810 DQ 8 1 AND 2

[Name of the Writer]

[Name of the Institution]

810 DQ 8 1 AND 2

**Genetic Technology**

Towards the end of 2018, a Chinese scientist named Dr. He Jiankui revealed that he has modified the genes of a pair of twins. Jiankui claimed that the babies will be born with HIV-resistant genes, giving them a much longer life span. Dr. Jiankui allegedly used CRISPR technique to edit the embryo. Using the CRISPR technique, Dr. Jiankui modified the CCR5 gene. CCR5 is a protein on the surface of white blood cells that is involved in the immune system as it acts as a receptor for chemokines (Li et.al, 2015). Chemokines monitor the migration of the cells (Li et.al, 2015). This revelation came as s surprise for most of the scientists that were working on gene modification. CRISPR is a technique used in the gene editing of an organism. CRISPR allows for extremely precise and hasty modification of DNA. CRISPR technique has been favored by a large number of scientists because it enables them with greater flexibility and immense accuracy to cut and paste DNA. Another reason for its popularity might be the cheaper costs of inputs involved. Using CRISPR, scientists can perform large-scale genetic manipulation at cheaper costs. However, despite being cheaper and fast, CRISPR is not considered completely safe or reliable by various scientists. Although Dr. Jiankui claimed that his experiment can be a watershed moment and it can help eliminate the menace of HIV from Africa, a recently published article by Micheal Greshko suggests otherwise. Micheal Greshko, an eminent science writer currently affiliated with National Geographic, suggests that gene-edited babies may die early. The report suggests that people having the same gene that Dr. Jiankui modified in babies have 21 percent more chance of dying earlier than 76 years of age. There are different ethical issues regarding gene editing because the modifications are done will be transferred to generations to come. Considering the fact that in 2014, more than 40 countries placed a ban on research on gene editing. An RN's top priority should always be the safety of the patients. Taking into account the fact that gene editing is discouraged by most of the researchers due to safety implications, an RN should object it too until it is deemed safe to carry out. Cultural issues involved in gene editing are yet to be ascertained. Once gene editing is a widely accepted phenomenon, cultural ramifications would be analyzed. Religious issues regarding gene editing are concerning. A survey conducted by Pew Research Center in 2016 shows that 30 pc of US adults deem gene editing unacceptable. A whopping 41pc highly religious Americans deem it totally unacceptable. This implies that gene editing is not doing particularly well when it comes against religion. Food and Drug Administration (FDA) has not legalized gene editing in the US. This implies that laws are yet to be imposed regarding gene editing. Societal implications of gene editing have a mixture of results. Although gene editing can help with food shortage and fighting disease, a widespread awareness regarding the implications of gene editing is need of the hour. Gene editing of crops can help curb food shortage, while gene editing in mosquitos can help develop a mosquito that ultimately ends malaria (Bao et.al, 2016). However, considering the damning article published by Micheal Greshkosuggest that society is not ready to handle the gene-edited humans and implication involved with them (Bao et.al, 2016).

**Rights Of Clients In Genetic Decision Making**

There are multiple issues concerning the rights of the patients involved in genetic decision making. Of all issues, consent and privacy of the patients and clients in genetic decision making are discussed ahead. Any scientific research underpins the offerings of research participants (Gyngell, Douglas, & Savulescu, 2017). There is a need to respect the rights of the participants and clients involved in the process. For genetic research, a robust consent process must be created by the researchers (Gyngell, Douglas, & Savulescu, 2017). The clients must be made aware of the risks and benefits involved with the process they are involved in (Gyngell, Douglas, & Savulescu, 2017). Researchers may also need to obtain consent forms that inform the clients involved in the process regarding the consequences of the genetically related decision making. For informing the client or the patient regarding the consent of the process they are involved in, researchers need to carry out a comprehensive dialogue with the participant (Gyngell, Douglas, & Savulescu, 2017). Researchers must bring into the knowledge of the patients about the meanings of the clauses of the consent form.

 Another issue concerning the decision making involved in gene editing is the privacy of the data of the patients involved. There are two things that underpin any scientific research (Iyengar, Kundu, & Pallis, 2018). First, the sharing of data on a large scale to help researchers with an ongoing issue (Iyengar, Kundu, & Pallis, 2018). Second, data of the patient should be protected at all costs (Iyengar, Kundu, & Pallis, 2018). These two coupled together can provide balanced scientific research. For an RN, the consent and the privacy of the patient involve are of paramount concern. Obtaining consent and making patients aware of the process they are involved in is the basic obligation of an RN. Moreover, given the data leaks from tech giants doing the rounds in the media, the need to carefully handle the patient data is great. An RN should be responsible enough to handle information on the patient carefully. To ensure privacy, an anonymous database of patients and client should be maintained.

**References**

Bao, S., Lv, Z., Li, Y., Ma, J., Zhang, Y., Li, S., ... & Yang, F. (2016). Genetic Engineering: Pros versus Cons in Deciphering Disease Mechanism-ft. *Science*, *2016*.

Gyngell, C., Douglas, T., & Savulescu, J. (2017). The ethics of germline gene editing. *Journal of applied philosophy*, *34*(4), 498-513.

Iyengar, A., Kundu, A., & Pallis, G. (2018). Healthcare Informatics and Privacy. IEEE Internet Computing, 22(2), 29-31.

Li, C., Guan, X., Du, T., Jin, W., Wu, B., Liu, Y., ... & Hu, Q. (2015). Inhibition of HIV-1 infection of primary CD4+ T-cells by gene editing of CCR5 using adenovirus-delivered CRISPR/Cas9. *Journal of General Virology*, *96*(8), 2381-2393.