

Examining qualitative and quantitative studies with casp



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Critical Appraisal Skills Programme/CASP (Public Health Resource Unit, 2007) a reader should equip with in order to make sense of scientific research. The CASP is to help a reader develops critical skills so as to be sensitive of scientific research and, therefore, to think reasonably about any research encountered (Public Health Resource Unit, 2007). Both quantitative and qualitative researches can be appraised by using the CASP. Each of the CASP guidelines has ten questions in which validity, relevance and results of appraised research have been covered. This assignment has been divided into two parts. The first part quantitative paper written by Ho et al, (2006) will be appraised. The second part qualitative paper written by Liu and Liehr (2009) will then be appraised. All findings will be summarized finally.

1. Did the study ask a clearly focused question?

PICOT is used for answering the question 1 and it is a framework that healthcare professionals can use to formulate effective clinical questions in a step-by-step manner (Melnyk & Fineout-Overholt, 2010). The population of the study was all the subjects should have one tattoo at least. 120 Chinese subjects with 144 tattoos were recruited for the study. The intervention of the study was half of the subjects were applied Contractubex gel while others were applied nothing. The purpose to do so was to check the efficacy of the gel. The comparison of the study was study and control groups are used for comparison as a result of finding out the efficacy of Contractubex gel. The outcome of the study was the gel should be effective in preventing scarring after the subjects receiving laser removal of tattoos. The research has shown that the number of subjects in Contractubex group with scarring were significantly lower than in control group. The time of the study was the

treated areas were assessed 3 months after the last treatments. In short, the research has asked a clearly focused question- Use of onion extract, heparin, allantoin gel in prevention of scarring in Chinese patients having laser removal of tattoos: a prospective randomized controlled trial. So the answer is “ Yes”.

2. Was this a randomized controlled trial (RCT) and was it appropriately so?

A type of scientific experiment most commonly used in validating the effectiveness of health issue, say, pharmaceuticals (e. g. gel), can be regarded as RCT (Gallin & Ognibene, 2007). It involves the random allocation of different interventions to the subjects. Furthermore, as long as the numbers of subjects are adequate, randomization is an effective method to produce a random and unpredictable sequence of allocations. Regarding to the Ho et al (2006) research, they must adopt RCT. Two evidences can be shown to support my stance. First, it was testing the efficacy of Contractubex gel intervention (health issue) provided by doctors to subjects with tattoo. Second, the 120 subjects were randomly assigned to either Contractubex or Control group at equal probabilities. In suitability, it was the right research approach for the researched question because it was going to compare result after receiving Contractubex gel with a control group. In short, RCT is the appropriate method and correct approach to conduct this research, as there were two groups that were allocated randomly, the study group received intervention and the control group did not receive intervention and the answer is “ Yes”.

3. Were participants appropriately allocated to intervention and control groups?

The answer is “ Yes”. Answer of question 2 has mentioned that the 120 subjects were allocated into the two groups randomly. In research term, complete randomization has been adopted. Complete randomization means each tattooed subject was randomly assigned to either of the groups. It is simple and optimal in the sense of validity to prevent accidental bias (Gallin & Ognibene, 2007). In randomization procedure, the researchers adopted fifty-fifty basis allocation (60 subjects in Contractubex group and 60 subjects in Control group). In this research stratification can be observed.

Stratification means developing strata for sampling (Gallin & Ognibene, 2007). 60 subjects in control group and 60 subjects in study group is a typical example of stratification. The purpose to do so is that since most statistical tests, say, the paired student’s t test are most reliable when the groups being compared have equal subjects (Gallin & Ognibene, 2007), it is desirable for the randomization procedure to generate similarly-sized groups. In short, as all participants were assigned to Contractubex and Control groups appropriately.

4. Were participants, staff and study personnel ‘ blind’ to participants’ study group?

The above parties understood the details of the research. Ho et al (2006) paper mentioned that “ informed consent” was obtained from all subjects. “ Informed consent” is a process of communication between a subject and doctor that results in the subject’s authorization or agreement to undergo a specific medical intervention (Berg et al, 2001). On the one hand, blinded

research can avoid bias. However, it is impossible for some treatments. For example, treatments where active participation of the subjects are necessary (e. g. regularly receiving laser therapy with the application of the gel). In research personnel, certainly they understood the details of the research, for instance, employing Q-switched laser systems as well as its spot size and repeat rate and pulse duration. They were unable to perform the research successfully otherwise. Nonetheless, whether the control group received placebo gel and the assessor of the scars knew the research details or not did not mention. In brief, open trial (the above parties understood the details of the treatment) instead of blind trial was employed and the answer seems “ No”.

5. Were all of the participants who entered the trial accounted for at its conclusion?

Originally, there were 60 subjects in the control group and 60 subjects in the study group. However, there were 8 out of 60 subjects in the study group quitted the research. 5 out of 8 simply defaulted follow-up and 3 out of 8 stopped using the gel due to adverse effect. In the control group, there were 5 out of 60 subjects quitted the research. 4 out of 8 simply did not follow-up and 1 out of 8 stopped using the gel due to have a baby. Although, there were a few subjects quitting from the research due to personal affairs, the groups' size still remained similar (52 in Contractubex and 55 in Control groups) and the researchers have already reported such discrepancy. In other words, intention to treat was used as it is a strategy for the analysis of RCT that compares subjects in the groups to which they were originally randomly assigned (Gallin & Ognibene, 2007) and the answer is “ Yes”.

6. Were the participants in all groups followed up and data collected in the same way?

In the former, the subjects were followed up from 13 to 20 months with a mean of 15.5 + 2.6 months. The importance of the follow up was to review the probability of scar formation after applying the gel. Likely, the research personnel followed up the subjects after the last laser treatment. However, the same amount of attention to the subjects from the research personnel becomes questionable because the researchers did not describe how to review the subjects. More elaborately, how much time the researchers spend on each subject for review? In addition, performance bias may occur. For instance, if research personnel know which group subjects are in, they may treat subjects differently (Gallin & Ognibene, 2007). In this aspect, “can’t tell” seems appropriate. In the latter, “Yes” in terms of data collection in the same way, the researchers should collect the data during clinical observation. Clinical observation is the research personnel directly observe any changes during the study period and then record the changes. Data analysis can be done by using statistical software (e. g. SAS). In short, the answers were “Yes” in the way of data collection only. The amount of attention to the subjects needs the research personnel further clarification otherwise performance bias may be suspected.

7. Did the study have enough participants to minimize the play of chance?

The meaning of the play of chance can be explained by the following example, taking a comparison of the Contractubex group with the control group in which 4 subjects scar formation with the Contractubex group and 6

subjects scar formation with the control group. It would be incorrect to conclude that the Contractubex group was better than the Control group. It is because if the comparison was repeated, the numbers of subjects who formed scar might be same (5 against 5). However, 7 subjects scar formation with the gel and 16 subjects without the gel, chance becomes a less likely explanation for the difference. In Ho et al (2006) study, numbers of subjects were enough to lessen the play of chance. Sample size can be determined by a formula by inputting population size and confidence level as well as margin of error and response distribution. On the one hand, significant difference between the two groups was observed. Power calculation can facilitate the research personnel determines how large of a sample the research personnel needs to make precise statistical conclusions (Gallin & Ognibene, 2007). Therefore, statistical significance was the robust evidence to prove the play of chance impossible.

8. How are the results presented and what is the main result and

9. How precise are these results?

Comparison of the intervention and control groups using the p-value has been presented. The main finding was that the application of the gel was useful to prevent scar formation after laser removal of tattoos. In accuracy of the results, p-value $< .05$ can be regarded as statistically significant that scar removal with the application of the gel was not by chance. The results can be considered to be quite precise.

10. Were all important outcomes considered so the results can be applied?

The research proved that the gel was effective, safe, and easy to apply in the prevention of scarring in Chinese subjects having laser removal of tattoos. Nonetheless, 100% scar removal is not guaranteed after using the gel. The results revealed that there were a few subjects who still have scarring. In addition, permanent hypopigmentation and transient hyperpigmentation can be noted. On the other hand, you may argue that the results may be affected by a political factor, that is a pressure from the pharmaceutical company, Ho et al (2006) have indicated that no significant interest with commercial supporters at the beginning of the research. In short, the research provides a reliable reference to healthcare professionals that the gel is recommended to be used in dark skin patients receiving laser treatments of tattoos.

Ten questions have been answered to help me make sense of quantitative research. Also, ten questions are used to help me make sense of qualitative research. Qualitative research is a generic term for investigative methodologies described as ethnographic, naturalistic, field, or participant observer research. It underscores the importance of looking at variables in the natural setting in which they are found (Sliverman, 2004).

1. Was there a clear statement of the aims of the research?

Qualitative PICOT is a framework that healthcare professionals can use to formulate effective clinical questions in a step-by-step manner (Melnyk & Fineout-Overholt, 2010). The population of the study was the six nurses who had experiences in taking care of SARS patients. The issue of the study was identifying instructive messages to guide nursing practice in future

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epidemics by in-depth interview of the six Chinese nurses who cared for SARS patients. The context of the study was where the study takes place. The research mainly takes place in Beijing. The outcome of the study was the research gave specific direction to enhance potential for a well-prepared nursing workforce in future epidemics. The time of the study was the SARS outbreaks between 11/2002-5/2004 and data were collected in 2003 within the three months following the nurses' quarantine necessitated by caring for SARS patients.. In brief, the answer is “ Yes”.

2. Is a qualitative methodology appropriate?

Qualitative research is to study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them. It is intended to penetrate to the deeper significance that the subject of the research ascribes to the topic being researched (Denzin, 2005). Interviews, observations and case studies are commonly used for data collection and then analyse the data. Samples are usually small and are often selected purposively. Qualitative research uses detailed descriptions from the participants as ways of examining specific issues under study. The research method employed by the researchers was appropriate because the following criteria were matched- detailed description instead of statistical software were used and number of participants was quite small- only six. In addition, the researchers adopted phenomenology. The phenomenological approach is to describe accurately a person's ' lived' experience in relation to what is being studied (i. e. the six Chinese nurses caring for SARS patients) (Denzin & Lincoln, 2005). In short, the answer is “ Yes”.

3. Was the research design appropriate to address the aims of the research?

Appropriate method (i. e. in-depth interview) for conducting the research was used. In-depth interview is a kind of qualitative research technique that involves conducting intensive individual interviews (i. e. the six nurses) with a small number of respondents to explore their views on a particular idea (i. e. sharing in caring SARS patients). In the study, the researchers asked participants about their experiences and insights regarding to the caring for SARS patients, the thoughts they have concerning nursing care, challenge, and outcomes as well as about any changes the participants perceive in themselves as a result of their involvement in the study (Denzin & Lincoln, 2005). In addition, rich contextual information can be obtained and the research personnel can ask the six nurses to elaborate their sharing in details through the in-depth interview. So the answer is “ Yes”

4. Was the recruitment strategy appropriate to the aims of the research?

Six nurses were invited to share their experiences in caring for SARS patients. The six nurses were no objections and voluntary to share their encounter after enquired by research personnel. In other words, a reader should not suspect their willingness of participation. The recruitment strategy was appropriate, because if reward-based (e. g. bonus to interviewees) and compulsory-based recruitment were offered to potential interviewees, the accuracy and reliability of data should be suspected. To achieve the aims of the research, nurses were voluntary to share their stories and they provided detailed descriptions with little prompting were

important to the aims of the research. In other words, it starts with a purpose in mind and the sample is selected to include interested party (i. e. nurses with experience in caring of SARS patients) and exclude those who do not suit the purpose and purposive sampling was used (Denzin & Lincoln, 2005). So the answer is “ Yes”.

5. Were the data collected in a way that addressed the research issue?

To collect data, a storypath approach was used. Research personnel recorded what the six nurses presented by a tape recorder. Seven inquiry phases were associated with storypath approach, including gathering the story, reconstructing the story, connecting it to the literature, naming the complicating challenge, describing the story plot, identifying movement toward resolving, and gathering additional stories (Denzin & Lincoln, 2005). In application, specific questions were asked by the research personnel, for instance, challenge the nurses were facing during caring for SARS victims, how the experience influence your hopes and dreams in the coming future. The data collection methods must observe the ethical principles of research. In short, the answer is “ Yes”.

6. Has the relationship between researcher and participants been adequately considered?

This research paper mentioned that the stories of the six nurses were collected by two Chinese investigators, It was hard to say that any potential bias and influence occurred because the research personnel simply mentioned that they were responsible for gathering the stories from the participants and supporting activities, say, properly use of tape recording.

Apparently, the relationship between the research personnel and participants were nothing, but participants may be influenced by the research team or in professional term- reflexivity. Reflexivity requires an awareness of the researcher's contribution to the construction of meanings throughout the research process, and an acknowledgment of the impossibility of remaining 'outside of the six nurses' while conducting research. In short, the answer of this question is "Yes".

7. Have ethical issues been taken into consideration?

Oral consent is a kind of ethical issue. Kozier et al, 2004 define the consent is an essential part of the research process, and as such entails more than obtaining a signature on a form (Kozier et al, 2004). Research personnel must educate potential subjects to ensure that they can reach a real informed choice about whether or not to participate in the research. Consent must be given freely and with no coercion as well as based on a clear understanding of what participation involves. On the one hand, the above study has been approved by the University's ethics committee. The committee is responsible for reviewing, on request, ethical or moral questions that may come up during the study. In brief, the answer is "Yes".

8. Was the data analysis sufficiently rigorous?

In-depth description of the analysis process was shown in Liu & Liehr (2009) paper. The authors described every phase elaborately and in step-by-step pattern. There were total 5 phases of the content analysis for the nurses caring for SARS patients. The content shared by the six nurses was similar because of geographical reason and the consistent format of the interview.

Such arrangement provided convincing analysis to a reader. In fact, thematic <https://assignbuster.com/examining-qualitative-and-quantitative-studies-with-casp/>

analysis was employed by the researchers. It means focuses on identifiable themes (i. e. sharing of nursing care of SARS patients) and data is analysed by theme. This type of analysis is highly inductive, that is, the themes emerge from the data and are not imposed upon it by the research personnel (Denzin & Lincoln, 2005). In short, the answer is “ Yes”.

9. Is there a clear statement of findings?

It is crystal clear that there were three core qualities (personal challenge, essence of care and self-growth) the researchers found. Each quality was described in-details with concrete example of the original words from the six nurses. In addition, instructive messages for guidance during future epidemics were also provided. The findings were highly related to the research question. In brief, a clear statement of the findings was clear and evidences were provided to support each quality the answer is “ Yes”.

10. How valuable is the research?

The researchers discovered three core qualities and instructive messages regarding to SARS patients caring. Such discovery greatly increases preparedness by attending the messages including structured support, disease/protection-related information systems and the power of military spirit. Maybe the above components can be further researched so as to obtain greater improvements. In addition to enhance preparedness and identify new areas where researches are necessary, the findings are universal applicable. Healthcare frontline staff may face the problems when caring for SARS patients, say, lack of resources. Clinical leader may find the importance of structured support and collaborative spirit to relieve the staff pressure. In short, the value of this research is valuable.

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Conclusion

To sum up, the CASP guidelines can appraise both quantitative and qualitative researches. The guidelines include ten questions in which provide comprehensive evaluation of the above studies. The guidelines are particularly useful in appraising health and social researches. Furthermore, the CASP guidelines aim to enable readers to develop the skills to find out and make sense of research evidence, helping them to put knowledge into practice.

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