


Article journey:

Submitted
9/7/2022
Revised
22/11/2022
Accepted
2/12/2022
Online first
2/12/2022



PERSPECTIVES


Philosophical and methodological perspective in developing nursing knowledge through research in diabetes


Karina Megasari Winahyu¹ , Noppawan Piaseu²

Author information

¹ Faculty of Medicine Ramathibodi Hospital & Faculty of Nursing, Mahidol University, Thailand; Department of Nursing, Universitas Muhammadiyah Tangerang, Indonesia

² Department of Nursing, Ramathibodi School of Nursing, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Thailand

 karinawinahyu@yahoo.com

 <https://doi.org/10.31603/nursing.v0i0.7307>

Abstract

The development of nursing knowledge through research is crucial for its discipline. It is notable to understand the philosophical view of the researcher in conducting the study; in particular advanced analysis, the method would generate advanced nursing knowledge. Philosophical approaches to knowledge development in ontological, epistemological, and axiological contexts were addressed. Developing new knowledge requires the nurse to understand the nature, source, and ways to access the knowledge. Some philosophical approaches are discussed, including post-positivism, interpretative, humanistic, naturalistic, and critical approaches. Thus, different methods for acquiring knowledge, from observation to intervention studies which are underlying philosophies in nursing for addressing huge nursing phenomena, could enrich the nursing body of knowledge. Great use of evidence-based nursing knowledge leads to improved nursing practice quality. This review discusses the philosophical approach for researchers to use as a foundation for their study of the exemplar of diabetes mellitus.

Keywords: Research method; diabetes; philosophical inquiry; nursing knowledge; nursing developments

Philosophy in nursing is vital since it helps nurse scholars critically think and reflect on what they have done, then articulate it for knowledge development. A paradigm could be used as an underlying for knowledge development in nursing. Paradigm is a utilized model showing a clear exemplar (Cambridge Dictionary, 2022). The purpose of using a paradigm in nursing is to answer the most significant question in its discipline and shape the research methods (Monti & Tingen, 1999). Concerning epistemological context, there are three philosophical approaches for constructing knowledge paradigms, including post-positivism, interpretative, humanistic, naturalistic, and critical approaches. In addition, Monti and Tingen (1999) stated that empiricism and interpretation are the main paradigms used in nursing for reality-seeking consideration. In empiricism, researchers emphasize analyzing the phenomena through observation and experiment to inquire about knowledge, while interpretative explores people's norms, values, and perceptions. For instance, the researcher investigates the phenomena of a few patients with type 2 diabetes mellitus (T2DM) in community dwellings who successfully achieved optimal glycemic control.

Moreover, a research question arises from the phenomena, such as what factors influence glycemic control or barriers in controlling diabetes as perceived by T2DM patients. Hence, quantitative or qualitative studies will be conducted to answer the research questions (Kanan et al., 2019; Pamungkas et al., 2020). Moreover, the most significant aim of understanding the philosophical approach for nursing scholars is to develop knowledge. In particular, doctoral nursing students must conduct the research using a paradigm, leading to knowledge development (Arpanantikul & Akbar, 2018). However, the massive research publishers in the nursing discipline nowadays bring two sides impact, including pressure for the nurse researcher to find the novelty of the study for their publication and a plethora of poor research articles without significant contribution to new knowledge development (Philip & Hans de, 2018; Rawat & Meena, 2014). As such, a novelty is crucial for nursing publications that must ensure the study's ontology, epistemology, and axiology (Gunawan et al., 2022). Therefore, this paper explores the philosophical

approach to knowledge development in ontological, epistemological, and axiological contexts, particularly for T2DM patients in the community.

All paradigms used in nursing comprise three aspects that need to be considered regarding knowledge development, including the nature of reality (ontology), the source of knowledge (epistemology), and the value of knowledge (axiology). Epistemology is the aspect that focuses on how people recognize and comprehend things and what the requirement is to consider something as knowledge (Chinn, 2018). Verified fundamental knowledge that is valid and reliable in nursing or other related disciplines is used by nurse practitioners to identify phenomena in attaining optimum health status. For instance, uncertainty theory was developed by a nurse, Mischel, who got inspiration from observation of nursing practice related to patient's experience of illness (Chinn, 2018). For ontology, this aspect focuses on how nurses' understanding is reflected in their identity and actions (Chinn, 2018). Understanding ontology could help nurses understand the necessity of integrating theory and practices in nursing. In particular, a researcher must identify the knowledge gap from existing studies related to the phenomena. To illustrate, comprehending Mischel's theory of uncertainty by reading the explanation and reviewing previous research on this theory development might change how nurses perceive themselves and react to the patient's illness experience (Chinn, 2018). Another example is using Orem's Self-Care Theory for identifying nursing diagnoses in older adults with T2DM (Marques et al., 2022). Therefore, from the extensive literature review, nurses would have another perception about specific experiences they did not have before, leading to filling the knowledge or theoretical gap that has not been addressed for accumulated new knowledge.

The majority of knowledge in nursing uses empiricism as a philosophical approach to endeavour science. The reality that could be confirmed through people's senses was the ontological assumption of empiricism (Monti & Tingen, 1999). Moreover, nursing knowledge is acquired through observation of part of phenomena using reduction of theory to describe, predict, and prescribe, leading to validation or disapproval of the approach (Monti & Tingen, 1999). For example, a previous study aimed to examine predictors of quality of life in patients with diabetes (Winahyu et al., 2019). Another study investigated factors influencing self-management in T2DM patients, and the predictors were derived from a combination of three theories (Kanan et al., 2019).

Moreover, quasi-experimental or experimental studies on the effectiveness of nursing procedures on patients' outcomes were mainly chosen for thriving science since the results could be used as a scientific foundation for the profession. Furthermore, the empirical study results are considered reliable data for knowledge construction as valid and reliable instruments measure it. This paradigm believes in a single truth. Consequently, the human mind was not included as a focus of the study since it is too complex to understand by the method that depends only on objectivity and senses. However, some criticism appeared regarding positivism/ empiricism as the sole method for knowledge development. Nursing is demanded to provide bio-psycho-socio-spiritual care, leading to the need for understanding other aspects than physical.

Seeking the truth through knowledge inquiry requires understanding the nature of knowledge, its source, and how to obtain it. Regarding post-positivism, this approach attempts to define, clarify, and forecast the phenomena by utilizing various data types, both sense perception and perception of experience (Jacox et al., 1999). Postpositivism appeared as the criticism of positivists who only believe in quantitative data. For the ontological context, postpositivists believe that the quantitative and qualitative study data could obtain reality due to the chance of bias while pursuing objectivity. Since a holistic view is demanded in nursing, exploring people's perspectives or understanding the phenomena is essential.

Moreover, in terms of axiology, science can be developed by an attempt by the researcher to understand and predict phenomena (Jacox et al., 1999). A debatable method of acquiring knowledge regarded by some postpositivists might come from synthesizing various sources of collected studies, such as meta-analysis (Jacox et al., 1999). To illustrate, doctoral students know the effectiveness of family-oriented programs for diabetes management; thus, the student gathers all previous studies with the same research question and design to calculate their effect size. From this finding, new knowledge is obtained from accumulated results from several studies. In particular, results from a systematic review reported that diabetes self-management effectively improved some biomarkers, such as blood pressure and cholesterol, but not glycemic control, which suggests modifying the intervention in future studies (Diriba et al., 2021). This philosophical approach is considered to be more flexible than empiricism for acquiring knowledge. Moreover, it allows nurse scholars to apply various strategies to tackle multifaceted human phenomena.

The interpretive approach is another valid form of theory construction and science-acquiring methods. This philosophical approach regards mind philosophy, which has contributed substantially less to health care (Jacox et al., 1999). Moreover, the ontological assumption for this approach is the relativism of reality. Creating narrative and insight through valuing various personal meanings to achieve collective themes are interpretive aims. Thus, the epistemological context of this approach is by collecting data from participants through interaction between participant and researcher to construct the meaning or truth (Jacox et al., 1999). Truth or knowledge is generated by qualitative data collected by the researcher by depth-interviewing the participants. Moreover, every experience, meaning, and life of people has significant value in the research that contributes to knowledge development.

Furthermore, human science is one of the paradigms within the interpretive philosophical approach. According to Mali in 1992, as cited in Cody and Mitchell (2002), Vico was the first to clarify the distinction between human science and natural science, assuming that truth comes from the human beings themselves through society, culture, and history, which the reality lives in daily life events (Cody & Mitchell, 2002). Concerning ontology, human science recognizes humans as integrated whole in continuous interdependence with their changing, momentary, historical, and cultural domains (Cody & Mitchell, 2002). Moreover, reality is a complicated union regarding people's experiences, thoughts, emotions, and inclinations (Cody & Mitchell, 2002). In addition, the epistemological context for this paradigm is the person's participation in generating knowledge together with the researcher by respecting the lived experience (Cody & Mitchell, 2002). In particular, an interpretive approach could be used to understand the high number of uncontrolled T2DM in Indonesia despite the treatment utilized. A research question may arise: how do Indonesian T2DM patients learn about the disease (Ligita et al., 2019)? In the context of Indonesia culture, the family is the primary caregiver for a family member with a chronic disease such as DM, and a researcher may ask how the family functions to support diabetes care (Pamungkas et al., 2021)

Despite its value-laden advantages for nursing by looking into another aspect of people's health decisions in detail, it seems that nurse scholars reluctantly use this paradigm to acquire nursing science. It showed that the nursing discipline might need more awareness to be at the forefront of improving nursing healthcare through understanding the human science perspective. To illustrate, medicine had a noteworthy study to correlate a person's life stories into medical science by incorporating poetry reading, storytelling, and arts performing to be compatible with the life experience of people, leading to eHealth program development (Bauer, 2001 as cited in Cody and Mitchell (2002)). It showed that the paradigm recognized the value precisely measured, then later contributed further to healthcare. Therefore, adding more studies using this paradigm for knowledge construction is significant since it enhances nurses' capacity to respect people's value in providing appropriate nursing care. Critical theory is an approach concerned with critiquing society to fulfil the needs of human beings. This approach uses a universal viewpoint that reveals social, historical, and ideological structure and strengths in which the potential of humans is bounded, and injustice and social inequity are created (Chinn, 2018). It emerged as the belief that positivism and interpretive paradigms have weaknesses in developing nursing knowledge. For epistemology, the nature of knowledge based on critical theory is that knowledge is obtained from the experience of life and the correlation of social context, which constructs the experience (Chinn, 2018). The axiology of this theory is value-laden since it allows intersubjectivity to understand social situations (Kim & Holter, 1995). Moreover, this philosophical approach merged the postpositivist and humanistic approaches to address experiences affected by sociopolitical and cultural conditions (Jacox et al., 1999). Critical theory also did not leave behind the need for objectivity to see the situation while respecting the meaning of the context.

Moreover, another pattern of knowing might be added to the critical theory approach to knowledge development. Practices in learning in nursing knowledge comprised empirics, ethics, personal knowledge, and aesthetics (Carper, 1999). However, there were aspirations and demands for a broader understanding of social influence in nursing phenomena that the existing pattern of knowing could not answer. Thus, another known practice, emancipatory learning, was found to obtain knowledge by depicting the social problem related to human actions and statements, which could unfairly affect other people's lives (Chinn, 2018). Moreover, this paradigm believes that change is a requisite for individual and organizational contexts (Jacox et al., 1999). People can achieve this change after realizing that their needs or social circumstances are not being met as they desire.

There are some assumptions underpinning the emancipatory as one of the patterns of knowing. The first assumption is to focus on humans with their value-laden and cultural perceptions that could construct knowledge (Chinn, 2018). It means that humans design reality or truth and can change it under different circumstances. Moreover,

developing a research question is based on people's values, aims, and entrust of curiosities. Privileges in academics and economics are needed for people who would like to conduct research, and their position in society could influence knowledge development (Chinn, 2018). This means that every piece of knowledge we have in our community today comes from previous studies conducted by various researchers who attached diverse social attributions; thus, this knowledge might be influenced by a particular social context that could be inappropriate for other people's situations. Another assumption stated that the meaning of power could be attained from language, leading to shaping the attitude and perception of people (Chinn, 2018). The last, social oppression is not natural or static since humans are the ones who constructed and changed the social structures. Social structures evolve and change over time, shaped by emerging contexts and circumstances (Chinn, 2018).

Many previous studies have discussed the importance of feminist theory in constructing nursing knowledge. For epistemology, this theory views how gender could affect the history of knowledge. It aims to reveal inequality, such as class, sexuality, and religion. Moreover, feminism focuses on increasing awareness of people related to some problems, including the domination of men over women, ideology distorting set up by the men, and women who lose their lives and are filled up with other things (Rich, 2021). Thus, the shifting of the way to think and act among women was beginning. Nowadays, feminist theory is focused not only on women but also on women and men who are regarded as marginalized groups to attain societal equality. This approach tries to analyze social situations that might have bias and not satisfactorily solved by another scientific method. To illustrate, most scientists were male at the beginning of knowledge development. Even though science should be nonsexist, the beliefs, perceptions, and social context of people researching to create science might be influenced. For instance, the impact of sexual dysfunction among women with chronic disease should be addressed to identify interventions for health promotion (Karimi-Valoujajei et al., 2020). Moreover, in the context of diabetes, a study underpinned by feminist theory could explore how gender, race, and romantic relationships affect the diabetes health of White and Black Patients with T2DM (Naqvi et al., 2020). Thus, it is necessary to have another approach to solving social problems related to marginalized groups.

An exemplar of Philosophy Nursing for Underpinning Future Studies in Community-Dwelling Patients with Type 2 Diabetes Mellitus

A philosophical aspect is essential as an underlying research question since nursing research will be helpful for enhancement in health care and nursing education by thriving knowledge through research. For instance, a nurse researcher's area of interest for future study is self-management among patients with type 2 diabetes mellitus (T2DM). According to previous studies, patients with diabetes with good self-management and family support would get better health outcomes (Subrata et al., 2020). Since self-management is concerned with self-capacity, it is the trend and reasonable that most of the studies have been focused on a patient-centred approach. Moreover, most systems to deliver self-management programs to improve health behavior and health outcomes were given by individual-based, group-based, and community-based intervention (Han et al., 2019; Kim et al., 2015; Swavely et al., 2014). A previous systematic review indicated that despite the usefulness for diabetes management, most of the family approach was applied in patients with type 1 diabetes (Kodama et al., 2019). However, the limited study focused on the family-based approach to delivering self-management programs for T2DM patients. The view of the families constructs the intervention in providing care for the members.

According to Indonesian culture, the family is considered an institution that people with illness mainly rely on before and after they seek health care from a formal health care provider. Each family member believes they are responsible for caring for their beloved one. Moreover, cultural sensitivity needs to be considered when conducting research; thus, the knowledge gained from its findings could be effectively applied in an Indonesian setting. Therefore, the postpositivist philosophical approach seems promising for future research, which could answer the effectiveness of a culturally specific Diabetes Self-Management Education (DSME) program that focuses on family-based intervention. Regarding the postpositivist approach, knowledge could be obtained through a qualitative and quantitative study. It is necessary to develop interventions that fit with Indonesian culture by getting insight from the point of view of Indonesian family caregivers and patients. Since T2DM patients and their families might have different perceptions regarding how patients perceive the disease, how they view their needs, and how they define the practical method of diabetes care, the social context attached to them might contribute to their health decisions and behaviour that need to be considered while planning on developing this program. Group discussion could be an initial identification of the appropriateness of standardized DSME programs found in previous studies worldwide. Therefore,

future studies could conduct group discussions with the family caregiver and the patients before intervention development. Understanding the challenge of family caregivers in providing care and how T2DM patients perceive their condition would benefit from developing a program that fits with Indonesian culture.

Concerning the quantitative data, future studies could examine the effectiveness of a culturally specific and family-based intervention program for T2DM patients in improving their health outcomes. It is necessary to plan the intervention program underpinned by using nursing theory as a conceptual framework for choosing study variables and recruiting randomized sampling for the generalizability of the results. Moreover, future studies need to ensure the representativeness of patients and their caregivers regarding their social factors, such as gender, education, and health literacy, as social determinants of health that may influence health behaviour. Thus, considering that aspect, future studies may be considered sound research contributing to developing nursing science knowledge.

In conclusion, a philosophical approach is fundamental to constructing the way to do the research. Each paradigm within the philosophical method has strengths and limitations, leading to an ability to answer the phenomena of interest. Hence, considering those aspects will help nurse researchers conduct sound research. Then, the findings could be evidence-based for nurse practitioners to improve the quality of nursing care. As the nursing discipline respects the values of caring and holistic care, it might be encouraging to use the postpositivist approach to understand health phenomena in the nursing area. Furthermore, it is noteworthy to ensure novel research for knowledge development through understanding the study's ontology, epistemology, and axiology, addressing the gap that has not been answered or studied in nursing science.

Author's declaration

The authors made substantial contributions to the conception and design of the study and took responsibility for data analysis, interpretation, and discussion of results. For manuscript preparation, all the authors read and approved the final version of the paper.

Funding

None declared.

Availability of data and materials

All data are available from the authors.

Competing interests

The authors declare no competing interest.

Acknowledgements

The author would like to thank the Faculty of Medicine Ramathibodi Hospital and the Faculty of Nursing, Mahidol University, for their outstanding contribution to my PhD study.

References

- Arpanantikul, M., & Akbar, A. (2018). Nursing Science Development for Nursing Practice: a Philosophical Perspective. *International Journal of Nursing and Midwifery Science*, 2(03), 289-295. <https://doi.org/10.29082/IJNMS/2018/Vol2.Iss03.182>
- Cambridge Dictionary. (2022). Paradigm. In Cambridge Dictionary. <https://dictionary.cambridge.org/>
- Carper, B. A. (1999). Fundamental patterns of knowing in nursing. Perspectives on philosophy of science in nursing: an historical and contemporary anthology. Philadelphia: Lippincott, 12-20.
- Chinn, P. L. (2018). Critical theory and emancipatory knowing. In B. J. B., & R. K. L. (Eds.), *Philosophies and theories for advanced nursing practice* (3 ed., pp. 143-161).
- Cody, W. K., & Mitchell, G. J. (2002). Nursing knowledge and human science revisited: practical and political considerations. *Nurs Sci Q*, 15(1), 4-13. <https://doi.org/10.1177/08943180222108705>
- Diriba, D. C., Leung, D. Y. P., & Suen, L. K. P. (2021). The effects of diabetes self-management interventions on physiological outcomes in people living with diabetes in Africa: A systematic review and meta-analysis. *Diabetic Medicine*, 38(5), e14501. <https://doi.org/https://doi.org/10.1111/dme.14501>
- Gunawan, J., Aunguroch, Y., Fisher, M. L., & Marzilli, C. (2022). Novelty: Nursing scholars' guide for successful

- publication. *Belitung Nursing Journal*, 8(5), 378-380. <https://doi.org/10.33546/bnj.2367>
- Han, H.-R., Nkimbeng, M., Ajomagberin, O., Grunstra, K., Sharps, P., Renda, S., & Maruthur, N. (2019). Health literacy enhanced intervention for inner-city African Americans with uncontrolled diabetes: a pilot study [Article]. *Pilot & Feasibility Studies*, 5(1), N.PAG-N.PAG. <https://doi.org/10.1186/s40814-019-0484-8>
- Jacox, A., Suppe, F., Campbell, J., & Stashinko, E. (1999). *Handbook of Clinical Nursing Research*. In Ada Sue Hinshaw, Suzanne L. Feetham, & J. L. F. Shaver (Eds.). SAGE Publications, Inc. <https://doi.org/10.4135/9781412991452>
- Kanan, P., Piaseu, N., Malathum, P., & Belza, B. (2019). Predictors of Diabetes Self-Management in Older Adults with Poorly Controlled Type 2 Diabetes Mellitus. *Pacific Rim International Journal of Nursing Research*, 23(4), 357-367. <https://ejournal.mahidol.ac.th/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ccm&AN=138554427&site=ehost-live>
- Karimi-Valoujaei, S., Kashi, Z., Yousefi, S.-S., Nia, H. S., & Khani, S. (2020). Non-pharmacological interventions to promote sexual function in women with Type 2 diabetes. *Journal of Nursing and Midwifery Sciences*, 7(4), 281.
- Kim, H. S., & Holter, I. M. (1995). Critical theory for science of nursing practice. In *search of nursing science*, 205-219.
- Kim, M. T., Kim, K. B., Huh, B., Nguyen, T., Han, H. R., Bone, L. R., & Levine, D. (2015). The Effect of a Community-Based Self-Help Intervention: Korean Americans With Type 2 Diabetes. *Am J Prev Med*, 49(5), 726-737. <https://doi.org/10.1016/j.amepre.2015.04.033>
- Kodama, S., Morikawa, S., Horikawa, C., Ishii, D., Fujihara, K., Yamamoto, M., Osawa, T., Kitazawa, M., Yamada, T., Kato, K., Tanaka, S., & Sone, H. (2019). Effect of family-oriented diabetes programs on glycemic control: A meta-analysis. *Fam Pract*, 36(4), 387-394. <https://doi.org/10.1093/fampra/cmz112>
- Ligita, T., Wicking, K., Francis, K., Harvey, N., & Nurjannah, I. (2019). How people living with diabetes in Indonesia learn about their disease: A grounded theory study. *PLOS ONE*, 14(2), e0212019. <https://doi.org/10.1371/journal.pone.0212019>
- Marques, F. R. D. M., Charlo, P. B., Pires, G. A. R., Radovanovic, C. A. T., Carreira, L., & Salci, M. A. (2022). Nursing diagnoses in elderly people with diabetes mellitus according to Orem's Self-Care Theory. *Revista Brasileira de Enfermagem*, 75
- Monti, E. J., & Tinggen, M. S. (1999). Multiple paradigms of nursing science. *ANS Adv Nurs Sci*, 21(4), 64-80. <https://doi.org/10.1097/00012272-199906000-00010>
- Naqvi, J. B., Helgeson, V. S., Gary-Webb, T. L., Korytkowski, M. T., & Seltman, H. J. (2020). Sex, race, and the role of relationships in diabetes health: intersectionality matters. *Journal of behavioral medicine*, 43(1), 69-79. <https://doi.org/10.1007/s10865-019-00057-w>
- Pamungkas, R. A., Chamroonsawasdi, K., & Usman, A. M. (2021). Unmet basic needs and family functions gaps in diabetes management practice among Indonesian communities with uncontrolled type 2 diabetes: A qualitative study. *Malaysian family physician : the official journal of the Academy of Family Physicians of Malaysia*, 16(3), 23-35. Retrieved 2021/11//, from <http://europepmc.org/abstract/MED/34938390>
- Pamungkas, R. A., Chamroonsawasdi, K., Vatanasomboon, P., & Charupoonphol, P. (2020). Barriers to Effective Diabetes Mellitus Self-Management (DMSM) Practice for Glycemic Uncontrolled Type 2 Diabetes Mellitus (T2DM): A Socio Cultural Context of Indonesian Communities in West Sulawesi. *European Journal of Investigation in Health, Psychology and Education*, 10(1), 250-261
- Philip, G. A., & Hans de, W. (2018). Too Much Academic Research Is Being Published. *International Higher Education*, 0(96). <https://doi.org/10.6017/ihe.2019.96.10767>
- Rawat, S., & Meena, S. (2014). Publish or perish: Where are we heading? *Journal of research in medical sciences : the official journal of Isfahan University of Medical Sciences*, 19(2), 87-89. <https://pubmed.ncbi.nlm.nih.gov/24778659>
- Rich, A. (2021). *Of woman born: Motherhood as experience and institution*. WW Norton & Company.
- Subrata, S. A., Phuphaibul, R., Grey, M., Siripitayakunkit, A., & Piaseu, N. (2020). Improving clinical outcomes of diabetic foot ulcers by the 3-month self- and family management support programs in Indonesia: A randomized controlled trial study. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, 14(5), 857-863. <https://doi.org/https://doi.org/10.1016/j.dsx.2020.05.028>
- Swavely, D., Vorderstrasse, A., Maldonado, E., Eid, S., & Etchason, J. (2014). Implementation and Evaluation of a Low Health Literacy and Culturally Sensitive Diabetes Education Program. *Journal for Healthcare Quality: Promoting Excellence in Healthcare*, 36(6), 16-23. <https://doi.org/10.1111/jhq.12021>
- Winahyu, K. M., Anggita, R., & Widagdo, G. (2019). Factors Predicting Quality of Life among Patients with Type 2

Diabetes Mellitus in Primary Health Center in Tangerang, Indonesia. Conference, 8. The 4th International Conference on Nursing (ICON), Universitas Brawijaya.