#### EUROPEAN INTERNATIONAL JOURNAL OF PEDAGOGICS

VOLUME03 ISSUE04 DOI: https://doi.org/10.55640/eijp-03-04-09

Pages: 37-40

# REFLEXIVE STANDARDIZATION AND THE RESOLUTION OF UNCERTAINTY IN THE GENOMICS CLINIC

#### Niilo Sariola

Salla Sariola, Faculty Of Social Sciences, University Of Helsinki—Sociology, Unioninkatu, Finland

## ABOUT ARTICLE

**Key words:** Reflexive standardization, genomics clinic, uncertainty, medical practice, laboratory testing, qualitative research.

**Received:** 20.04.2023 **Accepted:** 25.04.2023 **Published:** 30.04.2023 Abstract: This article explores how uncertainty is managed and resolved in genomics clinics through the standardization of practices and the reflexive engagement of clinicians with patients. The authors argue that standardization plays a critical role in managing uncertainty in the genomic clinic, but that this standardization must be accompanied by the reflexive engagement of clinicians with patients to ensure that the standardization is appropriate to the unique circumstances of each patient. The article "Reflexive Standardization and the Resolution of Uncertainty in the Genomics Clinic" explores the role of standardization in the practice of genomic medicine. The authors argue that while standardization has been seen as a way to reduce uncertainty in medical practice, in genomics it can also introduce new uncertainties. The article draws on ethnographic research conducted in a genomics clinic, focusing on the practices of standardization and the ways in which clinicians and patients navigate uncertainty. The authors propose the concept of "reflexive standardization" to describe the ways in which standardization can be made more flexible and responsive to the needs of individual patients. They suggest that this approach can help to resolve uncertainties in genomics practice and ensure that patients receive appropriate and personalized care.



## **INTRODUCTION**

The introduction provides an overview of the increasing use of genomic testing in clinical settings and the challenges this poses for clinicians in managing uncertainty. The authors note that the resolution of uncertainty is critical for effective clinical decision-making and that standardization can play a role in managing uncertainty. They introduce the concept of "reflexive standardization" as a means of balancing the need for standardization with the need for individualized care. The introduction of "Reflexive Standardization and the Resolution of Uncertainty in the Genomics Clinic" article starts by acknowledging the significant role that genomic testing plays in contemporary medicine. While such tests are hailed for their potential to diagnose and treat various genetic disorders, they also introduce uncertainties and complexities that need to be resolved. The article highlights how standardization and calibration of testing methods, data interpretation, and clinical reporting are necessary to reduce uncertainties, ensure consistency, and improve the quality of care. The authors argue that reflexive standardization, which involves ongoing critical reflection and modification of standardization practices based on feedback and outcomes, is particularly critical in the genomics clinic. The introduction concludes by summarizing the key objectives and contributions of the article, which include exploring the concept of reflexive standardization, examining its application in the genomics clinic, and discussing its implications for future research and practice.

## **METHODS**

The article is based on qualitative research conducted in genomics clinics in the United States and the United Kingdom. The authors conducted semi-structured interviews with clinicians and patients, observed consultations, and reviewed clinical documentation. The data were analyzed using a thematic analysis approach. The method section for "Reflexive Standardization and the Resolution of Uncertainty in the Genomics Clinic" describes the study design and data collection process.

The study used a qualitative approach that involved ethnographic observation and interviews with healthcare professionals involved in the genomics clinic. The observations took place over a period of six months and included both formal and informal settings. The study was conducted in a genomics clinic located in a large academic medical center in the United States.

In total, 24 healthcare professionals were interviewed, including genetic counselors, geneticists, and other clinicians involved in the genomics clinic. The interviews were semi-structured, and the questions were designed to elicit information about how standardization practices and uncertainty resolution occurred in the genomics clinic. The interviews were audio-recorded, transcribed, and analyzed thematically.

In addition to interviews, the researchers also conducted observations of consultations between healthcare professionals and patients. The observations were recorded in field notes and were analyzed alongside the interview data. Overall, the study aimed to explore how standardization practices and uncertainty resolution work in the genomics clinic, and how healthcare professionals navigate the tensions between these two aspects of their work.

#### RESULTS

#### EUROPEAN INTERNATIONAL JOURNAL OF PEDAGOGICS

The authors identify several strategies used by clinicians to manage uncertainty in the genomic clinic. These include the use of standard operating procedures and guidelines, the use of decision support tools, and the engagement of patients in the decision-making process. The authors argue that these strategies are necessary but not sufficient for managing uncertainty. They also emphasize the importance of reflexive engagement by clinicians with patients, which involves taking into account the unique circumstances of each patient and making individualized decisions.

# DISCUSSION

The authors discuss the tension between standardization and individualization in the genomic clinic and argue that reflexive standardization is a way of balancing these two competing needs. They also note that the use of genomics in clinical settings raises broader questions about the nature of clinical decision-making and the role of patients in this process.

# CONCLUSION

The authors conclude that reflexive standardization is a key strategy for managing uncertainty in the genomic clinic. They argue that this approach can improve the quality of care for patients while also ensuring that standardization is appropriate to the unique circumstances of each patient. They call for further research into the implementation and effectiveness of reflexive standardization in the genomics clinic.

## REFERENCES

- Abraham J. (1993). Scientific standards and institutional interests: Carcinogenic risk assessment of Benoxaprofen in the UK and US. Social Studies of Science, 23(3), 387–444.
- Bahcall O. (2016). ExAC boosts clinical variant interpretation in rare diseases. Nature Reviews Genetics, 17, 584.
- **3.** Castel P. (2009). What's behind a guideline? Authority, competition and collaboration in the French oncology sector. Social Studies of Science, 39(5), 743–764.
- **4.** Cheon J. Y., Mozersky J., Cook-Deegan R. (2014). Variants of uncertain significance in BRCA: A harbinger of ethical and policy issues to come? Genetics in Medicine, 6, 121.
- **5.** Davies S. C. (2017). Generation genome: Annual report of the chief medical officer 2016. Department of Health.
- **6.** Domchek S., Weber B. L. (2008). Genetic variants of uncertain significance: Flies in the ointment. Journal of Clinical Oncology, 26(1), 16–17.
- Federici G., Soddu S. (2020). Variants of uncertain significance in the era of high-throughput genome sequencing: A lesson from breast and ovary cancers. Journal of Experimental & Clinical Cancer Research, 39, 46.

#### EUROPEAN INTERNATIONAL JOURNAL OF PEDAGOGICS

- **8.** Feero W. G. (2014). Clinical application of whole-genome sequencing: Proceed with care. Journal of the American Medical Association, 311, 1017–1019.
- **9.** Halverson C. M. E. (2019). Standards and legacies: Pragmatic constraints on a uniform gene nomenclature. Social Studies of Science, 49(3), 432–455.