INITIATIVE ON ISLAM AND MEDICINE
INSTILLING HIKMAH IN HEALTHCARE

Unit 4: Human Enhancement and Transhumanism

Are We Changing the Human Being and Should We Change Our Being?

Lesson 1: Transhumanism - Biomedical Intervention and Biomedical Futures

Time Length: 45-50 min.

INSTRUCTIONAL OUTCOMES

Next Generation Science Standards (NGSS):

Science and Engineering Practices:

- Asking Questions and Defining Problems: Students engage in questioning the ethical, moral, and scientific implications of human enhancement and transhumanism.
- Constructing Explanations and Designing Solutions: The lesson encourages students to construct explanations about the impact of biomedical interventions on the human body and design ethical solutions or guidelines.

Crosscutting Concepts:

- Systems and System Models: Analyzing the human body as a system affected by biomedical technologies and societal norms.
- Cause and Effect: Discussing how advancements in biomedical technology can lead to the identification or redefinition of diseases, such as high blood pressure or pre-diabetes.

LS1: From Molecules to Organisms: Exploring genetic engineering, biotechnology, and the impact of interventions on human biology.

LS4: Biological Evolution: Discussing the concept of human evolution and the idea that humans are an 'unfinished product' in the context of transhumanism.

ESS3: Earth and Human Activity: Examining the ethical considerations of altering the human body through biomedical interventions and the societal impacts of these changes.

Common Core Standards:

English Language Arts:

- Reading Standards for Informational Text: Analyzing informational texts such as religious scriptures, scientific articles, and ethical discussions allows students to build their comprehension skills.
- Speaking and Listening Standards: Engaging in discussions about complex and controversial topics like human enhancement fosters speaking and listening skills, requiring students to articulate and defend their viewpoints.

Social Studies/History:

- Integration of Knowledge and Ideas: The lesson integrates religious perspectives (Islamic theology) with scientific viewpoints, promoting a holistic understanding of societal issues.

Ethics and Philosophy:

- Ethical Reasoning: Engaging in discussions about the moral implications of biotechnological advancements encourages students to reason ethically and consider diverse viewpoints.

Content Learning Outcomes:

- Identify key components of transhumanist ideology
- Distinguish between Islamic theological perspectives on human enhancement and its purposes and secular bio-scientific views

Materials:

- **Presentation Slides** (Slides 4-24)
- **Triple-Entry Vocabulary Journal** (Student Responsibility)
- **Transhumanism: Will humans evolve to something smarter? | A-Z of ISMs Episode 20 - BBC Ideas**

Instruction/Teacher Facilitation:

- In Unit 3, we discussed the pertinent question of "What does it mean to be human" in the context of various views. We determined that a human is not only a body but also includes the soul which has consciousness. It is pretty obvious that robots and AI cannot completely replace us, but what about using science to improve the human being itself?

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- In this Unit, we will be exploring how notions of human enhancement and transhumanism impact how we think about the use of biotechnology and the practice of medicine; we will also consider whether, and to what extent we can/should benefit/improve or "change" human bodies.
  - We think that things like cyborgs and robotic parts for humans are science fiction, but the reality is that it is science today. This is no longer the future of science, it is actually present-day scientific advancements.
  - Scientists are devising and have devised ways for us humans to live longer and continue to live on this polluted, changing planet.
- We have to start by defining transhumanism and its key components.

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- Let's start with some context: What is at stake?
  - If biomedical interventions change our bodies, are we slowly transforming ourselves into something beyond the human species?
    - From a transitional human to a post-human (always transitional human due to the fact of constant evolution)
  - That leads us to then ask: Are doctors (unwittingly) contributing to this post-human future by researching, designing/inventing new procedures, or enhancing existing procedures, and then performing those procedures?
  - This leads to the question: What moral limits should we as Muslims be aware of in regard to such processes and aspects of this post-human future?

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  - If our society validates changes to our being (body+/soul), then what are our values around such changes? What are our values, from our Muslim tradition, that help us think about whether these changes should be part or parcel of your role as a (future) Muslim physician?
    - Are we desiring a future that God warns us against? (we have been warned against ideas of desiring immortality, devilish impulses of desiring more from human bodies than currently possible.)

        - The warning is against the general idea of becoming "God-like" and that humans are trying to manipulate their bodies to remove mortality (which makes us human) and control our design (which is the purview of God).
        - This suggests that transhumanistic-like motivations can be linked to such characters in the Qur'an as Pharoah (which provides a negative/warning-type connotation).
    - Is there a notion of changing our being that Islam validates?
  - As we delve into this topic, these are the questions I want you to be thinking about.
- Now let's look at the components of this ideology of transhumanism and how it manifests itself.

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- What is transhumanism? - Watch **Transhumanism: Will humans evolve to something smarter?**
  - Ask students: "What are some of your initial thoughts on transhumanism and how it looks at our future as humans?"
  - Ask students to reflect on the idea [elicits moral intuition] and on how the idea relates to the previous units/lessons on human origin [evolution] and nature [body/mind dualism].
- To outline what is being presented in this video:
  - Essential elements of transhumanism:
    - Human beings are an 'unfinished product' of evolution
      - As evolutionary biologists propose, we evolved from homo erectus to homo sapiens, and are now considered the human race.
      - Many believe that humans are the "final" or the end evolutionary product because of our advanced abilities compared to other animals/organisms, but transhumanists believe that we are an "unfinished product."
      - Evolution continues as time continues, so we are still evolving, and there might be a "better version" that we can evolve into (but it will also take a long period of time to do so).
    - One may ask that if we are 'naturally' changing, why not induce changes to speed up or better control that process?
      - If we induce these changes, perhaps we can select changes that are beneficial and influence what will happen.
  - The goal of transhumanism is to extend ourselves, via bioscience and technology, beyond the limits of our frail bodies which are susceptible to decline and disease.
    - To transform humans into a being that no longer has these frailties.
    - As evolutionary mechanisms were discussed, we see the process of evolution being one that weeds out weak aspects and replaces them with a better functioning version.
  - Some examples of what has been proposed as transhuman changes are: (according to the transhumanistic worldview.)
    - Incorporating super-functioning body parts into a human being, like making your limbs stronger, perhaps faster.

- Uploading the “mind” to a computer or electronic device and by doing so the mind is preserved (where usually there would be a decline in brain function as one ages). - This “mind” could perhaps then be transferred into another form/body, so that your “essence” or consciousness can be maintained outside of the biological body.
- Would this mean that the soul was transferred also? (interesting philosophical question)
- Genetically engineering bodies for better function - genetically altering disease-causing elements of the gene in a manner that eliminates that disease or dysfunction (could also be catered to the environment one lives in).

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❖ Before going further, It would be productive to understand the overarching Islamic view of illness, disease, curing, and healing:

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➢ Let’s look at what our scriptural text says about it -

- In the Quran, when Prophet Ibrahim (A) is describing Allah (swt) and His Power, he explains - وَإِذَا مَرِضْتُ فَهُوَ يَشْفِينِ “and when I fall ill, [He] cures me” (Surah Ash-Shu’araa: 80) - It is Allah (swt) who actually cures.
- Our beloved Prophet (S) mentioned: مَا أَنْزَلَ اللَّهُ دَاءً إِلاَّ أَنْزَلَ لَهُ شِفَاءً (Sahih Bukhari 5678)
  “There is no disease that Allah has sent down (created), except that He also has sent down (created) its healing.” - This Hadith presents two things. One, that both illness/disease is from Allah (swt) *and* so is the cure. And, two, this Hadith tells us that the cures for illnesses/diseases do exist and we may be able to discover them.
- تَدَاوَوْا عِبَادَ اللَّهِ فَإِنَّ اللَّهَ سُبْحَانَهُ لَمْ يَضَعْ دَاءً إِلاَّ وَضَعَ مَعَهُ شِفَاءً إِلاَّ الْهَرَمَ (Sunan Ibn Majah 4(31):3436)
  “Seek treatment, O slaves of Allah! For Allah does not create any disease but He also creates with it the cure, except for old age.” - In this Hadith, the Prophet (S) is specifically ordering/commanding us to seek treatment, to not only find those cures/treatments, but to *use* them as well. This presents the notion that action is required from us to attain that cure. Interesting to note that the Prophet (S) makes the exception for old age, which denotes that perhaps there is no cure for old age. (Then the question arises, what are the symptoms of “old age.”)
- فَخَرَجَ النَّبِيُّ صلى الله عليه وسلم فَقَالَ " هُمُ الَّذِينَ لاَ يَكْتَوُونَ وَلاَ يَسْتَرْقُونَ وَلاَ يَتَطَيَّرُونَ وَعَلَى رَبِّهِمْ يَتَوَكَّلُون" (Jami` at-Tirmidhi 2446)
  “They have never allowed themselves to be treated by cauterization... rather, they have put their trust in God alone.” - (There is a discussion here of why these people left the available treatment, where the Prophet (S) in the earlier hadith commands to seek treatment. This gives us the notion that it is not necessary to

apply treatment in all cases, there is a spectrum of utility in Islam.) The second part of the equation, as seen here, is trusting in Allah (swt). Seeking treatment, but also trusting that the actual effect of that treatment is at the consent and will of Allah (swt).

- We as Muslims have a theistic view of illness/disease because we believe that Allah (swt) is in control of both sides of the situation, the illness aspect as well as the cure/treatment aspect. But we have been given a responsibility to do some action (whether it is internal or external) in reacting to a given disease; not only physically seeking cure/treatment, but also having a manner in which one conducts themselves, within the situation, towards ALLAH swt, i.e. trusting in Allah (swt), a hoping from Allah (swt) for the cure, being grateful, understanding that sins are being removed, etc. And understanding that this trial, which is coming from Allah (swt), has an *independent* relationship to the outcome.
- It is not the Physician that heals, but the normative association that the physician is the avenue that allows for healing to take place through the medicine or actions s/he provides. In reality, the control is with ALLAH swt of whether that medicine provides that healing or not.

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- Therefore, in a more general sense, let's look at doctors and diseases:
  - Ask students: What is the relationship between doctors and diseases?
    - Doctors participate in the process of curing/healing/ameliorating a disease; first diagnosing and then providing a course of treatment (a metaphor of assistance) - The connotation being that the physician is supporting/guiding a patient through this affliction.
    - Doctors research a disease, their symptoms, and results for the body, and plan a course of action to address these events.
    - A doctor's job is to combat/fight/terminate the disease; to get rid of the disease completely (a metaphor for fighting) - The connotation here is that the physician is actively trying to eradicate the affliction. "Men against death" as Paul de Kruif authors.
    - (help) define
    - In the transhumanist ideology, there is a particular connotation embedded in their views, which in turn, alludes to what the role of a physician is.

  - How do you define a disease? (How we define disease matters because the way we define disease will also determine what is the job of a doctor or what we view a doctor as. What are the professional responsibilities of a doctor.) Ask students:
    - Does a child who is born deaf have a disease? And Why?
    - Does a person who is not able to conceive a child have a disease? Why?
    - Did the disease exist before it was researched and defined?
    - **Group Discussion - Many students understand disease as a disorder/dysfunction, yet many students will say that a deaf child does not have a "disease" - have students think through this and give their explanation as to why they do not consider this "disease."**

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- ➢ Defining Disease - Related yet non-overlapping terms - No singular notion of what disease is, which directly implies that there is no singular notion of what a doctor is/should be aiming to do.
  - Dis-ease → defined by subject - when a person is not at ease
    - A physician's role then would be to remove that dis-ease and make them at ease; therefore, it is defined by the subject/person experiencing the dis-ease.
  - Dis-ability → defined by subject and society (tied to flourishing) - when one does not have the ability to function in society or do something that is considered "normal" in society and carry out daily tasks.
    - A physician's role then would be to make them be "able" again (if capacity was lost) or to help create tools to augment their abilities to reach a specific norm of ability.
  - Dis-order → defined by society - the "order" is dictated by society, when order in society is disrupted due to a person's condition, or can be defined by a professional society (i.e. structural order within the body). The body works in a certain way, we know what eyes are supposed to do- see, the ears are supposed to hear etc.
    - This then means that a physician should work on restoring that order or maintaining that order as defined by society.
  - Dys-function → abnormality or impairment or deviation from norms of physiology or social behavior - this is closely related to the above, but instead of order we ask "Who defines 'normal' physiology and how?"

    → defined by professionals and society
    - Should all bodies be able to hear and conceive? This is where the discussion comes in of *who* defines **norms**, and *how* they are defined; most norms are defined by certain ideologies of what the function of the person/body as a whole, or part of the person/body, should be.
    - Defining norms also from a theological perspective.
  - NOTE: One's notion of disease or how one defines disease has clear implications as to what a physician believes s/he should or should not be doing.

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- ❖ To understand this concept further, let's take the example of height:

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- ➢ Data Analysis - Charts/Graphs:

- First chart - of average adult height over a century (100 years) - Ask students: What trend do you see here? - average height is increasing, then plateaus, and also there seems to be a slight dip at the end. Males vs females, males are taller.
    - Height is seen to change over the course of time, it has not been static; still changing.

[Key point: Normal distribution of human attributes & capacities change over time.]

- Second chart - of average adult height specified by *region*, and specifically of *males* (there is a lot more variability seen here) - Ask students: Based on this graph, looking at this data, what do you see happening here? - the average height of males is different based on the region.
    - Around 1930, we see a stark difference. In America, the great depression is happening, in Turkey, there is a lot of political/economic disorder and turbulence, Saudia Arabia was formally established by King Abdulaziz Al-Saud in 1932 (recording starts after that), and in Malaysia, the economic depression and Chinese immigrant friction shrinks Malay population.
    - Due to the environment or conditions in which these males live, their heights seem to be affected (the chart represents that variability).

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- Distribution Curves of Male and Female Height (Bell Curves) -
    - This is usually called a “normal” distribution curve - but should be referred to as an “average” instead. We discussed earlier about the understanding of “normal” and what that implies.
    - If we use the term “normal” and you are 2 standard deviations away from the average, you would be considered *ab-normal.*

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- The bio-socio-cultural construction of disease:
    - In medicine, we use notions of “normality” regularly. Let’s look at the example of individual height curves.
    - When your parents took you to the pediatrician’s office, they were shown these curves - your height and weight at each visit are recorded, and over time, this curve is plotted to see your growth pattern. This is plotted on a curve that contains the average distribution of other children.
    - As we see here (on the graph with the stature/height), the plotted points are no longer following the curve, this child is falling off the curve and going below the average distribution curve. The doctor would tell the parents that this is abnormal.
    - ISS - Idiopathic short stature is defined as a *disease* and quantified by being at least 2 SD off the curve. Idiopathic means that we have no known cause for the person’s lower-than-average height; so short stature is considered a disease. Therefore, that means doctors should address this issue, and treat/cure/ameliorate etc this problem.

- Why has this been considered a problem? Because according to society, or others in your region, this is not "normal" and there are harms that may fall upon the person if they are too short (see impacts below).
- So this is an example of the Sociocultural construction of disease.

■ Physiologically, this has been identified by the doctor, but are there any social harms of this? Especially because we are saying that this is an example of society and culture establishing or defining what a disease is.

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- Impact of short stature - a study of the harms of short stature using varied metrics, done in the UK with a biobank of almost 200,000 people.
- Results:
  - ◆ Taller men are associated with a higher level of mean education, which in turn is associated with higher incomes.
  - ◆ Other sociological data
    • Shorter kids - Prone to bullying due to their size, which leads to psychological impacts (confidence, inferiority complex, etc.)
    • Shorter men & Taller women → Fewer romantic prospects
    (because it goes against norms of society; the norm is to have taller men and women who are shorter than those men)

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➢ A doctor's job is now presumed to be to fix this "problem."

■ According to a physiological perspective, as seen on the growth curves, and from a sociocultural perspective, this is an issue, and we should use biotechnology to fix that.

- Data on giving growth hormones - no long-term studies/data that this addresses all the potential harms - a lot of uncertainty but doctors have seen benefits in some cases.
- This is treating a "disease" without any known causes.
- Some people have gone to more evasive procedures, where leg bones are broken, then adjustments are made to then lengthen them, for that 2-inch height increase.

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➢ Biomedical technology allows us to see "diseases" that were not *considered* diseases before. Ask students:

■ Would there be such a thing as high blood pressure as a disease if we did not have the blood pressure cuff/ sphygmomanometer? Did high blood pressure actually exist?

- Yes, because we saw the symptoms, effects, or outcomes of it. BUT, the tool for measuring the cause of this disease did not exist earlier, therefore, the labeling and the association of cause and effect of this particular disease was not present. Now that we have the tool, the blood pressure cuff, there is an identification of this disease, an association of

symptoms to its results/effects, which is now known as high blood pressure.

- Would being childless be considered a disease? What if there were no artificial reproductive biotechnologies?
  - Yes, because one of the main purposes of marriage is procreation. And not having children is an abnormality in society.
- Can you think of an example of a disease that "came into existence" due to biomedical technologies?
  - **Student answers will vary**
  - EX: onset of diabetes - Before the advent of accurate blood glucose measurement tools, the spectrum of blood sugar levels between normal and diabetic wasn't as well-defined. With improved glucose monitoring, medical professionals can now identify individuals with blood sugar levels higher than normal but not high enough to be classified as diabetes. This recognition has led to interventions and lifestyle changes aimed at preventing or delaying the onset of full-blown diabetes, potentially averting complications.
  - EX: High blood pressure.

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- In Summary:
  - Diseases are variably defined (4 D's)
  - Bioscience can define a disease based on the idea of the 'normal' spectrum of physical or social attributes and assess the harms of those abnormalities.
  - Biomedicine can then develop treatments to address that condition/malady
  - Human bodies are changing
    - Normality changes over time & across space
    - Claim = empirical proposition based on probabilistic/zanni knowledge