



Ethics in medical education - Recent updates

Barani Karikalan¹, Aida Rezaei²

¹ Department of Pathology, Faculty of Medicine, Mahsa University, Saujana Putra, Selangor, Malaysia

² Department of Early Clinical Exposure & Personal and Professional Development, Faculty of Medicine, Mahsa University, Saujana Putra, Selangor, Malaysia

Abstract

Ethics in medical education plays a crucial role in shaping the future healthcare professionals' understanding of moral values, professional responsibilities, and patient care. The following are some key areas that have been emphasized in recent years:

- 1. Patient-Centered Care:** Medical education has increasingly focused on the importance of patient autonomy, shared decision-making, and cultural sensitivity. Students are encouraged to develop strong communication skills and learn how to navigate ethical dilemmas that arise when patients have different values or preferences.
- 2. Professionalism and Integrity:** There is a growing emphasis on teaching professionalism and integrity throughout medical education. Students are expected to demonstrate honesty, respect, and accountability in their interactions with patients, colleagues, and the healthcare system.
- 3. Informed Consent and Medical Privacy:** Medical ethics education emphasizes the significance of informed consent, ensuring that patients understand the risks, benefits, and alternatives of any proposed treatment or procedure. Students are also taught to respect patient privacy and confidentiality.
- 4. Ethical Research Conduct:** Medical education institutions have been increasingly focusing on research ethics, ensuring that students understand the importance of ethical considerations when conducting research involving human subjects. This includes obtaining informed consent, protecting participant privacy, and conducting studies that are scientifically valid and socially responsible.

It's important to note that medical education and ethical standards can vary across different countries, regions, and institutions. It's always recommended to refer to the specific guidelines and regulations in your local context for the most up-to-date information on medical ethics in education.

Keywords: medical education, medical privacy, increasingly focused

Introduction

Ethics plays a fundamental role in healthcare, guiding medical professionals in delivering patient-centered care. Patient-centered care places the patient at the core of healthcare decisions, considering their preferences, values, and goals [1]. This approach not only improves patient satisfaction but also enhances health outcomes. Ethical principles, such as respect for autonomy, beneficence, and justice, form the foundation of patient-centered care [2]. In this article, we will explore the ethical dimensions of patient-centered care and how they shape the provision of healthcare services.

Professionalism and integrity are essential qualities for healthcare professionals as they navigate the complex and sensitive landscape of patient care. Ethical conduct in healthcare encompasses a range of values and behaviors that demonstrate a commitment to honesty, respect, accountability, and ethical decision-making [3]. This article explores the significance of ethics in professionalism and integrity within the healthcare field and its impact on patients, colleagues, and the broader healthcare system.

Informed consent and medical privacy are critical components of ethical healthcare practice, upholding patients' rights, autonomy, and trust. Informed consent ensures that patients have the necessary information to make autonomous decisions about their medical care, while

medical privacy safeguards the confidentiality of their personal health information [4]. This article explores the ethical dimensions of informed consent and medical privacy, highlighting their importance in promoting patient autonomy, protecting privacy rights, and fostering trust in the patient-provider relationship.

Ethical research conduct is crucial in ensuring the protection of human subjects, maintaining scientific integrity, and upholding the principles of beneficence, respect for autonomy, and justice. Ethical guidelines and regulations provide a framework for researchers to navigate the complex ethical considerations that arise when conducting research involving human participants [5]. This article explores the importance of ethics in research conduct, including informed consent, privacy protection, risk minimization, and scientific transparency.

Patient-Centered Care Respect for Autonomy

Respect for autonomy is a cornerstone of medical ethics, emphasizing a patient's right to make decisions regarding their healthcare. In patient-centered care, healthcare professionals empower patients by providing them with accurate and comprehensive information about their condition, treatment options, and potential risks and benefits. This allows patients to actively participate in

shared decision-making, promoting a collaborative relationship between patients and healthcare providers. Respecting patient autonomy not only upholds their rights but also fosters trust and enhances patient satisfaction ^[6].

Informed Consent

Informed consent is a vital component of patient-centered care and ethical medical practice. It ensures that patients have a clear understanding of their diagnosis, proposed treatments, and any associated risks. Through the process of informed consent, healthcare providers demonstrate respect for patient autonomy and allow patients to make decisions based on their values and goals. Informed consent also promotes transparency and mitigates the potential for conflicts between patients and healthcare professionals.

Beneficence and Non-Maleficence

The ethical principles of beneficence (acting in the patient's best interest) and non-maleficence (doing no harm) guide healthcare professionals in providing patient-centered care. Physicians are tasked with assessing the balance of potential benefits and harms when making treatment decisions. This involves considering not only the medical aspects but also the patient's personal circumstances, values, and preferences ^[7]. By prioritizing the patient's well-being, healthcare providers uphold the principles of beneficence and non-maleficence, ensuring that care is tailored to the individual's needs.

Cultural Sensitivity and Diversity

Patient-centered care also recognizes the importance of cultural sensitivity and diversity in healthcare. Healthcare professionals must be aware of and respect cultural differences in patients' beliefs, values, and healthcare practices ^[8]. Cultural competence allows for effective communication, fosters trust, and ensures that healthcare services are respectful and appropriate for diverse patient populations. By embracing cultural sensitivity, healthcare providers uphold ethical principles by promoting justice and fairness in patient care.

Shared Decision-Making

Shared decision-making is a collaborative process in patient-centered care where healthcare providers and patients work together to make healthcare decisions. It involves exchanging information, discussing treatment options, and considering the patient's values and preferences. Shared decision-making not only respects patient autonomy but also improves patient outcomes, as patients are more likely to adhere to treatment plans when they actively participate in the decision-making process ^[9]. Ethical patient-centered care embraces shared decision-making as it empowers patients, enhances their engagement, and ensures that healthcare decisions align with their individual needs and values.

Confidentiality and Privacy

Respecting patient confidentiality and privacy is essential in patient-centered care ^[10]. Healthcare providers have an ethical obligation to safeguard patient information and maintain strict confidentiality. Protecting patient privacy builds trust and encourages patients to disclose sensitive information necessary for accurate diagnosis and treatment. Ethical considerations surrounding confidentiality include

secure record-keeping systems, limited access to patient data, and obtaining explicit consent before sharing medical information with other healthcare professionals.

Challenges and Ethical Dilemmas

Patient-centered care can present challenges and ethical dilemmas for healthcare providers ^[11]. Conflicts may arise when a patient's preferences and values conflict with medical recommendations or evidence-based practices. In such cases, healthcare professionals must navigate these dilemmas by engaging in open and honest discussions with patients, respecting their autonomy while providing them with the best available information and medical expertise. Ethical decision-making frameworks, such as the principles of respect for autonomy, beneficence, and justice, can guide healthcare providers in navigating these challenges.

Professionalism and Integrity

Professionalism in Patient Care

Professionalism in patient care involves healthcare professionals displaying a high level of competence, responsibility, and ethical behavior in their interactions with patients ^[12]. This includes treating patients with respect, dignity, and empathy, regardless of their background, beliefs, or social status. Professionalism in patient care also entails effective communication, active listening, and maintaining appropriate boundaries to foster trust and ensure patient comfort and confidentiality. Healthcare professionals who prioritize professionalism demonstrate a commitment to patient-centered care and the ethical principles that underpin it.

Ethical Decision-Making

Professionalism and integrity are closely tied to ethical decision-making ^[13]. Healthcare professionals encounter complex ethical dilemmas regularly, such as balancing patient autonomy with the best interests of the patient, allocating limited resources equitably, or managing conflicts of interest. Ethical decision-making frameworks, such as the principles of autonomy, beneficence, non-maleficence, and justice, guide healthcare professionals in resolving these dilemmas.

Maintaining integrity requires healthcare professionals to engage in a thorough analysis of the ethical dimensions of a situation, considering the potential impact on patients, colleagues, and the healthcare system ^[14]. It involves a commitment to transparency, honesty, and accountability when making difficult decisions. Ethical decision-making in professionalism and integrity ensures that patients receive the best possible care while upholding the highest ethical standards.

Honesty and Trustworthiness

One of the key components of professionalism and integrity is honesty. Healthcare professionals must communicate truthfully and transparently with patients, colleagues, and other stakeholders. This includes providing accurate information about diagnoses, treatment options, and potential risks, as well as disclosing any errors or adverse events that may occur. Honesty fosters trust between patients and healthcare professionals, promoting a collaborative and open relationship that enhances patient satisfaction and engagement.

Accountability and Responsibility

Professionalism and integrity encompass a strong sense of accountability and responsibility. Healthcare professionals are accountable for their actions, decisions, and the impact they have on patient care ^[15]. This involves acknowledging and rectifying mistakes, continuously improving one's knowledge and skills, and seeking opportunities for professional growth. Taking responsibility for one's actions contributes to a culture of integrity, transparency, and learning within the healthcare system.

Interprofessional Collaboration

Ethical professionalism also extends to interactions with colleagues and other healthcare professionals. Healthcare professionals are part of a multidisciplinary team, and effective collaboration is essential for optimal patient care. Professionalism in this context involves respecting and valuing the contributions of others, promoting open and constructive communication, and working together to achieve common goals. Ethical behavior within interprofessional collaboration ensures that the patient's best interests remain the central focus ^[16].

Ethical Challenges and Dilemmas

Professionalism and integrity in healthcare can face challenges and ethical dilemmas ^[17]. Conflicts may arise when personal values and beliefs clash with professional obligations, or when external pressures, such as financial incentives or institutional policies, compromise ethical decision-making. Healthcare professionals must navigate these challenges by maintaining their commitment to ethical principles, seeking guidance from professional codes of conduct and ethics committees, and engaging in open dialogue with colleagues to find ethical solutions.

Informed Consent and Medical Privacy

Informed Consent

Informed consent is a cornerstone of ethical medical practice, ensuring that patients have the right to make informed decisions about their healthcare ^[18]. It involves providing patients with relevant information about their medical condition, proposed treatments, potential risks and benefits, and any reasonable alternatives. By obtaining informed consent, healthcare professionals respect and promote patient autonomy, allowing individuals to actively participate in decisions that affect their health and well-being.

Respecting patient autonomy through informed consent involves effective communication, ensuring that patients understand the information provided, and have the opportunity to ask questions and clarify doubts ^[19]. This process should be free from coercion or undue influence, empowering patients to make choices that align with their values and preferences. Ethical healthcare providers prioritize informed consent as it promotes patient empowerment, fosters a collaborative patient-provider relationship, and ensures respect for patient autonomy.

Challenges in Informed Consent

Informed consent can present challenges in certain situations, such as emergencies or cases involving patients with limited decision-making capacity ^[20]. Healthcare professionals must navigate these challenges while upholding ethical principles. In emergency situations where

immediate intervention is required to save a patient's life, informed consent may not be feasible. In such cases, healthcare providers must rely on the concept of presumed consent or act in the patient's best interest, as guided by their professional judgment and ethical codes.

For patients with limited decision-making capacity, healthcare professionals must involve surrogate decision-makers, such as family members or legal guardians, to ensure that decisions are made in the patient's best interest. The ethical principle of beneficence, acting in the patient's best interest, guides healthcare providers in these scenarios.

Medical Privacy and Confidentiality

Medical privacy encompasses the protection of patients' personal health information, including their diagnoses, treatment plans, and sensitive medical history. Respecting medical privacy is crucial to maintaining patient trust, preserving confidentiality, and upholding ethical standards. Healthcare professionals have an ethical duty to safeguard patient privacy and ensure that personal health information is not disclosed without proper authorization.

Confidentiality is particularly important in maintaining open and honest communication between patients and healthcare providers. Patients must feel comfortable sharing sensitive information, knowing that their privacy will be protected ^[21]. Breaches of confidentiality can have severe consequences, including damage to the patient-provider relationship, compromised trust, and potential harm to the patient's well-being.

Ethical guidelines and legal frameworks, such as the Health Insurance Portability and Accountability Act (HIPAA) in the United States, establish standards for the collection, storage, and sharing of patient information. Healthcare professionals must adhere to these regulations, maintain secure records, and only share patient information on a need-to-know basis. Ethical considerations of medical privacy and confidentiality extend beyond electronic health records to conversations, consultations, and any other means of patient information exchange.

Balancing Privacy and Collaborative Care

While medical privacy is crucial, it is essential to strike a balance between confidentiality and collaborative care. In certain situations, sharing relevant patient information among healthcare providers involved in the patient's care is necessary for effective coordination and continuity of treatment. Ethical considerations dictate that patient information should only be shared on a need-to-know basis, with proper consent obtained whenever possible. Healthcare professionals must also communicate clearly with patients about the purpose and extent of information sharing, allowing patients to make informed decisions regarding their privacy preferences.

The Role of Technology

In the digital age, the use of technology in healthcare introduces additional ethical considerations regarding informed consent and medical privacy. Electronic health records, telemedicine, and health information exchange systems facilitate the efficient exchange of patient information but also pose risks to privacy and confidentiality ^[22]. Healthcare professionals must remain vigilant in implementing robust security measures, maintaining strict access controls, and using encryption

technologies to safeguard patient data. Patients should be informed about the potential risks and benefits of digital health technologies and have the opportunity to provide informed consent for their use.

Ethical Research Conduct

Informed Consent

Informed consent is a foundational ethical principle in research involving human subjects [23]. It requires researchers to obtain voluntary, informed, and comprehensible consent from individuals who participate in the study. Informed consent involves providing participants with clear and accurate information about the study's purpose, procedures, potential risks and benefits, and their right to withdraw from the study at any time without consequences. Researchers must ensure that participants have the capacity to understand the information provided and make autonomous decisions regarding their participation [24].

In certain circumstances, such as studies involving vulnerable populations or individuals with diminished decision-making capacity, additional safeguards may be necessary. These may include obtaining consent from authorized representatives or seeking independent ethical review and approval. Ethical research conduct upholds the principle of respect for autonomy, allowing individuals to make informed choices about their participation while ensuring their rights, safety, and well-being.

Protection of Privacy and Confidentiality

Ethical research conduct involves protecting the privacy and confidentiality of research participants [25]. Researchers must ensure that participants' personal information and research data are collected, stored, and reported in a manner that maintains confidentiality and respects privacy rights. This includes using secure data storage systems, de-identifying or anonymizing data whenever possible, and limiting access to information to only those who require it for the study.

Respecting privacy and confidentiality builds trust between researchers and participants, ensuring that individuals feel comfortable sharing sensitive information [26]. Ethical guidelines and regulations, such as institutional review board (IRB) oversight and legal requirements like the Health Insurance Portability and Accountability Act (HIPAA), provide frameworks for protecting privacy and confidentiality in research settings.

Minimization of Risks and Maximization of Benefits

Ethical research conduct requires researchers to minimize risks and maximize potential benefits for research participants [27]. Researchers must conduct a thorough risk-benefit analysis to ensure that the potential benefits of the study outweigh any potential harm or discomfort to participants. They must implement appropriate measures to mitigate risks, such as monitoring participants' well-being, providing necessary support, and promptly addressing any adverse events or unanticipated risks that may arise during the study.

Ethical guidelines also emphasize the importance of equitable distribution of the potential benefits of research. Researchers should strive to design studies that contribute to scientific knowledge and have the potential to improve public health or advance medical understanding. Ensuring that research is conducted ethically promotes justice by

preventing exploitation and ensuring fair access to the benefits that may result from research findings.

Scientific Integrity and Transparency

Ethical research conduct involves upholding scientific integrity and promoting transparency in all aspects of the research process [28]. Researchers must adhere to rigorous methodological standards, ensuring the accuracy and reliability of data collection, analysis, and reporting. This includes accurately representing research findings, avoiding bias or manipulation of data, and disclosing conflicts of interest.

Promoting transparency in research conduct involves pre-registering study protocols, registering clinical trials, and sharing research results through publication in peer-reviewed journals or other accessible platforms. Ethical guidelines emphasize the importance of data sharing, promoting scientific collaboration, and allowing independent verification of research findings.

Challenges and Ethical Dilemmas

Ethical research conduct can present challenges and ethical dilemmas for researchers [29]. Balancing the pursuit of scientific knowledge with the protection of human subjects' rights and well-being requires careful consideration and ethical decision-making. Researchers may face dilemmas related to conflicts of interest, participant recruitment and selection, use of placebo controls, and the dissemination of research findings.

Ethical research conduct requires researchers to seek guidance from institutional review boards (IRBs) or research ethics committees when faced with complex ethical issues. These bodies provide oversight, review research protocols, and ensure compliance with ethical guidelines and regulations [30].

Conclusion

Ethics in patient-centered care is crucial for healthcare professionals to provide high-quality, compassionate, and personalized care. Embracing ethical principles, such as respect for autonomy, beneficence, and justice, enables healthcare providers to prioritize the patient's needs, preferences, and values. Patient-centered care not only improves patient outcomes but also strengthens the patient-provider relationship, enhancing trust and satisfaction. By upholding ethical standards, healthcare professionals contribute to a healthcare system that is compassionate, respectful, and centered around the well-being and dignity of the patient.

Ethics in professionalism and integrity form the bedrock of ethical healthcare practice. By upholding these values, healthcare professionals demonstrate a commitment to patient-centered care, ethical decision-making, honesty, accountability, and interprofessional collaboration. Professionalism and integrity build trust and confidence among patients, colleagues, and the broader healthcare system, ultimately leading to improved patient outcomes and the delivery of high-quality care. The continuous cultivation of ethics in professionalism and integrity ensures that healthcare professionals remain ethical stewards in the pursuit of optimal patient care.

Ethics in informed consent and medical privacy are foundational to patient-centered care and the maintenance of trust within the patient-provider relationship. Respecting

patient autonomy through informed consent empowers individuals to make decisions about their healthcare, while protecting medical privacy and maintaining confidentiality ensures the confidentiality of sensitive patient information. Healthcare professionals must navigate the challenges inherent in these ethical considerations, always striving to uphold patient rights, foster open communication, and maintain the highest standards of professionalism and integrity. By prioritizing ethical principles, healthcare providers contribute to a healthcare system that respects patient autonomy, protects privacy, and builds trust between patients and providers.

Ethical research conduct is vital for protecting human subjects, maintaining scientific integrity, and advancing knowledge in a responsible and accountable manner. Researchers must prioritize informed consent, privacy protection, risk minimization, and scientific transparency to ensure the well-being and rights of research participants. By upholding ethical principles, researchers contribute to a culture of trust, integrity, and social responsibility in the scientific community. Ethical research conduct not only protects the welfare of research participants but also ensures the reliability and credibility of scientific discoveries.

References

- Newell S, Jordan Z. The patient experience of patient-centered communication with nurses in the hospital setting: a qualitative systematic review protocol. JBI database of systematic reviews and implementation reports,2015;13(1):76–87. <https://doi.org/10.11124/jbisrir-2015-1072>
- Mentzelopoulos SD, Slowther AM, Fritz Z, Sandroni C, Xanthos T, Callaway C, et al. Ethical challenges in resuscitation. Intensive care medicine,2018;44(6):703–716. <https://doi.org/10.1007/s00134-018-5202-0>
- Bhardwaj A. Medical Professionalism in the Provision of Clinical Care in Healthcare Organizations. J Healthc Leadersh,2022;14:183-189. doi: 10.2147/JHL.S383069. PMID: 36320452; PMCID: PMC9618247.
- Tanya M. Judkins-Cohn, MSN, MEd, RN, Kiersten Kielwasser-Withrow, RNC-OB, MSN, CBE, Melissa Owen, MSN, CCTC, RN, and Jessica Ward, MPH, MSN, CPNP. Care Provider and Researcher. The Journal of Continuing Education in Nursing,2014;45(1):35–42.
- Barrow JM, Brannan GD, Khandhar PB. Research Ethics. [Updated]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023-2022. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK459281/>
- Mattei JF. Respecting l'autonomie de la personne soignée [Respecting the patient's autonomy]. Soins; la revue de reference infirmiere,2018;63(824):25–27. <https://doi.org/10.1016/j.soin.2018.02.004>
- Rose A, Rosewilliam S, Soundy A. Shared decision making within goal setting in rehabilitation settings: A systematic review. Patient education and counseling,2017;100(1):65–75. <https://doi.org/10.1016/j.pec.2016.07.030>
- Derrington SF, Paquette E, Johnson KA. Cross-cultural Interactions and Shared Decision-making. Pediatrics,2018;142(3):S187–S192. <https://doi.org/10.1542/peds.2018-0516J>
- Faiman B, Tariman JD. Shared Decision Making: Improving Patient Outcomes by Understanding the Benefits of and Barriers to Effective Communication. Clinical journal of oncology nursing,2019;23(5):540–542. <https://doi.org/10.1188/19.CJON.540-542>
- Holt K, Caglia JM, Peca E, Sherry JM, Langer A. A call for collaboration on respectful, person-centered health care in family planning and maternal health. Reproductive health,2017;14(1):20. <https://doi.org/10.1186/s12978-017-0280-y>
- Lopez M, Pérez-Villalobos C, Suárez D, Ar AY. The training of a new social-responsible generation of health professionals with a patient-centered vision. Ciencia & saude coletiva,2022;27(8):3043–3051. <https://doi.org/10.1590/1413-81232022278.07392021>
- Lombarts KM, Plochg T, Thompson CA, Arah OA, DUQuE. Project Consortium Measuring professionalism in medicine and nursing: results of a European survey. PloS one,2014;9(5):e97069. <https://doi.org/10.1371/journal.pone.0097069>
- Pellegrino E. D. (1990). The relationship of autonomy and integrity in medical ethics. *Bulletin of the Pan American Health Organization*, 24(4), 361–371.
- Teeri S, Välimäki M, Katajisto J, Leino-Kilpi H. Maintenance of patients' integrity in long-term institutional care. Nursing ethics,2008;15(4):523–535. <https://doi.org/10.1177/0969733008090523>
- Shah HS, Bohlen J. Implicit Bias. In *StatPearls*. StatPearls Publishing, 2023.
- Brashers V, Haizlip J, Owen JA. The ASPIRE Model: Grounding the IPEC core competencies for interprofessional collaborative practice within a foundational framework. Journal of interprofessional care,2020;34(1):128–132. <https://doi.org/10.1080/13561820.2019.1624513>
- Pitacco G, Urli N, Centonze S, Ferrazzano A, Santarossa S, Valentini MG, et al. Questioni etiche emergenti nella pratica clinica: risultati di un'indagine regionale [Emerging ethical issues in clinical practice: a regional survey]. Assistenza infermieristica e ricerca : AIR,2021;40(1):4–19. <https://doi.org/10.1702/3599.35802>
- Giraudeau B, Caille A, Le Gouge A, Ravaut P. Participant informed consent in cluster randomized trials: review. PloS one,2012;7(7):e40436. <https://doi.org/10.1371/journal.pone.0040436>
- Fried E. The therapeutic misconception, beneficence, and respect. Accountability in research,2001;8(4):331–348. <https://doi.org/10.1080/08989620108573984>
- Prachanukool T, Yuksen C, Jintanavasan S, Jenpanitpong C, Watcharakitpaisan S, Kaninworapan P, et al. Decision-Making by Emergency Medicine Personnel in Prehospital Treatment of Patients Receiving Palliative Care: A Questionnaire, Comparative Cohort Study. Advances in medical education and practice,2021;12:1111–1118. <https://doi.org/10.2147/AMEP.S323557>
- Knishkowsky B, Guggenheim N. The ill physician who self-discloses: What do patients think? The European journal of general practice,2022;28(1):244–251. <https://doi.org/10.1080/13814788.2022.2146091>
- Klugman CM, Dunn LB, Schwartz J, Cohen IG. The Ethics of Smart Pills and Self-Acting Devices: Autonomy, Truth-Telling, and Trust at the Dawn of

- Digital Medicine. The American journal of bioethics: AJOB,2018;18(9):38–47.
<https://doi.org/10.1080/15265161.2018.1498933>
23. Adashi EY, Walters LB, Menikoff JA. The Belmont Report at 40: Reckoning With Time. American journal of public health,2018;108(10):1345–1348.
<https://doi.org/10.2105/AJPH.2018.304580>
 24. Purser K, Sullivan K. Capacity assessment and estate planning - the therapeutic importance of the individual. International journal of law and psychiatry,2019;64:88–98. <https://doi.org/10.1016/j.ijlp.2019.02.005>
 25. Adarmouch L, Felaefel M, Wachbroit R, Silverman H. Perspectives regarding privacy in clinical research among research professionals from the Arab region: an exploratory qualitative study. BMC medical ethics,2020;21(1):27. <https://doi.org/10.1186/s12910-020-0456-9>
 26. Holt K, Zavala I, Quintero X, Mendoza D, McCormick MC, Dehlendorf C, *et al.* Women's preferences for contraceptive counseling in Mexico: Results from a focus group study. Reproductive health,2018;15(1):128. <https://doi.org/10.1186/s12978-018-0569-5>
 27. Takashima K, Maru Y, Mori S, Mano H, Noda T, Muto K. Ethical concerns on sharing genomic data including patients' family members. BMC medical ethics,2018;19(1):61. <https://doi.org/10.1186/s12910-018-0310-5>
 28. Kretser A, Murphy D, Bertuzzi S, Abraham T, Allison DB, Boor KJ, *et al.* Scientific Integrity Principles and Best Practices: Recommendations from a Scientific Integrity Consortium. Science and engineering ethics,2019;25(2):327–355.
<https://doi.org/10.1007/s11948-019-00094-3>
 29. Marsh I, Winter R, Marzano L. Representing suicide: Giving voice to a desire to die? Health (London, England),1997;26(1):10–26.
<https://doi.org/10.1177/13634593211046843>
 30. Taljaard M, Hemming K, Shah L, Giraudeau B, Grimshaw JM, Weijer C. Inadequacy of ethical conduct and reporting of stepped wedge cluster randomized trials: Results from a systematic review. Clinical trials (London, England),2017;14(4):333–341.
<https://doi.org/10.1177/1740774517703057>