.   Guyatt, G., Rennie, D., Meade, M.O. Cook, D.J. Users' guide to the medical literature. Essentials of evidence -based clinical practice. 2nd Edition. Mc Graw Hill Medical. New York. 2008. Chapter 2 The philosophy of evidence -based medicine. p. 11.

15.   Epp. S. The value of reflective journaling in undergraduate nursing education: A literature review. International Journal of Nursing Studies. 2008, 45: 1379-1388.