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DISCUSSION

Qualitative research design and approaches in radiography

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Abstract **Introduction** Radiography, as with other health care professions, aims towards establishing full professional recognition. A recognized research background is considered an essential component of this. Usually, emphasis is placed on quantitative research which focuses on the deductive component of the scientific 'confirmatory' method. However, this situation changed after the emergence of a post-positivist philosophy of medical research, which suggests the need for both quantitative and qualitative research to grasp a better understanding of the reality. The nature of qualitative research, unlike quantitative, is inductive and exploratory, providing insight into certain topics of which little is known and hence complementing quantitative research.

Purpose This article identifies the main qualitative research traditions that can be applied to radiography, providing a review in terms of their applications, areas of inquiry, and strengths and weaknesses according to the nature of the study. Previous radiography studies using qualitative approaches are critically reviewed to illustrate these issues. Their applications are also discussed based on the proposed radiography research framework by Adams and Smith, who identified broad radiography research areas aiming to further the research capacity of radiographers and the profession, especially by means of qualitative research.

Methods A comprehensive literature search was conducted using the CINAHL and ScienceDirect databases and the journal *Radiography*, and by using the keywords qualitative research to identify articles focusing on qualitative research. Only articles that were related to health care disciplines were then selected for the review.

Conclusion Three approaches, that are grounded theory, phenomenology and ethnography, can all be applied to the proposed radiography research framework to study intra- and inter-professional issues and clinical practice, and patient and health delivery issues. Hence, qualitative research methods can be used to

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rigorously study these important areas so as to produce high quality outcomes and promote the use of qualitative approaches in the radiography research culture.

Introduction

Radiography, as with other health care professions, aims towards establishing full professional recognition. A recognized research background is considered an essential component of this, as research evidence provides input into various activities, such as clinical practice and policy making for the demonstration of professional accountability and autonomy.[1–4] Usually, emphasis is placed on quantitative research which focuses on the deductive component of the scientific 'confirmatory' method, i.e. to reduce experience to well-defined variables in advance for investigation, since the philosophy of medical research in the beginning was positivism which described phenomena as they were experienced, i.e. empirical evidence. Although this tradition is still the 'gold standard' upheld by the majority in the research world, challenges such as from logical positivism and post-positivism were noted in the last century. Logical positivism suggests that other than empirical evidence, logical reasoning is also a source of knowledge. Later, post-positivism espoused that scientific reasoning and common sense reasoning are the same process and, therefore, all observations are fallible and may contain errors. This addresses the need for both quantitative and qualitative research in order to gain a better understanding of reality.[5–7] The nature of qualitative research, unlike quantitative, is inductive and exploratory, i.e. broadening understanding of phenomena during study and, in turn, driving the subsequent research procedures so as to provide insight to certain topics of which little is known and hence complementing quantitative research.[1,4,6,8] Misconceptions of the rigor and quality of qualitative research are still prominent, as the research community tends to use the criteria for quantitative research, such as reliability and validity, to evaluate qualitative studies and criticizes the latter over its small sample size and lack of hypotheses determination and statistical analysis.[7] However, criteria such as credibility (believability of data), dependability (stability of data similar to reliability of quantitative research), confirmability (objectivity of data) and transferability (generalizability of data similar to external validity in quantitative terms) to evaluate its rigor, i.e. trustworthiness, have been established over the past two decades or more.[6,8–11]

Although the role of qualitative research has been recognized as important, there are few opportunities for members of the radiography community and other health care disciplines to learn and apply it.[1,4,6,7,9] This article identifies the main qualitative research traditions that can apply to radiography, providing a review in terms of their different applications, areas of inquiry, and strengths and weaknesses according to the nature of the study. Previous radiography studies using qualitative approaches are critically reviewed to illustrate these issues and their applications are also discussed based on the proposed radiography research framework by Adams and Smith, who identified broad radiography research areas aiming to further the research capacity of radiographers and the profession, especially by means of qualitative research.[1]

Methods

A comprehensive literature search was conducted using the CINAHL and ScienceDirect databases and the journal *Radiography*, and by using the keywords qualitative research to identify articles focusing on qualitative research. Only articles that were related to health care disciplines were then selected for the review.

Discussion

Qualitative research design and approaches for use in radiography

Despite the fact that qualitative research designs have common features, such as the purpose, perspective,[1,3,4,6,8,12] area of inquiry,[8,13] nature of data,[4,8] research question determination,[1,9] sampling method,[9] sample size, data collection instrument, method of data analysis[4,8,9,13,14] and criteria to evaluate research quality,[6,8,9,11] there are a number of different approaches which can be used. One way to categorize these approaches is to sort them according to disciplinary customs, called

research traditions.[10] Review of literature on qualitative research in health care disciplines shows that three qualitative research traditions are commonly used nowadays, these being grounded theory, phenomenology and ethnography, which can all apply to radiography. Although historical research also belongs to the qualitative research traditions,[4,8,10] a paucity of relevant articles has been located in the CINAHL and ScienceDirect databases and it is thus excluded from this review.

Grounded theory

The origin of grounded theory is the sociology discipline. It was developed by the sociologists Barney Glaser and Anselm Strauss in 1967 to study the social phenomena from the perspective of symbolic interactionism, which is a social psychologic theory.[8,9,12,14] Symbolic interactionism means that individuals' realities are created through attaching meaning to situations and symbols such as words, dress, hairstyles, or objects of worship, which in turn are used to express their meanings or beliefs. Although an individual's reality is unique in nature, the symbolic meanings are shared among groups and form the basis for actions and interactions, and in these processes, the meanings may change. Grounded theory studies these symbols and interactions and how the changes happen in certain situations to develop theories of social processes 'grounded' or based on the lives of individuals when experiencing the processes. In other words, the theory is developed inductively to explain human behaviours or processes.[8,14]

Apart from its initial application to study the process of socialization, grounded theory can be used to study any process of health issues such as practitioner effectiveness in managing clinical cases,[9] quality management,[15] cancer patients' adaptation to therapy,[14] or practitioner–patient interactions,[12] for example. The area of inquiry describes the meaning of the core processes or variables of certain situations happening to individuals or groups in order to generate theory[12,14] and can be divided into two types, formal and substantive. The former emphasizes conceptual levels of inquiry under many different types of situations, while the latter focuses on specific, circumscribed and empirical areas of inquiry.[14] Initial inquiry usually has a wide focus so as to identify what is happening or how something is occurring and the focus is narrowed down at a later stage by the identification of specific processes or pathways.[8]

Grounded theory is an appropriate method to study issues such as complex relationships, clinical situations and new areas of inquiry, since it operates to uncover core variables within phenomena that have not been studied, or the problem has been studied previously but core processes have not been determined or are poorly understood.[9,12] This is particularly important to complement the pitfall of quantitative research in determining causal relationships based on certain variables and standardized measures. Quantitative research may fail to reveal the reality or provide a detailed understanding of the issue, or provide well-defined variables for further theory verification using a quantitative approach.[14] Other strengths are that this theory moves beyond describing and understanding the phenomenon which is the area of inquiry to conceptualize the issue, i.e. theory generation.[4] Although Benner[16] adapted the Dreyfus'[17] model of novice to expert continuum, which was developed by phenomenology to study the novice to expert issue in nursing using a phenomenologic approach,[4,7] the use of grounded theory to study similar issues becomes common in health care nowadays, such as in physiotherapy[9] and in radiography.[15]

Theoretical sampling is one of the characteristics of grounded theory, in which data collection and constant comparative analysis take place concurrently to drive the sampling process to select participants that can help to develop a theory reflecting variation, process and density.[4,6,8,9,12,14] In other words, the purpose of this sampling method is to attain data saturation, i.e. no further new information emerges.[12] However, some articles on grounded theory determine that the term, purposeful/purposive sampling is interchangeable with theoretical sampling.[4,9] Indeed, the first phase of theoretical sampling is the same as the purposeful/purposive sampling, i.e. to select participants who are information rich to the issue, but the former takes one further step to select more informants that can provide information to shape the theory developed after data analysis. Purposeful/purposive sampling has a pre-determined sample size but theoretical sampling does not.[9] The weakness of grounded theory is that it is relatively time consuming. Also, it can only be applied to study problems which involve any process within it.

Phenomenology

Phenomenology originates from the philosophy discipline. Its emergence is from the works of philosophers such as Husserl, Kierkegaard,

Heidegger and Merleau-Ponty.[8,14,18] The philosophy of phenomenology relates to individuals only knowing what they experience through attention to perceptions and meanings which awaken their conscious awareness.[14] The area of inquiry for this approach is the 'lived experience' of individuals by attending to their perceptions,[4,8,14,18] i.e. a phenomenon or event which is cognitively constructed by those involved.[6] Two views are noted in the literature, i.e. the goal of the area of inquiry is only description,[4,6] or description and understanding of the lived experience.[8,14] Generally, phenomenology only describes the lived experience of individuals to create a picture of the phenomenon. However, a special type of phenomenology, Heideggerian hermeneutic phenomenology,[17] moves beyond this to interpret the experience to extract the essence or the essential, invariant structure that is the central underlying meaning of the experience and hence the essence of common lived experiences.[6,14,18]

Application of phenomenology is not rare in radiography research, such as Innes'[11] study on experiences of stress of radiography students, and the study of Keogh et al.[19] on radiography education. Indeed, the application of phenomenology can be very wide and radiography as a health care discipline which must interact with different parties, for example, the general public, patients and other health care professionals, and their experiences, falls into the area of inquiry using this approach. Apart from the issues previously studied, suggestions for research areas within radiography could include the recruitment and retention of radiographers,[20] needs of learning disabled patients presenting for an X-ray examination[21] and experiences of cancer patients having radiotherapy treatment.[14]

Although the application of phenomenology is bound by the area of inquiry, and the lived experiences of individuals, its application is still relatively wider than grounded theory since every individual would have their own experience and fall into the inquiry area.[4,8,14,18] In qualitative studies in radiography, this is a popular method adopted by researchers.[11,19] The other strength is that it takes one step further than other qualitative designs to rely on intuition, imagination, and universal structures to create a picture of the phenomenon, which illuminates and provides a perspective of the reality to persons other than informants.[4,14] Besides, the sample sizes of phenomenologic studies are usually small, so as to obtain the richness of the individual experience and hence this saves resources in recruitment of participants.[14]

However, the small number of participants may pose a threat to the credibility of the data.[6,8,9,11] Multiple data collections, i.e. time triangulation,[10] are expected to offer a credible insight into the lived experiences leading to a great time investment.[14] Also, the choices of data collection instruments within this approach are limited, for example, multiple in-depth interviews, written anecdotes of personal experiences, researchers' self-reflections, previously developed descriptions from artistic work etc., and usually the main tool is in-depth interview.[4,8,14] Furthermore, it is important to combine interviews with projective techniques such as art work or play when studying the experiences of persons who are weak in communication, such as learning disabled patients.[14]

Ethnography

Ethnography is the oldest qualitative research method developed by anthropologists to study aspects of the way of life or phenomenon of a specific culture or subculture group.[4,6,8,14,18,22] In other words, it is a social scientific description of a group of people and the cultural basis of their identity.[6] Traditionally, unlike other approaches discussed, ethnography only focuses on the accurate and deep description of the life of people within the group.[4,6,8,22] Although the scope of ethnography has evolved from the deep description to understand the culture, the primary emphasis is still the description.[14,18] Culture can be defined as the knowledge, customs, objects, events and activities which are shared in a group of people and these can be categorized into three aspects, cultural behaviour (what people do), cultural knowledge (what people know) and cultural artifacts (what people make and use).[8,14,22] Therefore, the area of inquiry of this approach is the culture of a group of people including the cultural behaviour, cultural knowledge and cultural artifacts.[4,8,14,18,22] This area of inquiry can be divided into two types, i.e. the study of all cultural behaviours, cultural knowledge and cultural artifacts of a group of people, including the external factors related to them (macro-ethnography), or only those in a single social situation (micro-ethnography).[14]

Although it is uncommon to apply ethnography to radiography research, the study conducted by Browne[21] on the needs of learning disabled patients presenting for an X-ray examination is a suitable topic for the application of this approach. Since the definition of culture is the knowledge, customs, objects, events and activities which are shared in a group of people, every group of people should have their own cultures which can be studied by this

approach.[8,14,22] Apart from studying the minority groups presenting to the radiography service, cancer patients receive radiotherapy treatments which result in a different way of life for them and this is unique from others and forms a cultural group that can be studied.[14] In general, every issue involving a particular group of people related to radiography can be studied by ethnography.

The strength of this approach is to provide accurate and deep descriptions of the culture of a particular group of people leading to an opportunity to understand them through immersion into their culture, i.e. participating in the specific cultural social scenes for an extended period of time, which other approaches could not do.[4,6,8,14,18,22] However, this crucial part of ethnography, in turn, becomes its weakness. Since the application of ethnography can be either from an etic (outsider's view) or emic (insider's view) perspective, for the etic approach, it is difficult for the outsider (not belonging to the group prior to the study) to establish a relationship with the informants and gain permission to immerse into the group, and hence this cannot be an ethnographic study. For example, it is difficult for a radiographer as a researcher to participate in the daily lives of cancer patients and study their culture using an etic approach. Though it is not a problem for the insider (a member belonging to the group) to participate in the culture and study this from the emic perspective, there is a cyclic nature of data collection and analysis. Apart from key informants (those who are especially knowledgeable on the issues), the general informants (others within the cultural group) would also be included, if necessary, for confirmation of the description, which is similar to the purpose of theoretical sampling in grounded theory, but this is time consuming.[4,14,22] It is noted that studies using the ethnographic approach may take a lifetime.[4] Table 1 summarizes the different applications, areas of inquiry, and strengths and weaknesses of the three research methods.

To demonstrate how radiographers may incorporate qualitative methods into their research design, six research topics have been selected from the journal *Radiography*, between the years 1996 and 2003, which are suitable for use of at least one of the approaches discussed.[11,15,19–21,23] These will be critically reviewed below.

Research topics appropriate for grounded theory

Prime and Le Masurier[23] used a 'think aloud technique', a quantitative approach to ask subjects to verbalize their thoughts during the performance of a task,[24] so as to study the decision making processes of diagnostic radiographers. However, this topic is particularly appropriate for grounded theory, since the discussion states that the intuition process of experienced radiographers is still poorly understood. It is the strength of grounded theory to study this type of work.

Henwood[15] used a descriptive exploratory approach to study the steps to be taken to progress to a more developed view of quality management. Unstructured interviews were conducted with radiographers and imaging department managers at six hospitals and thematic analysis was used to analyze interview transcripts. A model of managing quality called 'The Quality Triangle' was developed. The pinnacle of this model is a separate level within it called, 'professionalism', supported by six, basic levels of competence: qualification, caring about quality, managing quality, setting quality standards, total quality audit and empowerment. Although the article explicitly states that it is extendible to grounded theory, several criteria should be met when doing so: (1) Detailed description of study design, data collection and analysis should be provided.[13] (2) Theoretical sampling should be used.[4,8,9,12,14] (3) Triangulation of data collection methods such as interviews, participant observations, memoing and reflective diary, and data collection over time should be encouraged.[13,14] (4) Constant comparative method should be used in data analysis. (5) Unique language of grounded theory should be used.[4,6,8,9,12,14]

Research topic appropriate for grounded theory and phenomenology

Coombs et al.[20] conducted a descriptive, exploratory, cross-sectional study with 30 school pupils aged from 15 to 16 years; 18 radiography students; 18 mature students from healthcare or access to professional courses; 17 radiography assistants; two agency radiographers; and three independent sector radiographers, to explore and understand participants' experiences and perceptions relating to the attractiveness of the National Health Service as an employer of potential radiography staff. Individual and group semi-structured interviews were used as data collection tools. Data were analyzed by content analysis using a structured coding framework involving data reduction, data display and conclusion drawing/verification through the use of the N'Vivo (a software package developed by QSR International for management

Table 1 Qualitative research methods: applications, areas of inquiry, and strengths and weaknesses

	Applications	Areas of Inquiry	Strengths	Weaknesses
Grounded Theory	To study the process of socialization (initial application)	The meaning of the core process or variable of certain situations happening in individuals or groups in order to generate theory	To uncover core variable within phenomenon that has not been studied, or the problem has been studied previously but the core process has not been determined or is poorly understood	Theoretical sampling is relatively time consuming
	To study any process of health issues	The area of inquiry can be divided into two types: formal and substantive	To conceptualize phenomenon, i.e. theory generation	Only applicable to study problems which involve any process within it
Phenomenology	Wide — it can be applied to study any lived experiences of individuals	Lived experiences of individuals	Wide application	Small number of participants poses a threat to the credibility of the data
		Phenomenology only involves descriptions of the lived experiences	To provide a picture of the phenomenon which illuminates and provides a perspective of the reality to persons other than informants	Multiple data collection assures the credibility leading to time sacrificing
		Heideggerian hermeneutic phenomenology involves both description and understanding	Sample size is small — save resources to recruit the participants	Limited choices of data collection methods
Ethnography	Every issue involving a particular group of people	Culture of a group of people including the cultural behaviour, cultural knowledge and cultural artifacts	To provide accurate and deep descriptions of the culture of a particular group of people leading to an opportunity to understand them	For the etic approach, it is difficult to establish a relationship with the group and immerse in it
		The area of inquiry can be divided into two types: macro-ethnography and micro-ethnography		Cyclic nature of data collection and analysis is time consuming
				Study may take a lifetime

and analysis of qualitative data[25]). Findings were categorized according to the three elements of theory of planned behaviour, i.e. behavioural beliefs, normative beliefs and control beliefs to be used to develop a questionnaire for the next stage to study the issue using theory of planned behaviour. Behavioural beliefs included: high levels of stress, staff shortages, a lack of time to spend with patients and a poor working environment with little support. Normative beliefs included: people who are important to them to be supportive and proud of them; and control beliefs included financial costs of training, a lack of flexibility towards family commitments and lower pay levels. This study had a rigorous data analysis process and procedures were documented in detail with justifications. It fully utilized the strengths of qualitative and quantitative research approaches by exploring the issues, using a qualitative research strategy, and hence provided information

for the construction of a new questionnaire appropriate for applying the theory of planned behaviour in the second stage, so as to study the issues in a quantitative way. Although the authors suggested it would be more rigorous to study the issues using a qualitative approach first, the findings of previous qualitative studies on this topic, solely using a grounded theory approach, also achieved similar conclusions as this study. This implies that grounded theory is a credible research method to study this type of issue. Since the area of inquiry of the research question is the experiences of individuals, phenomenology would also be appropriate.

Research topics appropriate for phenomenology

In Innes'[11] phenomenologic study, 13 radiography students, from varying courses, from BSc to MSc, were interviewed using a semi-structured approach. Data were analyzed by Burnard's thematic content analysis to investigate their experiences on causes of stress and methods of coping. Common themes that emerged were: reported stress levels, effects of stress, causes of stress, personal discovery and methods of coping. This study is a good example of phenomenology as it provides a detailed description of the major themes and keeps with the phenomenologic method and terminology. One of the limitations of the study is that each radiography student was only interviewed once, whereas multiple interviews could have offered a more credible insight into the lived experiences.[14]

In a descriptive, phenomenologic study by Keogh et al.[19] 13 radiography students and five undergraduate nursing students completing a standard primary health care module were invited to complete a questionnaire comprising open-ended questions. The aim was to explore students' personal experiences of a multidisciplinary module on primary health care and data were analyzed by content analysis with quasi-statistics. The overall theme was that the module could promote multidisciplinary team building and provide the opportunity for inter-professional patient education. The fundamental weakness of this study is that, although there were several research questions in this study and only the phenomenologic part is reviewed here, it should have been in the form of descriptive, exploratory research, instead of descriptive phenomenology, as a questionnaire is an inappropriate data collection method in phenomenology and violates the nature of obtaining the richness of individuals' experiences.

Research topic appropriate for phenomenology and ethnography

Browne[21] conducted a descriptive study to explore the experiences of learning disabled patients who had undergone an X-ray examination and their carers. Semi-structured interviews were conducted in the patients' homes and data were analyzed by thematic analysis. Three themes emerged: waiting times, staff attitude and carer involvement. Although it is not explicitly stated that a phenomenologic approach was used, it seems that this was the case and hence the participants should have been invited to have multiple interviews. It is appropriate to include carers as the participants since the focus is on both the learning disabled patients and carers. For further research directions, such as imaging protocol development for learning disabled patients, ethnography would provide a clear portrait of this minority group, i.e. accurate and deep descriptions of their culture to facilitate the protocol development, and method triangulation can also be obtained. It is possible to use an ethnography approach for similar studies as well.

Proposed research issues appropriate for grounded theory, phenomenology or ethnography

In an article by Adams and Smith,[1] a proposed radiography research framework was suggested including intra-professional issues, inter-professional issues, and clinical practice, patient and health delivery issues. For intra-professional issues, the authors claimed that there are a number of sub-groups such as the grass-root practitioners, elite representative groups and other key 'insider' stakeholders comprising the radiography community and the differences between them lead to debate on issues such as the intra-professional organization, practice guidelines, professional behaviour and educational priorities. Hence, this generates research questions which can be studied as one may wish to explore the perceptions and experiences of each group. Obviously, these fall into the areas of inquiry of grounded theory, phenomenology and ethnography. For sub-groups, hierarchical relationships exist which are stated implicitly and such relationships usually involve processes[15] or symbolic interactionism which can be studied by grounded theory.[8,9,12,14] One example from this article is, 'What do they consider to be the pressing concerns and barriers to improving radiographic practice?' Phenomenology can be

used to explore their perceptions and experiences, for example, 'What is the experience of becoming a radiographer?' Also, the sub-groups can be explored through ethnography, such as by asking, 'What factors influence the choice of becoming a rural practitioner?'

The second aspect raised in the article relates to inter-professional issues and addresses the need to explore and evaluate inter-professional interactions. Again, some degree of symbolic interactionism should be expected in inter-professional interactions, which are subject to change, and these can be studied by grounded theory. One example question: 'How can the collaborative, inter-disciplinary practice between radiographers and others providing patient care be improved?' Phenomenology is appropriate for inquiring about experiences of inter-professional interactions when using a question like 'What are the experiences of radiographers interacting and collaborating with other health care professionals in a variety of practice settings?' Ethnography can be used to study other health care professions as cultural groups, and one application can be the issue of non-radiographers doing radiography.

The last aspect within the framework is the clinical practice, patient and health delivery issues which focus on the patients' perceptions and experiences of radiographic practice. Prominently, patients would form a cultural group, which is suitable for ethnography, and patients' experiences are appropriate for phenomenology. An example of inquiry extracted for these two approaches can be the patients' experiences of their illness in the context of their wider life circumstances and daily activities. For grounded theory, just like the inter-professional issues, there is also an interaction called the patient—practitioner interaction and this is again suitable for grounded theory. An extracted question can be 'What is the patient's role in care and decision making?'

Although the qualitative research traditions are credible methods to study issues encompassing radiography and to provide rigorous findings,[20] their applications are bound by their areas of inquiry. In order to study topics outside of their inquiry areas, descriptive qualitative studies may be used as no specific design and data collection tools are pre-determined and content analysis is a way of analyzing qualitative data to obtain themes and patterns that emerge.[10] However, the data collection tools or guides for data management and analysis employed in these approaches are, sometimes, wrongly considered as qualitative research methods. For instance, Adams and Smith[1] consider interviews, focus groups, observation, diary and document/text analysis as qualitative research methods. Burnard[26] has claimed that interviews, transcription and textual analysis are qualitative research methods as well. Indeed, these are only the data collection methods, and guides to data management and analysis, and the qualitative research methods used are descriptive qualitative studies. Since there are no specific rules and detailed guidelines on data generation and interpretation using this approach, query of the trustworthiness of the findings may be expected as a result.[8] If the measures to assure the credibility, dependability, confirmability and transferability are in place, trustworthiness of data will be maintained.[6,8,9,11] For example, Burnard[26] has criticized the use of interviews in which the words may not reflect what is in the participants' minds. But, using the member checking technique as one of the measures to assure credibility, by inviting several participants to review research materials such as the interview transcripts so as to verify the researcher's interpretation, would prevent this.[6,9,11] It is especially important to take these measures to assure trustworthiness in descriptive qualitative studies.

Conclusion

Despite the fact that the role of qualitative research has been recognized as important, misconceptions of the rigor and quality of its use are still prominent. The introduction of qualitative research traditions into radiography studies is necessary. The three approaches, grounded theory, phenomenology and ethnography can all apply to the proposed radiography research framework to study the intra-professional issues, inter-professional issues and clinical practice, patient and health delivery issues. Hence, it opens up other options for qualitative research methods, to study these important areas rigorously so as to produce high quality outcomes and promote the use of qualitative approaches in the radiography research culture.

Although the three approaches are credible methods to explore issues relating to radiography, their applications may be limited by their areas of inquiry. Grounded theory studies the process of health issues, phenomenology investigates the lived experiences of individuals, and ethnography describes the cultures of groups of people. In this case, descriptive qualitative studies reflecting the flexibility of qualitative research could be used to study issues outside their inquiry areas. But, precautions should be taken to assure the trustworthiness of the

data to be met, otherwise, the opportunity to appeal to the rigor and quality of qualitative research would be lost.

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