به نام خدا

Research Integrity

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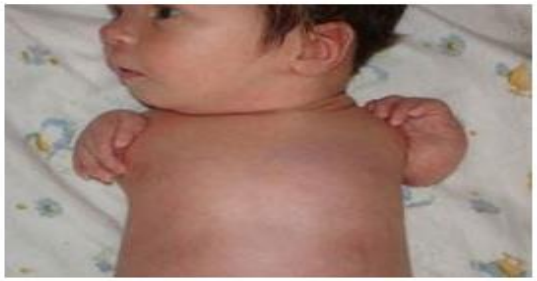
Why Research Ethics Matters?



Thalidomide Study (1961)

- Thalidomide was introduced to the market in the late 1950s and early 1960s by a German pharmaceutical company as a sedative and treatment for morning sickness in pregnant women.
- Over 10,000 children were born with thalidomide-related birth defects including severe birth defects, particularly limb abnormalities , when taken during pregnancy.
- This study highlights the consequences of inadequate drug testing and regulatory oversight.

Why Research Ethics Matters?

- A study conducted to evaluate retracted articles over a 10-year period showed that at least 70,000 people participated in these studies and health interventions were performed on them.

Why Research Ethics Matters?

Joachim Boldt: An author with over two hundred retracted articles

- In 2009, Joachim Boldt conducted a study examining the efficacy and safety of hydroxyethyl starch (HES) as a volume expander in critically ill patients.
- His study lacked proper institutional review board (IRB) approvals and contained fabrication and falsification

Joachim Boldt: An author with over two hundred retracted articles

- Meta-analyses that included Boldt's studies initially suggested no increased risk associated with HES; however, when his data was excluded, subsequent analyses indicated a significant increase in mortality and acute kidney injury linked to HES use.
- This discrepancy highlighted how fraudulent data could mislead clinical practice and potentially harm patients.

Joachim Boldt: An author with over two hundred retracted articles

- By 2018, a total of 96 publications associated with Boldt had been retracted due to issues related to data integrity and ethical violations.
- This included studies that had previously influenced clinical guidelines regarding the use of HES.

New Record of Retractions

Why Research Ethics Matters?

Dr. Andrew Wakefield's MMR Vaccine Study

- Dr. Wakefield falsely claimed a link between the MMR vaccine and autism (published in 1998)
- His study involved 12 children for various developmental disorders. Eight of these children were diagnosed with autism.

Dr. Andrew Wakefield's MMR Vaccine Study

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MMR vaccination and autism

Andrew J Wakefield

Affiliations & Notes Article Info Linked Articles (1)

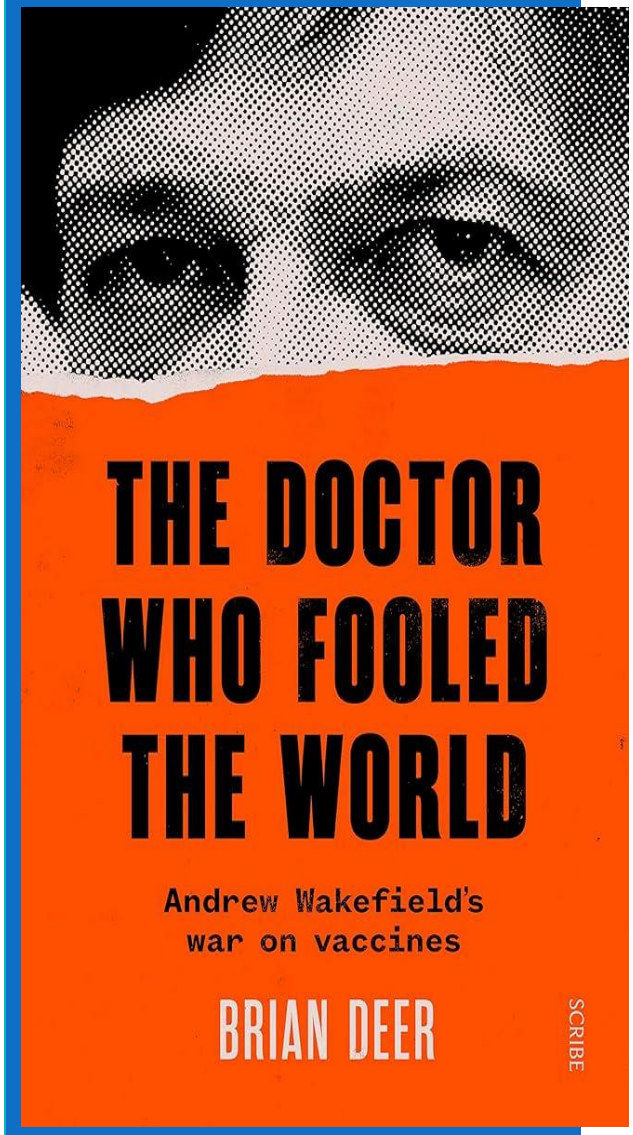
The paper was retracted in 2010 after investigations revealed serious ethical violations, including data manipulation and undisclosed conflicts of interest.

Dr. Andrew Wakefield's MMR Vaccine Study

- Wakefield was found guilty of professional misconduct by the General Medical Council and was struck off the UK medical register.
- Wakefield had undisclosed financial interests, including funding from lawyers involved in lawsuits against vaccine manufacturers.

Dr. Andrew Wakefield's MMR Vaccine Study

- The publication sparked widespread fear about vaccines, leading to a significant decline in vaccination rates in the UK and other countries.
- Measles vaccination coverage fell from 92% in 1995 to 80% in 2004 .This decline contributed to outbreaks of measles and mumps.



Andrew Wakefield had his medical licence revoked in 2010

Fraud Behind the MMR Scare

BMJ Calls Wakefield's Study Linking MMR Vaccine to Autism 'Fraudulent'

In a special **series of articles published in 2011 by *BMJ***, author Brian Deer exposes the data behind claims that launched a worldwide scare over the measles, mumps, and rubella vaccine and revealed how the appearance of a link with autism was manufactured at a London medical school. In an **accompanying editorial**, Fiona Godlee and colleagues say that Andrew Wakefield's article linking the MMR vaccine and autism was based not on bad science but deliberate fraud. In addition, Brian Deer analyzes the similarities between the MMR scare and the **"Piltdown Man" case**.

Why Research Ethics Matters?

The Nuremberg Trials (1946-47)

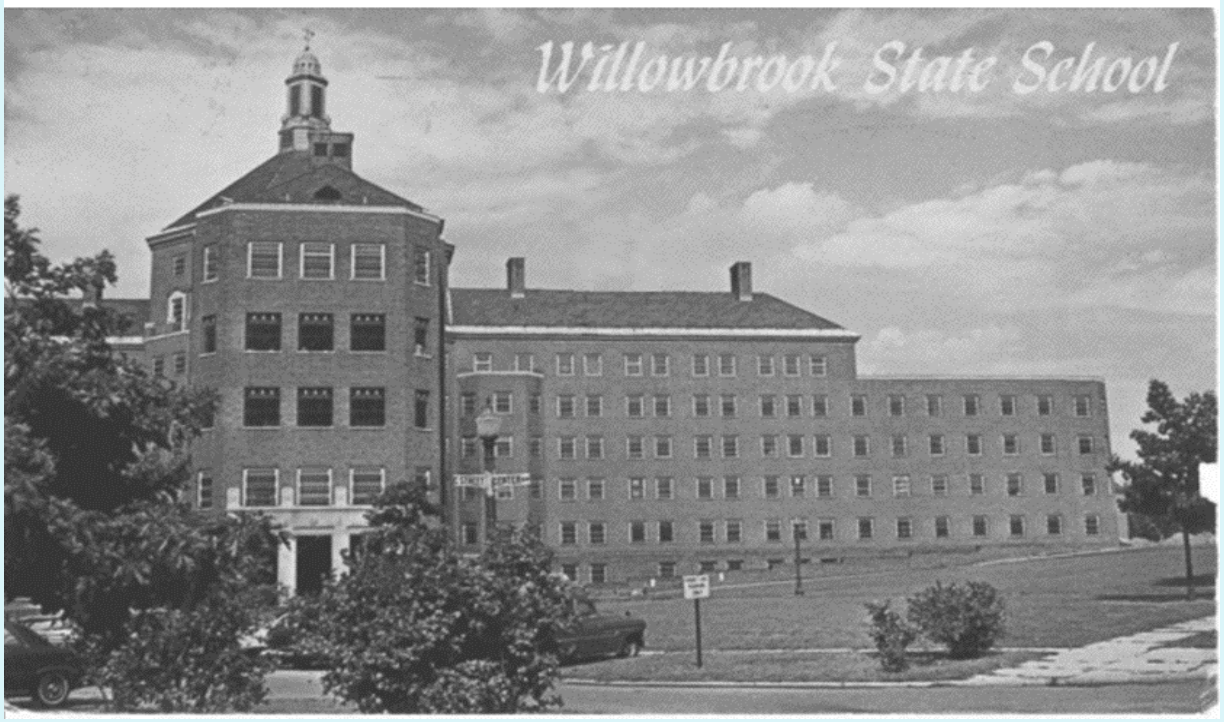
- Their crimes included experiments involving:
  - High altitude/low pressure
  - Freezing
  - Malaria
  - Sea water
  - Mustard gas
  - Twin tests
  - Sterilization

- The Nazi regime exploited human beings by forcing them to participate in research without consent.
- The mortality rate of these war time research studies was typically 25 - 30%.

*A freezing experiment at Dachau concentration camp. Dr. E. Holzlöhner, left, professor of physiology at the Medical School of the University of Kiel, and Dr. Sigmund Rascher, right, observe a victim immersed in ice water. This particular man was a political prisoner. (*Trial Exhibit—Office Chief of Counsel for War Crimes, Nuremberg*)*

Willowbrook State School Study

- The researchers sought to understand the natural history of infectious hepatitis and its transmission among institutionalized children with mental disorders.



کدها و راهنماهای ملی

1. راهنمای عمومی اخلاق در پژوهش‌های علوم پزشکی دارای آزمودنی انسانی در جمهوری اسلامی ایران
2. راهنمای اخلاقی کارآزمایی های بالینی
3. راهنمای اخلاقی پژوهش بر گامت و رویان
4. راهنمای اخلاقی پژوهش بر سلولهای بنیادیو پزشکی بازساختی
5. راهنمای اخلاقی در پژوهشهای ژنتیک پزشکی
6. راهنمای اخلاقی پژوهش بر عضو و بافت انسانی
7. راهنمای اخلاقی پژوهش بر گروههای آسیب پذیر
8. راهنمای اخلاقی پژوهشای علوم پزشکی مرتبط با HIV/AIDS
9. راهنمای کشوری اخلاق در انتشار آثار پژوهشی

Ethical considerations in

A standard Research Road

1. Proposing (Research Problem/ Hypothesis & question formation/Planning method of study)
2. Review & Approval (Scientific Review/Financial Review/Ethical Review)
3. Study Operation (Collecting data/Analyzing data/Interpreting data)
4. Documentation (Writing report/Preparing manuscript/ Submitting manuscript)
5. Publication (Evaluation/Publication/Dissemination)

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Elements of an ethical research proposal

- Research team competency
- Valuable subject
- Valid study
- Informed consent
- Fair subject selection
- Risk-benefit assessment
- Ethical principles
- Religious, legal and cultural standards

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Is Research Team Competent?

- Research team expertise and Qualifications
- Training on Research Ethics
- Cultural Competency
- Conflict of Interest Management
- Interdisciplinary Collaboration
- Ongoing Professional Development
- Regular self-assessment & peer review

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Is the research subject valuable?

- Scientific value : Scientific progression
- Clinical value: Improvement of patients' health or wellbeing
- Social value : Promotion of public health

Is the research subject valuable?

✓ A research is not valuable if:

- It is a copy of previously published work
- It is not transparent and reproducible
- It's results are not Applicable and generalizable
- It lacks Collaboration and Interdisciplinary
- Fails to engage with or build upon existing literature
- Do not contribute new knowledge or insights
- This kind of research is just waste of time, energy, limited recourses and a good example of exploitation

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Is the research study scientifically valid?

- There should be a significant question (equipoise)
- The research subject should directly align with the research question
- Methodology should be valid and feasible
- Study conduct should be based on approved proposal

Is the research subject scientifically valid?

Non-scientific research

Unreliable results

Wasted resources in addition to endangering subjects

Unethical

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Have you obtained informed consent from participants?

- Autonomy = Right to self determination
- Respect to participants dignity and autonomy (Informed consent, Confidentiality, Privacy, …..)
- Informed consent is the process by which the researcher discloses appropriate information to a competent person so that he/she may make a voluntary choice to accept or refuse participation.

Have you obtained informed consent from participants?

1- Threshold elements (pre-conditions)

- Competence
- Voluntariness

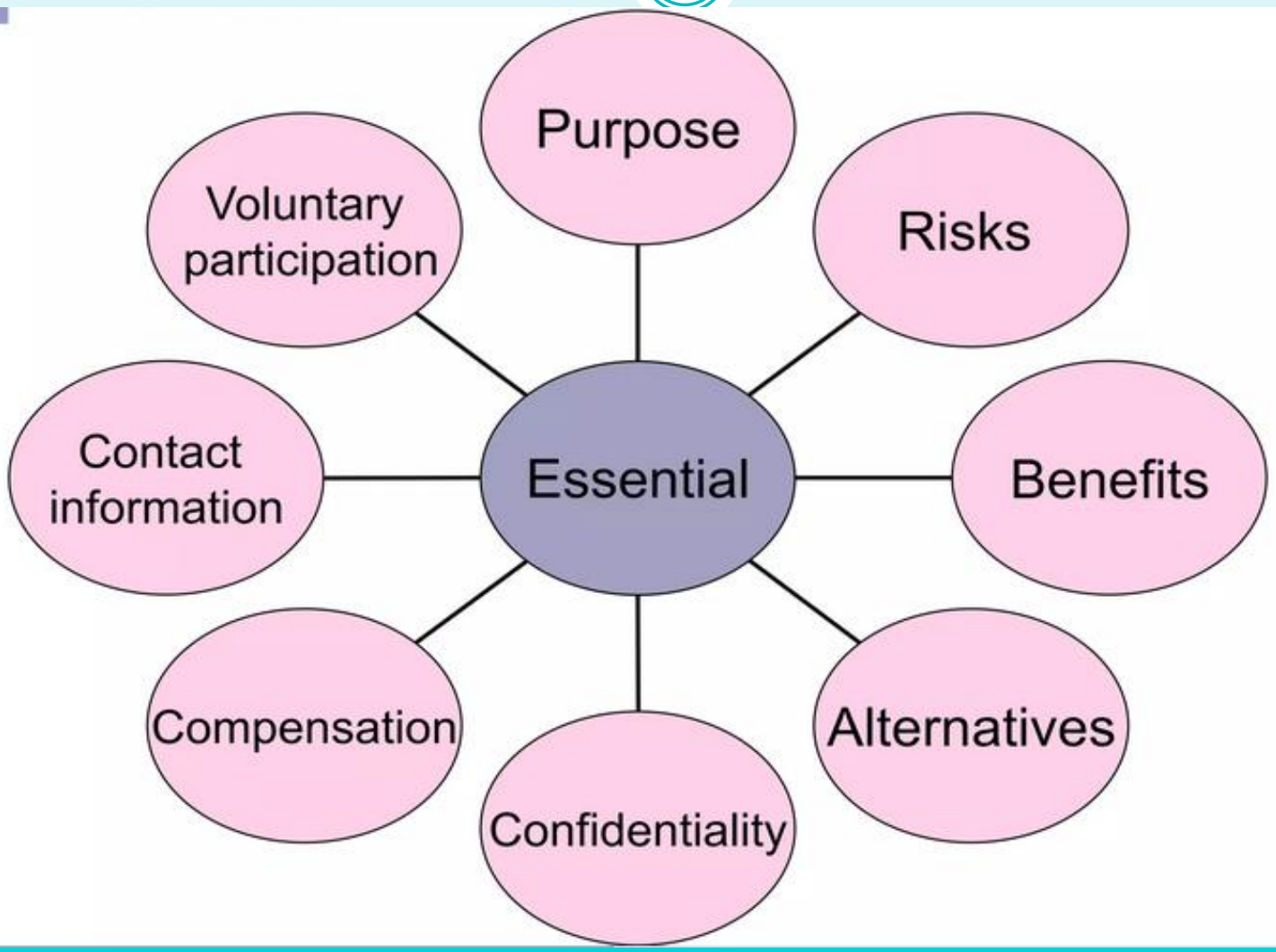
2- Information elements

- Disclosure
- Recommendation
- Understanding

3- Consent elements

- Decision
- Authorization

Necessary elements of Informed Consent



Have you obtained informed consent from participants?

- The researcher is always responsible for protecting the health of the participants and this responsibility is not eliminated by signing the informed consent form.

In order to conduct an interventional research, the researcher has mentioned at the end of the informed consent form of his intervention research in the part of the participant's signature:

"With full knowledge of the doctors' explanations, I declare my full satisfaction with participating in this research and declare that in case of complications, I will not have any complaints from the medical team“

Is this sentence against the rights of patients in research?

A) Yes, acquittal in research is unethical.

B) No, because the side effects have been told to the patient in the consent form.

C) No, because the patient's satisfaction means the researcher's irresponsibility.

D) It depends on the type of research intervention

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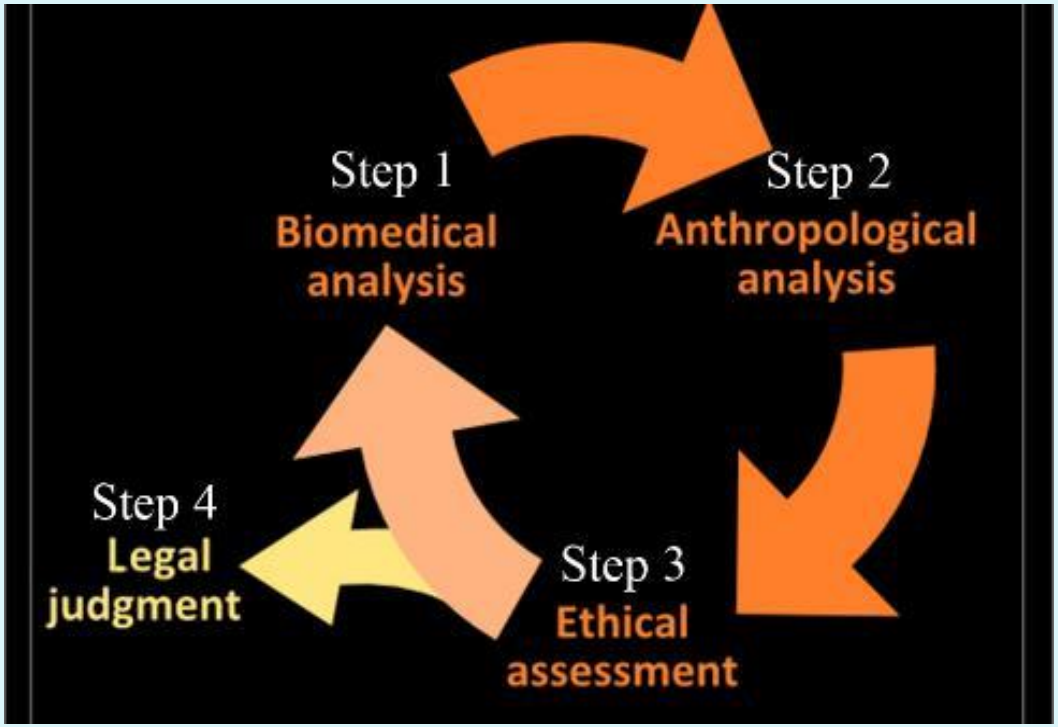
Does the Research Considers:

1- Religious Standards

2- Legal Standards

3- Local Sensitivities



A question

- A dentist is conducting a research study on a new dental implant procedure with participants from diverse cultural backgrounds. She is not familiar with the cultural norms and practices of the participants. Is it ethical for her to conduct this research study?

1- The dentist should proceed with the study without concern about cultural differences.

2- It is ethical for the dentist to conduct the study since she has necessary expertise and qualification.

3- The dentist should consult with a cultural consultant to gain a better understanding of the cultural nuances of the participants.

4- The dentist should halt the study and seek guidance from an ethics committee to determine whether the lack of cultural sensitivity poses a significant risk to the participants.

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Is subject selection based on a fair strategy?

- Benefits and burdens should be distributed fairly
- Inclusion & exclusion should be based on scientific goals and align with the research objectives
- Avoiding Discrimination
- Randomization and Stratification
- Protecting vulnerable population
- Avoiding coercion
- Cultural sensitivity

Is subject selection based on a fair strategy?

- Research on the vulnerable is justified if:

- It is directly beneficial to participants
- It is just beneficial to the peer community but is harmless to participants and informed consent has been obtained carefully.
- The desired results can not be achieved by studying other groups.

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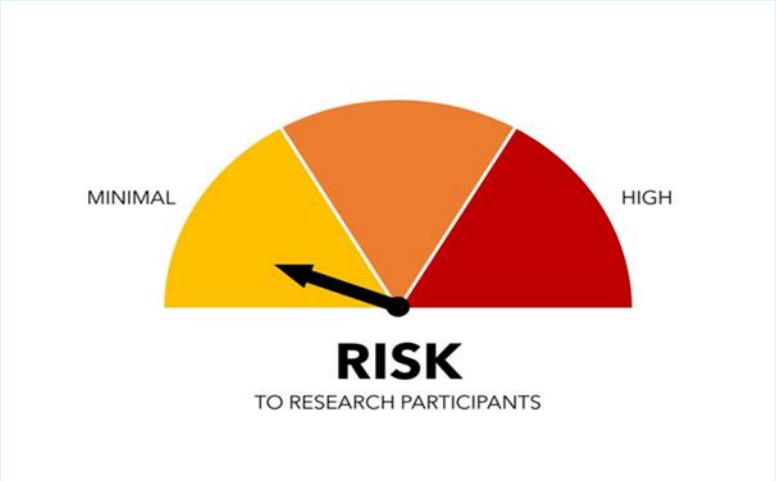
Is risk-benefit ratio acceptable?

- The risks must be minimized
- The benefits must be maximized
- The benefits of the study should outweigh the risks to justify the study.



Is risk-benefit ratio acceptable?

- Acceptable risk based on research type:

1- Therapeutic research: Less than risk of standard treatment

2- Nontherapeutic research: Minimal risk (Phase 1 of CRT-

Societal benefit vs. individual risks)

Is risk-benefit ratio acceptable?

- Minimal risk: risk of death less than one in million or major side effects less than 10 in million
- Low risk: risk of death 1-100 in million or major side effects 10-1000 in million

Is risk-benefit ratio acceptable?

- How to minimize risks:

1- Make sure the research team is competent enough

2- Select research subjects correctly

3- Select methodology which guarantees participants' safety

4- Identify type, level, probability and severity of all possible risks

5- Establish procedures for monitoring, reporting, and addressing adverse events promptly

Is risk-benefit ratio acceptable?

- How to minimize risks:

5- Monitor patients during the study carefully

6- Stop research in case of any serious danger

7- Prepare supportive measures in case of any danger

8- Be ready for immediate decoding

9- Monitor patients for a long-term and intermittently if necessary

انواع آسیب	تاثیر	درمان	مدت
قابل چشم پوشی			
تهوع خفیف	تداخل با توان فرد برای دنبال کردن اهداف مینور زندگی	شاید دارو	دقیقه تا ساعت
خراش یا کبودی پوست	درد خفیف	ضد عفونی و بانداژ	دقیقه تا ساعت، ≤ ۱۰ روز
کوچک			
سردرد	درد متوسط، عدم توان دنبال کردن اهداف مینور(مثل کوه نوردی) یا ماژور (شرکت در مدرسه)	شاید دارو، استراحت، یا هردو	ساعت
سرماخوردگی	ناراحتی، عدم توان دنبال کردن اهداف مینور(دیدن موزه) یا ماژور (شرکت در محل کار)	دارو، استراحت، یا هردو	چند ساعت
متوسط			
شکستگی ساده استخوان	درد متوسط، عدم توان دنبال کردن اهداف مینور(ورزش)	دارو، گچ گیری	درد ساعتها، بهبود در عرض هفته ها تا ماهها
بیخوابی متوسط برای ۱ ما	آزاردهنده، عدم توان دنبال کردن اهداف مینور(دیدن دوستان) یا ماژور (شرکت در محل کار)	تغییر رویه زندگی، و دارو	هفته های متناوب

انواع آسیب	تاثیر	درمان	مدت
جدی (اساسی)			
پاره شدن لیگامان زانو با ناتوانی دائمی	درد متوسط، عدم توان دنبال کردن اهداف مینور(ورزش) ناتوانی دائمی در انجام ورزش و نیاز به عادت کردن	جراحی و بازپروری	پارگی(ساعت تا روز) و بازپروری پس از جراحی هفته ها تا ماهها
مراقبت ویژه برای چند هفته اما بدون سکل	درد شدید و مشکلات فیزیکی، عدم امکان انجام فعالیتهای روتین و دنبال کردن اهداف مینور و ماژور		هفته ها
ماژور			
اپیزودهای سایکوتیک	تغییر شخصیت و روابط فرد، تاثیر در فعالیتهای روزانه و اهداف مینور و ماژور	دارو، تغییر اهداف ماژور زندگی (کار)	هفته ها تا ماهها
آرتریت روماتوئید	درد شدید، و سفتی، عدم توان دنبال کردن اهداف مینور و ماژور (تعطیلات و کار) و فعالیتهای روزانه	دارو، فیزیوتراپی، عادت کردن	سالها
از دست دادن انگشت	عدم تعادل دست، تداخل با بسیاری از فعالیتهای روزانه، تداخل با اهداف مینور و ماژور، نیاز به عادت کردن		دائم

انواع آسیب	تاثیر	درمان	مدت
شدید			
افسردگی ماژور	افسردگی به همراه سایر علائم مربوطه، تداخل با اهداف زندگی، و فعالیت، اضطراب و تغییر مود	دارو	دهه ها
پاراپلژی	عدم امکان فعالیت و دنبال کردن اهداف مثل فرزند آوری و پرورش فرزند	مراقبت روزانه و روتین	دائمی
کاتاستروفیک			
فراموشی شدید	عدم امکان فعالیت	مراقبت همه جانبه	دائمی
مرگ			

A question

- A nurse is caring for a patient who is at high risk for developing pressure sores. The nurse is aware of a new pressure sore prevention device that is very effective, but it is also very expensive. The nurse is unsure whether the benefits of the device outweigh the costs, especially for this patient, who is on a limited income.
- What is the ethical fault in the nurse's risk benefit assessment?

A) The nurse is not considering the patient's individual needs and circumstances.

B) The nurse is not weighing the risks and benefits of the device carefully.

C) The nurse is not considering the financial costs of the device.

D) The nurse is not considering the patient's right to self-determination.

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Confidentiality& Privacy

- Implement secure methods for collecting, handling, and storing participant data.
- Anonymize data when possible, ensuring that individual participants cannot be identified.
- Clearly communicate the extent to which participant information will be kept confidential during the informed consent process. Address any potential limitations to confidentiality.


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سپاسگزارم