



## Conducting Healthcare Research: Do Undergraduate Nursing Students Understand and Adhere to Ethical Principles of Research?

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**Abstract:** Ethical standards must be observed in any research involving human participants. The researchers need to maintain the participant's rights to privacy, dignity and confidentiality of information when conducting research studies. This study explores and describes knowledge and practices of undergraduate nursing students with regard to adherence to ethical principles when conducting healthcare research. A qualitative, explorative and descriptive study was applied, involving 15 purposively selected undergraduate nursing students at the University of Limpopo, South Africa. Unstructured one-to-one interview sessions were conducted until data saturation was reached. Data were analysed using Tesch's open coding data analysis method. The following three themes and their sub-themes emerged during data analysis: nursing student's knowledge about adherence to ethical principles when conducting healthcare research, the purpose of research ethics as viewed by the students and an outline of the important aspects included when obtaining informed consent. The study found that some students possess knowledge while others lack knowledge regarding adherence to ethical principles in conducting healthcare research. Thus, it is imperative to organise research ethics workshops to educate undergraduate students about the importance of and need to abide by ethical principles when conducting healthcare research.

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### INTRODUCTION

Ethics includes all voluntary actions and rights that are deliberate and are subject to the ideas and opinions expressed when conducting research in every field, including the healthcare field<sup>[1]</sup>. Research that involves

human subjects raises unique and complex ethical, legal, social and political issues to be taken into consideration during the research process. Research ethics include the analysis of ethical issues that are raised when people are involved in a research study as participants. There are three objectives that need to be met when conducting

research concerning adherence to ethical principles. These are: to protect human participants; to ensure that research is conducted in a way that serves the interests of individuals, groups and/or society and to examine specific research activities and projects for their ethical soundness, looking at issues such as confidentiality, anonymity, informed consent, privacy and autonomy<sup>[2]</sup>.

Nurse researchers have guidelines and standards to support the ethical conduct of their research. The guidelines are stipulated by ICN<sup>[3]</sup> and by the Declaration of Helsinki and are available globally<sup>[4]</sup>. At a national level in the United Kingdom, advice is provided on ethical standards that need to be adhered to by nurse researchers and is specified by RCN<sup>[5]</sup> and NMC<sup>[6]</sup> in the form of 'The Code'. In the United States of America, ANA<sup>[7]</sup> also provides a Code of Ethics for nurses when conducting research. In addition to professional guidance, nurse researchers operate within a research governance framework and are motivated to promote ethical research practice.

Ethical sound research practice depends on the individual researcher's integrity in conducting research by following set ethical standards through all the research steps. Nursing students must be educated as to how to adhere to ethical principles when conducting research. Therefore, a framework to assist nurse researchers in making ethically sound research decisions is needed for them to succeed in this aspect of their research<sup>[8]</sup>. This framework would assist students and nurse researchers to explore issues related to informed consent within biomedical ethics. Students should understand that before involving participants in their research projects, they should outline the significance of the research to their lives, the purpose of the research, the objectives and ethical principles that researchers must adhere to and the methodology to be followed in the research.

Certain fundamental research principles need to be adhered to in conducting healthcare research. All participants should be given an information sheet outlining the nature of the research projects, purpose, any risks that could occur, steps to reduce risk and the benefits for the participant. All these must be clearly and fully described and outlined in the informed consent which should be obtained from each participant prior to data collection<sup>[8,9]</sup>. A key issue of some critical care research studies relates to who the participants are. Also, confidentiality and anonymity must be ensured and the participant's right to the confidentiality of the data provided must be maintained. The anonymity of any person or institution is protected in the research report by ensuring that the data does not refer to a particular person or institution. Additionally, the researcher must respect the participant's right to privacy. The participant has the

right to determine the extent to which and the general circumstances under which his/her private information may or may not be shared with others. Student researchers ought to know that they do not have the right to share the details of the participant's information with anyone. Such information includes the participant's attitudes, beliefs, behaviour, opinions and medical records.

Nursing students need to be educated about the need to involve the participants in an ethical manner and to ensure that their dignity and privacy is not compromised when conducting research. The students need first to discuss their research proposal with their course co-ordinator or dissertation supervisor, in order to develop a clear picture of their research aim, methods and the ethical principles to abide to. Ethical standards promote the values that are essential to collaborative work such as trust, accountability, mutual respect and fairness. For example, many ethical norms in research such as guidelines for authorship, copyright and patenting policies, data sharing policies and confidentiality rules in peer review are designed to protect intellectual property interests while encouraging collaboration. It is a requirement for fourth year undergraduate nursing students at the University of Limpopo, to plan, undertake and complete a research project before graduating for the degree of Bachelor of Nursing.

Anecdotal evidence indicates that most nursing students at the University of Limpopo seem to be ignorant about research ethical principles and the need for adherence to ethical principles or standards when conducting research. This may obviously undermine the process of informed consent for the participants. Furthermore, it was felt the need for in-depth study of this phenomenon in order to assess the nursing student's perception of conducting healthcare research and the ethical principles underlying it. Against this background, this qualitative study was designed to answer the following question: What are the student's perceptions and understanding of ethical principles in healthcare research? The purpose of this qualitative research was to explore and describe the understanding of undergraduate nursing students at the University of Limpopo concerning adherence to ethical principles when conducting healthcare research.

## **MATERIALS AND METHODS**

**Research design:** This study uses a qualitative, explorative and descriptive research design to explore and describe the knowledge and practices of undergraduate nursing students concerning adherence to ethical principles when conducting healthcare research. According to Hansson *et al.*<sup>[10]</sup>, qualitative data are concerned with understanding how people give meaning

and interpret their experiences. Since, this study seeks to explore the perceptions of nursing students concerning ethical adherence when conducting healthcare research, a qualitative approach was ideally suited<sup>[11]</sup>.

**Ethics:** Ethical approval was obtained from the University of Limpopo Research Ethics Committee (TREC/180/2016). Permission to collect data from the students was obtained from the university management. Informed consent was obtained from the participants after the purpose, objectives, research methods and ethical principles were explained to them. Confidentiality, anonymity and privacy were maintained. Participants were aware of their right to withdraw without prejudice and were assigned pseudonyms to protect their identities in reporting of findings<sup>[11]</sup>. Privacy was maintained by ensuring that the interview sessions were conducted in the private rooms away from distractions.

**Data collection procedure:** The study was conducted at the University of Limpopo, Department of Nursing Science. Purposive sampling was used to select 15 4th year nursing students registered for the Bachelor of Nursing Science until data saturation<sup>[9, 12]</sup>. One central question was asked to all participants during the unstructured interview sessions. This was followed by clarity-seeking questions in order to provide the participants with the opportunity to describe and clarify the questions raised regarding the phenomenon studied<sup>[13]</sup>. The central question posed to the participants was: "Can you kindly describe how you adhere to ethical standards when conducting research to protect participants' rights?"

**Trustworthiness:** To ensure truth and value of the collected data, the following criteria to measure trustworthiness were adhered to throughout the research process: credibility, transferability, dependability and confirmability. To enhance reliability and validity of findings, an experienced qualitative researcher was provided with a copy of the transcripts to verify the procedure of data analysis<sup>[11]</sup>. Additionally, the participants were invited to comment on the themes and sub-themes that emerged about ethical adherence to research principles when conducting healthcare research. This strategy both verified the findings and further enhances degrees of validity and reliability of the data<sup>[11]</sup>.

**Data analysis:** Tesch's eight steps of qualitative data analysis were applied as described by Creswell<sup>[14]</sup> as follows: the researchers read through and organised collected data, then one rich interview transcript was selected and followed with the eight steps for data analysis; the topics were arranged into major topics,

unique topics and leftovers; the researchers took the list of topics and returned to the data; the topics were then abbreviated as codes; the researchers found the most descriptive wording for the topics, grouping them into categories; the researchers endeavoured to reduce the total list of categories by grouping together topics that related to each other; lines were drawn between categories to show interrelationships and thereafter, topics were clustered together and written in columns in order to draw attention to the association between the themes and sub-themes.

## RESULTS AND DISCUSSION

The results obtained from the data collected during the unstructured interview sessions were analysed using Tesch's open coding method and three themes and sub-themes emerged. Data were collected from 15 participants. The presentation and description of these findings are supported by direct participant's excerpts and the literature (Table 1).

The following themes and sub-themes are the core of the study regarding protecting participants when conducting healthcare research.

**Nursing student's knowledge of adherence to ethical principles when conducting healthcare research:** The findings of this study indicate that some students possess and others lack knowledge about adherence to ethical principles when conducting healthcare research. The participants could identify and describe ethical standards that should be observed when conducting research. These include: privacy, confidentiality, anonymity and autonomy. This knowledge and awareness of how the standards are applied was outlined by the participant who indicated that: "Research ethics include three major points such as privacy, confidentiality and informed consent therefore as a researcher you need to make sure that you implement these aspects in order to show respect to research participants and also maintain integrity of your research." Privacy, confidentiality and informed consent are major components of research ethics<sup>[1]</sup>.

The findings indicate that some of the participants lacked knowledge related to ethical principles like autonomy, privacy, confidentiality and anonymity as they did not mention the same principles that needed to be adhered to during the execution of the research process steps. In addition, one of the participants was unable to provide a clear explanation of autonomy: "if I recall well, autonomy is based on anonymity and anonymity is whereby you tell the person that your name will not be revealed it goes hand in hand with privacy".

Another participant stated: "I can't really explain how those principles are and how they are employed when conducting research, I know that I need to know them but it is difficult".

Table 1: Views of the participants regarding adherence to ethical principles when conducting healthcare research

Themes	Sub-Themes
Knowledge of nursing students regarding adherence to ethical principles when conducting healthcare research	Existing knowledge related to ethical standards Lack of knowledge related to ethical standards
Purpose of research ethics as viewed by the students	Existing knowledge related to protecting human rights Lack of knowledge related to principles of beneficence and maleficence
Outline of the important aspects included when obtaining informed consent	Explanation of research aims, methods, duration, risks and benefits Ensuring voluntary decision to form part of the study participants Outline of the process to access the research site for data collection

Participants should be made aware of their right to autonomy, that they can withdraw from the study at any stage of the research and that no one should act against their will and they should understand that their information will not be shared by anyone during or after the data collection but that it will be utilised strictly for the purpose of the study<sup>[15]</sup>.

**Knowledge related to purpose of research ethics as viewed by the students:** The findings of this study indicated that participants have their views related to the purpose of research ethics when conducting their research investigations.

Most of the students understood the purpose of research ethics when undertaking research, especially in relation to the protection of human rights. This was outlined by the participant who said: “In a study the reason for adhering to ethical principles is to respect participants as human beings and also to make sure that this is maintained in all data collection sessions that researcher is conducting”. Another participant with the same view stated: “I know very well based on what I was taught that I need to respect the participants when I conduct research and this I always do because I will always indicate that to them that they have the rights to be respected.” All possible means should be applied to protect the participant’s human rights during healthcare research and this should be made known to the participants<sup>[13]</sup>.

Participants were unable to adequately explain the principles of beneficence and maleficence which led to the conclusion that they did not understand or know them. This is confirmed by the following statement: “Beneficence and maleficence is how the researchers have maintain confidentiality when conducting research study. Additionally, I think it include ensuring privacy of the participants whereby the researcher will conduct the interviews in the private space”. According to Ashcroft<sup>[16]</sup> research ethics stipulate several purposes with regard to human subjects; one of the purposes is to do good to the participants. Researchers have an obligation to advance the interests of participants.

**Outline of the important aspects included when obtaining informed consent:** The findings of the present study indicate that most of the participants were able to

explain how to obtain informed consent from the participants before including them in the interview sessions.

Most of the participants demonstrated an understanding of obtaining informed consent, guided by an explanation of aims, methods, duration, risks and benefits. This was confirmed by the participant who explained: “Before, we can interview the participants we give full information of what is expected of him/her; outline in the language that participants will understand and again encourage them to ask questions, so that, you can clarify any misunderstanding. The information given includes objectives, aims and ethical standards that must be adhered to during the interview sessions.” All participants should be given an information sheet outlining the nature of the data collection and the purpose for which the data will be used for. Any risks, steps taken to reduce risk and benefits for individual participant should be made explicit on the participant information sheet<sup>[15]</sup>.

## CONCLUSION

Participants indicated that they understood that research subjects should decide voluntarily to be part of the research. Participants indicated that they understood that voluntary participation in the research project follows a decision that the participants take to be involved in the research project. The decision usually results in the signing of an informed consent form which indicates voluntary participation. This was confirmed by one of participant: “Participants should not be forced to participate; they should do so willingly not against their will”. Another participant said: “The participant shouldn’t be forced to be involved in the research interview sessions”. The American Nurses’ Association states that participants are not subjected to coercion; the researcher shouldn’t threaten them intentionally in order to obtain a participant’s consent.

Participants indicated that they were aware that before they conducted any interview sessions to collect data, they should obtain the consent of the research participants. This was outlined by a participant thus: “What I know about informed consent as a researcher you have to ask for permission before you can conduct a study or involve any person in an interview session.” Permission must be

obtained from the participants when conducting research. In the case of minors or persons who are not able to provide informed consent, permission should be obtained from the legal guardian or from a suitable responsible person<sup>[13]</sup>.

### LIMITATIONS

The limitations of the study should be taken in account in evaluating the findings which include the use of only nursing students in one university in South Africa and the subjective nature of the research methods applied<sup>[11]</sup>. Further research utilising different data collection techniques such as survey and observations and involving nursing students in other universities is warranted. Notwithstanding, this study provide a snapshot on the phenomenon of ethical research principles and adherence when conducting healthcare research among nursing students, in a semi-rural university.

This study reveals that some students possess and others lack knowledge concerning the importance of adhering to ethical principles when conducting healthcare research. There is a need to orientate students as to the importance of abiding to ethical principles when conducting healthcare research in order to protect the participants.

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