Learning Activities: Chromosome Deletions and Abnormalities

Bring one article on a chromosome deletion to class to share with your peers. Share 3-5 facts about the selected chromosome deletion

Using the selected article from week 3, create a short, 5 question quiz (multiple choice, fill in the blank, true/false)

Students will reach out to a local or school club organization that works with children with disabilities, specifically individuals with chromosome deletions to volunteer at least once during the semester. Picture proof for documentation and a 2-page minimum double-spaced reflection regarding the experience to address these questions will be assessed:

a) Briefly describe the organization you volunteered with and how did it change your view of working with children with chromosome deletions or disabilities?

b) What is something you noticed while interacting with the children or adults?

c) When did you feel most useful?

d) What skills did you learn, and where can the skills you learned while volunteering be used in the future with this population?

e) What was the most rewarding and challenging aspect about volunteering and working with children and families who have chromosome deletions?

Alternatives, such as in the case of a global pandemic, will be determined by discretion of the instructor of record.

Students will locate and watch a documentary, episode, or podcast regarding chromosome deletion. A one-page minimum, double-spaced reflection will be required (provide link to documentary, episode or podcast).

Role-Play Activity: Genetic Counseling Session Simulation

Objective:
Students will simulate a genetic counseling session to explore how structural chromosomal abnormalities (inversions, insertions, ring chromosomes) are communicated to families and how they relate to neurodevelopmental outcomes.

Roles:

1. **Genetic Counselor** – A graduate student trained in genetics, responsible for explaining the chromosomal findings and their implications.

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2. **Parent(s)** – A student or pair of students portraying caregivers of a child recently diagnosed with a rare chromosomal disorder.
3. **Developmental Specialist** – A student who provides insight into potential developmental delays, intellectual disabilities, and intervention strategies.
4. *(Optional)* **Medical Geneticist** – A student who can elaborate on the biological mechanisms behind the chromosomal abnormality.

Scenario Setup:

- The child has been diagnosed with a **ring chromosome 15** and shows signs of developmental delay.
- Genetic testing also revealed a **chromosomal insertion** on chromosome 7.
- The family is seeking clarity on what this means for their child's development and future.

Instructions:

1. Each group receives a **brief case summary** and relevant background from the readings (e.g., Gilmore, He et al., Winsor).
2. Students prepare for their roles using the readings to guide their explanations and responses.
3. Role-play the session for 10–15 minutes.
4. After the role-play, groups reflect on:
    - What communication strategies were effective?
    - What challenges arose in explaining complex genetic concepts?
    - How did the team balance scientific accuracy with empathy?