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Oncology Nursing Research and Big Data: Condition of the Science

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Introduction

The conceptualization, definition, and application of big data in research have changed as a result of technological advancements. The three, which were included in an early definition of big data, were: high-volume, high-velocity, or high-variety information assets necessitate innovative, cost-effective methods of processing information to improve insight, decision making, and process automation. Volume is a large quantity of data a high-frequency stream of incoming data is referred to as velocity. Likewise, the broad range of data sources or types that necessitate distinct syntactic formats is referred to as variety. Extra Versus that were added over the long haul incorporate inconstancy, veracity and worth. Enormous information in medical services envelops huge sums and different kinds of information from the fast and expanded digitization of individual patient data. Data can be obtained from internal or external sources, including clinical and biological data from electronic health records or research public or government records or financial records (e.g., insurance or payor).

Description

In addition, Patient-Generated Health Data (PGHD) is included in big data. The use of big data to improve health outcomes necessitates the cost-effective collection of information from a variety of sources, the conversion Health-related data are defined as health-related data including health history, symptoms, biometric data, treatment history, lifestyle choices, and other information created, recorded, or gathered by or from patients to help address a health concern. PGHD are also known as health-related data. The use of high-volume datasets in nursing research is well established. For decades, nurse scientists have led analyses of data collected as part of routine health care and administration. Social media can be a complementary source of health-related data and may be used for epidemiological surveillance or control. The use of high-volume datasets in nursing research is well established. A few milestone nursing studies have utilized clinical and managerial cases information to illuminate safe staffing ratios and ways to deal with pressure ulcer and fall risk assessment. Utilizing regularly gathered information offers an option in contrast to the assortment of enormous amounts of information straightforwardly from research members, which might force a weight on certain people with wellbeing impairment. When huge datasets incorporate medical attendant delicate pointers examinations might give proof to the benefit of nursing care and its relationship with wellbeing outcomes [1,2].

Throughout the long term, progresses in figuring power and computational strategies (see Papachristou et al in this Large Information Exceptional Issue) have extended the potential for high-speed and high-assortment information to definitively illuminate patient care. Oncology medical caretakers tailor their mediations to represent the organic, social, social, and natural factors that might influence an individual's prosperity. This patient-centered approach could be informed by data with a lot of variation. Large datasets consisting of information from a variety of sources can assist oncology nurse scientists in identifying novel biological, psychosocial, or environmental factors that predict or contribute to disease burden. For instance, big data frequently underpins precision health initiatives that aim to provide health care that is optimized for a person's unique genetic or genomic composition, lifestyle influences, and the context in which they live. By identifying complex combinations of factors that predict adverse health outcomes, big data analyses may also aid in clinical decision-making. In turn, nurses may be able to identify patients who might benefit from proactive interventions thanks to these analyses [3].

The authors want to talk about some of the most common sources of big data that are available to oncology nurse researchers, as well as access considerations for these data sources; and provide examples of oncology nurse scientist big data research. In addition, the authors offer suggestions for future research as well as important ethical considerations that must be taken into account when gathering, utilizing, and reporting the results of big data analyses. The EHR embodies huge information. It has a lot of clinically relevant information that is constantly updated and comes from a lot of different places. Clinician notes, vital signs, laboratory reports, telemetry data, imaging data, ICD codes, and PGHD (such as symptom reports) are among the various types of data that can be stored in the EHR. Structured data can be extracted from the EHR by researchers for characterizing study participants. Organized information has a normalized design and is effectively put away in a coordinated data set. Date of cancer diagnosis, blood pressure, and tumor stage are examples of structured data that can be used in oncology nursing research. On the other hand, unstructured data are more challenging to organize and lack a standard format [4,5].

Conclusion

The term big data refers to information with a high volume, velocity, and variety. Oncology nurse scientists have used big data to, among other things, predict chemotherapy toxicity, identify distinct symptom phenotypes, and predict patient outcomes from clinician notes. Big data and advancements in computational methods present new and exciting opportunities to advance oncology nursing science, but accessing and utilizing big data comes with a number of challenges. Important concerns include data security, the privacy of research participants, and the underrepresentation of minorities in big data.

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Conflict of Interest

No potential conflict of interest was reported by the authors.

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