Content

1. Relationship between health care professionals and patients

1.1. Intended Learning Outcomes

By the end of the lessons, the students will be able to:

a. Know the 4 models of patient-doctor relationship;
b. Realize some major ethical concerns or principles of patient-doctor relationship;
c. Analyze the contradicting values in making moral judgment over some medical issues;
d. Apply different ethical theories to make moral judgment.

* *Prerequisite knowledge: Normative Ethics, the nature of morality, moral principles, moral reasoning, theory of conduct, theory of value & virtue (Refer to 'NSS Ethics and Religious Studies Curriculum Support Materials - Compulsory Part: Ethics - Module 1: Normative Ethics')*

1.2 Introduction

In the older days, the general public's educational level was relative low, and medical knowledge was very limited among people. Patients depended greatly on doctors' professional authority. The role of the doctor was like a parent who imposed the best treatment on patients according to their own judgment. Such kind of '**paternalistic model**' faded out gradually when the society underwent drastic changes on the medical and insurance systems whereas the concept of human right and 'right to know' have become prevailing. Various types of patient-centered models have then taken over. '**Informative model**' is one of the approaches under this. In it, the patients looked like consumers who are deeded to be in the best position to judge what met their own interest, and thus viewed the doctor as mainly the information provider. From the 20th century onwards, other two patient-doctor models have developed simultaneously. They are 'interpretive model' and 'deliberative model'.

'**Interpretive model**' modes the doctors towards counselors who help patients clarify their needs and values system, such that they can choose a suitable treatment for themselves. On the other hand, under the '**deliberative model**', doctors play the

roles of teachers or advisors who help patients make their own choices of medical treatment according to their clinical health situation. Doctors would share their own moral and medical views with patients in the discussion process.

In the lessons, students will walk through some cases with moral dilemmas in different relationships between the patients and medical personnel.

References:

http://depts.washington.edu/bioethx/topics/physpt.html

http://www.docin.com/p-4005093.html

http://www.who.int/genomics/public/patientrights/en/

1.3. Teaching and learning process

Suggested teaching period: 4 lessons

1. Introduction

1.1. Teacher asks the students:

- When was your last visit to a clinic/hospital?
- Did you take all the medicine prescribed by your doctor? Why or why not?
- Have you ever bargained with him/her about taking or not taking any kind of medicine or treatment?
- How much trust do you have in the professional judgment of your doctor?
- How would you describe your relationship with your doctor?

1.2. Based on students' answers, teacher initially categorizes their relationships with the doctor, and supplements other types of patient-doctor relationship as mentioned in the introduction above.

2. Four Models of Patient-doctor relationship

Teacher may:-

2.1. Ask students to complete 'Worksheet 1: Paternalistic model of patient-doctor relationship' in pair, and then facilitate a class discussion when checking the answers.

2.2. Ask students to complete 'Worksheet 2: Patient-centered approaches of patient-doctor relationship'. Teacher may ask the students to role-play the cases. Teacher can divide the class into 4 groups and assign each group to present one aspect of question (2) – i.e. patient's well-being / respect for autonomy / informed consent / respect for life, and facilitate a class discussion.

3. Confidentiality vs Harm principle

Teacher may:-

3.1. Ask students to complete 'Worksheet 3: Confidentiality between a mental patient and a psychiatrist'

3.1.1. Discuss with students: 'If you were the psychiatrist, will you keep the confidentiality or warn the woman? Why?'

3.1.2. According to their initial responses, separate students into 2 groups – 'Keep the confidentiality' vs 'Warn the woman'. Ask each group

to brainstorm among themselves about the reasons, and record the points on a big poster/the blackboard.

3.1.3. Ask each group to present their views.

3.2. Review the theories of ethics by asking students to complete 'Worksheet 4a (or 4b): Revision on different Theories of Ethics'

3.2.1. Based on the points students written on the big poster/blackboard, ask students to analyze the corresponding theories used for each point.

3.3. Consolidate their knowledge by asking them to complete 'Worksheet 5a (or 5b): Case Analyses - Death of Tarasoff'. They may do it in pair or in a small group. Afterwards, check answer with them to assess their understanding.

4. Proxy-doctor relationship – an extension of patient-doctor relationship

Teacher may:-

4.1. Explain to the students: apart from the 4 models of patient-doctor relationship, there is another extended type of relationship – 'Proxy-doctor relationship'

4.2. Ask students to complete 'Worksheet 6: Proxy-doctor relationship – an extension of patient-doctor relationship'

5. Conclusion and students' self-evaluation

5.1. Teacher reviews the key learning points of the topic on 'Relationship between health care professionals and patients' with the students.

5.2. Ask students to consolidate their knowledge and evaluate their learning outcomes by completing 'Worksheet 7: Summary & self-evaluation'

Worksheet 1: Paternalistic model of patient-doctor relationship

Characteristics of the Paternalistic model

'Paternalism' means an intervention in another person's preferences, desires, or actions aiming at avoiding harm or benefiting the person without consent. In the patient-doctor relationship, paternalistic model refers to the act in which decisions are taken by a health care professional in order to benefit the patient or the society as the whole. In other words, there are two kinds of paternalism, namely 'individual paternalism' and 'social paternalism'. Under this model, the relationship between the doctor and patient is unequal. The doctor has more control over the patient in terms of decision making regarding admission and treatment plans.

Study the following case and work in pair to answer the question.

Case Study: Forced caesarean section on an Italian woman

In 2012, an Italian heavily-pregnant woman with bipolar syndrome was hospitalized in UK when she was attending training in the country. The doctors considered that applying medication to her would endanger the infant. Due to concerns about risk to mother and child, they took the baby girl out by caesarean section without the woman's consent.

Given the past history of the woman's incapability of taking care of her 2 other children, the medical personnel, with approval by the court, sent the newborn baby to the Essex social services. However, when the woman's mental stage had stabilized after several months, she returned to Italy and sued the hospital. She claimed she had been left traumatized by the incident. She argued that she did not give consent orally or in writing to the caesarean section, or to the adoption of her daughter by the British social services. "I want my daughter back. I'm suffering like an animal," she said.

(1) What are the pros and cons of the 'Paternalistic' decision on taking the baby out by caesarean section?

Challenging level *(Optional): Please support your answers with Normative Ethics arguments.*

	Pros	Cons
For the woman		
For the baby		

(2) In case you need any medical care, do you like to be treated by the paternalistic approach? Why?

Conclusion:

Some scholars criticize that the paternalistic model of patient-doctor relationship is too much asymmetrical in which the doctor determines all aspects of consultations. The patients' concerns are ignored and sometimes suppressed. Because of the broad social changes in nowadays, the effectiveness of the model is questioned and the doctor-patient relationship has shifted toward more patient-centered approaches.

Reference

- http://www.theguardian.com/society/2013/dec/03/forced-caesarian-italian-woman-suffering-animal
- http://www.ihe-online.com/feature-articles/the-physician-patient-relationship-paternalistic-or-a-partnership/index.htmlhttp://www.ukessays.com/essays/nursing/case-study-of-bipolar-affective-disorder-nursing-essay.php
- Ahmad Kalateh Sadati (et. al., 2014). '*Clinical Paternalistic Model and Problematic Situation: A Critical Evaluation of Clinical Counseling'. J Health Sci Surveillance Sys*. April 2014; Vol 2; No 2. Pp.78-87.

(For teachers' reference)

What are the pros and cons of the 'Paternalistic' decision on taking the baby out by caesarean section?

Challenging level *(Optional): Please support your answers with Normative Ethics arguments.*

	Pros	Cons
For the woman	• Enable her to take medication for speedy stabilization of her mental condition (which is moral because 'healthy' is of high value to human beings - Virtue ethics)	• Deprive her of the right to information and right to choices (which is immoral because the doctor did not fulfill his responsibility of protecting the patient's rights – Kantian / deontological ethics) • Feel by the traumatized experience which may harm her mental health even more seriously in the long run (which is immoral because it minimizes net pleasure, but maximizes pain of the patient – Hedonism)
For the baby	• Save her life by removing her from the harmful side-effect of medication (which is moral because it is the duty of doctor to prevent and remove any foreseeable medical risks for people – Kantian / deontological ethics) • Increase her chance of survival and ensure that she would be taken care of by the social services (which is moral because it maximizes net pleasure, and minimizes pain of the baby – Hedonism)	• Deprive her of the right to maternal love (which is immoral because 'right to maternal love' is good in-itself – Kantian / deontological ethics) • May affect her psychological and social growth in the rest of her life (which is immoral because she may develop deviant or anti-social behaviors when she is growing up, that harms the society – Utilitarianism)

Worksheet 2: Patient-centered approaches of patient-doctor relationship

A traditional paternalistic approach has aroused great controversy in the modern world. The rise of 'principle of autonomy' has dragged the patient-doctor relationship towards a patient-centered direction. In the wake of this, the **informative, interpretive and deliberative approaches** prevail. A brief account on each approach is given below.

Read the following descriptions and analyze the strengths and weaknesses of each model:

Model	Strengths	Weaknesses
Informative Model It is also known as 'Provider-Customer relationship'. In the informative model, the doctor tells patients of treatment options and relevant medical information, but patients select their own treatment. This recognizes the relevance of patient choice but reduces the role of the doctor to a technician providing the chosen service. For instance, the patient-doctor relationship in commercial plastic surgery is a typical example of 'informative model'. The surgeon conducts plastic surgery as per the requests of the customer.		

Interpretive Model The interpretive model portrays the doctor as a 'counsellor' who informs the patient and interprets relevant values to implement the chosen treatment. In this model, the doctor helps patients explore their values, and select the treatment that best fits these values. For example, a doctor may initiate a substantial dialogue with the patient regarding his/her health condition. Based on the relevant medical information provided by the doctor, the patient makes the decision, and the doctor takes corresponding actions.		
Deliberative Model The deliberative model portrays the doctor as a 'teacher' and further suggests that it is appropriate for the doctor to challenge the patient's values. In this model, the doctor helps patients explore health-related values, and choose their treatment based on those values. Interpretive and deliberative models resemble each other in terms of that they both take patients' values into top consideration. However, the difference is that the latter enables doctors to share their own moral and medical views with patients in the discussion process. Thus, doctors and patients' views are more well-balanced. For example, a patient who bears quadruplets may not know what exactly her values are in the beginning (whether to secure her own life or that of her 4 embryos). The doctor works with her to discover and develop her values, and presents carefully selected medical information to her. After discussion, they make a decision on preserving the embryos.		

Study the following cases and answer the questions.

Case Study: Death of Michael Jackson

Michael Jackson, the "King of Pop", died on 25 June 2009 at age 50 which mourned the whole world! His personal doctor, Dr Conrad Murray, was convicted of killing him. Dr Murray proclaimed his innocence, and pointed out that Michael took an overdose on his own.

'That night he just couldn't sleep. I prescribed him drugs to help, including valium* and lorazepam*, but he was begging, pleading, close to tears. "I want sleep, please Dr Conrad, I need sleep."' Said Dr Murray. 'I told him, "This is not normal. What I've given you would put an elephant to sleep."'

So, in order to satisfy Michael, Dr Murray injected him with an exceptionally huge dosage of Demerol about half an hour before he went into cardiac arrest. Demerol is a strong narcotic painkiller. Overdose of the drug or mixing it with certain other drugs can lead to reactions including slowed or stopped breathing, shock and cardiac arrest.

Dr Murray was finally convicted of involuntary manslaughter in 2011 and finally served a two-year prison sentence.

* Notes:
Valium: a drug to make people feel calmer
Lorazepam: a drug often used to treat anxiety disorders, which helps patients fall into sleep

Case Study: Breast cancer with pregnancy in cross-cultural setting

Nadia was a 28-year-old Muslim woman from Bangladesh who went to Italy for her PhD study. She used to feel a small lump at her breast, slightly painful sometimes, but ignored it due to her busy study. Her be-husband Alam, who was working in a multinational company in Canada, recently has migrated to Italy. Soon after Alam had arrived Italy, they got married.

Upon her health check, Nadia was diagnosed with breast cancer, while she was 5 weeks into her first pregnancy. Dr Martha explained that surgery

and postoperative chemotherapy would be necessary for her. However, termination of pregnancy is a must before the chemotherapy.

According to the Muslim law, abortion is permitted within 3-month of pregnancy. Dr Martha seized the time to conduct an in-depth conversation with the couple. Dr Martha understood that Nadia does not want to terminate pregnancy with the fear of becoming sterile for the rest of her life, but does want to do surgery and chemotherapy to secure her recovery. Neither Alam agreed about the termination of pregnancy as it is his first baby.

Having put into consideration values of the couple and the health condition of Nadia, Dr Martha advanced Nadia to do surgery and go with pregnancy and then start chemotherapy after delivery. With the presence of the doctor and the clinical ethicist, the couple agreed with knowledge of the medical procedures and the possible risks.

(1) What are the models of patient-doctor relationship for the 2 cases above?

- **The case of Michael Jackson:** _____
- **The case of Nadia:** _____

(2) Evaluate the doctors' performances in the following aspects in both cases:

	Dr Murray (in the case of Michael Jackson)	Dr Martha (in the case of Nadia)
Promoting patient's well-being		

Respect for autonomy		
Informed consent		
Respect for life		

(3) Which patient-doctor model do you prefer the best? Why?

_____

_____

_____

_____

Reference:

- Emanuel, E.J. & Emanuel, L.L. (1992). 'Four Models of the physician-patient relationship'. *The Journal of the American Medical Association*. April 22, 1992 v267 n16, p2221 (6). Pp.1-9.
- Kazeem, Fayemi Ademola (2014). 'The Nijmegen Method of Case Deliberation and Clinical Decision in a Multicultural Society'. *Bangladesh Journal of Bioethics*. 2014; 5(2):73-79.
- Lasker, Shamima P. (2012). 'Breast Cancer with Pregnancy in Cross Cultural Setting'. Bangladesh Journal of Bioethics 2012;3(3): 21-26.
- https://dialecticonline.wordpress.com/issue-06-summer-10/paternalism-in-medical-ethics-a-critique/
- http://www.dailymail.co.uk/news/article-2512469/No-I-didnt-kill-Michael-He-did--massive-overdose-using-stash-What-really-happened-night-Jackson-died-Dr-Conrad-Murray-doctor-jailed-death-King-Pop.html
- http://product-liability.lawyers.com/product-liability/what-caused-michael-jacksons-sudden-death.html
- http://en.wikipedia.org/wiki/Death_of_Michael_Jackson

(For teachers' reference)

Read the following descriptions and analyze the strengths and weaknesses of each model:

Model	Strengths	Weaknesses
Informative Model It is also known as 'Provider-Customer relationship'. In the informative model, the doctor tells patients of treatment options and relevant medical information, but patients select their own treatment. This recognizes the relevance of patient choice but reduces the role of the doctor to a technician providing the chosen service. For instance, the patient-doctor relationship in commercial plastic surgery is a typical type of 'informative model'. The surgeon conducts plastic surgery as per the requests of the customer.	Patient autonomy is very high. Patient has well-formed values.	Patient may not have sufficient knowledge to make the right medical judgment/decision, which may ruin one's own health.
Interpretive Model The interpretive model portrays the doctor as a 'counsellor' who informs the patient and interprets relevant values to implement the chosen treatment. In this model, the doctor helps patients explore their values, and select the treatment that best fits these values. For example, a doctor may initiate a substantial dialogue with the patient regarding his/her health condition. Based on the relevant medical information provided by the doctor, the patient makes the decision, and the doctor take corresponding actions.	Patient autonomy is high. Patient's needs and values can be clarified, and his/her self-understanding can be raised.	Technical specialization hinders doctors to cultivate the skills necessary for the interpretive model. With limited interpretive talents and limited time, doctors may impose their own values on the patients, which becomes a paternalist in disguise.

Deliberative Model The deliberative model portrays the doctor as a 'teacher' and further suggests that it is appropriate for the doctor to challenge the patient's values. In this model, the doctor helps patients explore health-related values, and choose their treatment based on those values. Interpretive and deliberative models resemble each other in terms of that they both take patients' values into top consideration. However, the difference is that the latter enables doctors to share their own moral and medical views with patients in the discussion process. Thus, doctors and patients' views are more well-balanced. For example, a patient who bears quadruplets may not know what exactly her values are in the beginning (whether to secure her own life or that of her 4 embryos). The doctor works with her to discover and develop her values, and presents carefully selected medical information to her. After discussion, they make a decision on preserving the embryos.	Patient's autonomy and doctor's professionalism are well-balanced. The final medication decision is made deliberatively, which secures the best well-being of the patient.	The discussion process is time-consuming, which may delay the treatment to the patient, and increase the cost.

(For teachers' reference)

What are the models of patient-doctor relationship for the 2 cases above?

- The case of Michael Jackson: Informative Model
- The case of Nadia: Deliberative Model

Evaluate the doctors' performances in the following aspects in both cases:

	Dr Murray (in the case of Michael Jackson)	Dr Martha (in the case of Nadia)
Promoting Patient's well-being	The patient's well-being was not fully considered. Dr Murray overdosed the patient with Demerol regardless of his physical condition, which caused his sudden death.	The patient's well-being was well-addressed. Not only the patient's own physical condition was considered, but her religious values, psychological health and even her husband's views were also addressed.
Respect for autonomy	The patient's autonomy outweighed the doctor's professional judgment in this case. As per the patient's request, Dr Murray injected him with a huge dosage of Demerol.	The patient's autonomy and the doctor's professional judgment were well-balanced. The doctor facilitated the patient and her family to express their views; while the doctor provided professional advice based on their values to come up with a mutually agreed medical plan.
Informed consent	Although the doctor did tell the patient that the dosage he gave him 'would put an elephant to sleep', the warning of its fatalness was not explicit.	The doctor told the patient about the details of the medical procedures and the possible risks before she made the decision.
Respect for life	The doctor's value of pleasing the patient and satisfying his wants outweighed the value of 'respect for life'.	The life of the patient and also the baby were fully respected.

Worksheet 3: Confidentiality between a mental patient and a psychiatrist

Study the following case and discuss the answers with your group-mates:

Case Study: Death of Tarasoff

In California, a man with mental disorder told his psychiatrist that he intended to kill a young woman called Tarasoff. The psychiatrist faced a moral dilemma of whether he should preserve the professional code of keeping confidentiality of the client, or to protect the life of the woman and give her a warning. For the former, if the professional code on confidentiality is violated, it would destroy the medical system by breaking the trust between patients and the professionals, and thus stop many people from seeking help. For the latter, if the woman is not warned, her precious life would be in danger. It does not only cause harm to the woman, but also to her parents who love her very much and financially depend on her.

Reference

Beauchamp T.L. (et.al ed.) (2008). Contemporary Issues in Bioethics. US: Thomson Wadsworth.

If you were the psychiatrist, will you keep the confidentiality or warn the woman? Why?

Worksheet 4a: Revision on different Theories of Ethics

Write down the corresponding theories of ethics against the key principles/features as stated below.

➢ **Virtue ethics**	➢ **Kantian/ deontological ethics**
➢ **Hedonism**	➢ **Utilitarianism**

(A)_____

- It suggests that the ultimate standard of morality focuses on the right or wrong of the action itself
- It emphasises the importance of reason
- It stresses taking up duty/responsibility unconditionally
- It is immoral to tell lies under any circumstance
- It treats people equally with no discrimination

(B)_____

- It proposes two concepts: “Value” and “Virtue”
- Value” may start from the individual, so that the individual is driven to take certain actions because he or she holds or agrees with certain values. E.g. If a person believes in “honesty”, s/he will always tell the truth.
- “Virtue” means taking a certain person’s behaviour as an indicator of their character, such that we can suppose from their actions that they have certain virtues. E.g. If a person always tells the truth, we can suppose that s/he has the virtue of “honesty”.

(C)_____

- Morality depends on whether an act can “bring the greatest happiness to the majority”
- It is usually defined as maximizing total benefit and reducing suffering or the negatives

(D)_____

- It believes that pleasure is the primary or most important intrinsic good.
- It strives to maximize net pleasure, and minimize pain.

Answers:

(A) *Kantian/ deontological ethics; (B) Virtue ethics; (C) Utilitarianism; (D) Hedonism*

Worksheet 4b *(challenging level)* : Revision on different Theories of Ethics

Write the corresponding alphabet in the right-hand column:

Description	Theory of Ethics (A) Kantian/ deontological ethics (B) Virtue ethics (C) Utilitarianism (D) Hedonism
1. "Virtue" means taking a certain person's behaviour as an indicator of their character, such that we can suppose from their actions that they have certain virtues. E.g. If a person always tells the truth, we can suppose that s/he has the virtue of "honesty".	
2. It is immoral to tell lies under any circumstances.	
3. Morality depends on whether an act can "bring the greatest happiness to the majority".	
4. It believes that pleasure is the primary or most important intrinsic good.	
5. It emphasises the importance of reason.	
6. It proposes two concepts: "Value" and "Virtue".	
7. It is usually defined as maximizing total benefit and reducing suffering or the negatives.	
8. It strives to maximize net pleasure, and minimize pain.	
9. It suggests that the ultimate standard of morality focuses on the right or wrong of the action itself.	
10. It stresses taking up duty/responsibility unconditionally.	

11. Value" starts from the individual, so that the individual is driven to take certain actions because he or she holds or agrees with certain values. E.g. If a person believes in "honesty", s/he will always tell the truth.	
12. It treats people equally with no discrimination.	

Worksheet 4b *(challenging level)* : Revision on different Theories of Ethics *(For Teacher's Reference)*

Write the corresponding alphabet in the right-hand column:

Description	Theory of Ethics (A) Kantian/ deontological ethics (B) Virtue ethics (C) Utilitarianism (D) Hedonism
1. "Virtue" means taking a certain person's behaviour as an indicator of their character, such that we can suppose from their actions that they have certain virtues. E.g. If a person always tells the truth, we can suppose that s/he has the virtue of "honesty".	B
2. It is immoral to tell lies under any circumstances.	A
3. Morality depends on whether an act can "bring the greatest happiness to the majority".	D
4. It believes that pleasure is the primary or most important intrinsic good.	C
5. It emphasises the importance of reason.	A
6. It proposes two concepts: "Value" and "Virtue".	B
7. It is usually defined as maximizing total benefit and reducing suffering or the negatives.	D

8. It strives to maximize net pleasure, and minimize pain.	C
9. It suggests that the ultimate standard of morality focuses on the right or wrong of the action itself.	A
10. It stresses taking up duty/responsibility unconditionally.	A
11. Value" starts from the individual, so that the individual is driven to take certain actions because he or she holds or agrees with certain values. . E.g. If a person believes in "honesty", s/he will always tell the truth.	B
12. It treats people equally with no discrimination.	A

Worksheet 5a: Case Analyses - Death of Tarasoff

Based on 'Case Study: Death of Tarasoff' we discussed earlier (cf. Worksheet 3), analyze the underlying theories for the reasons. Please explain your answer.

The Psychologist should keep the confidentiality, …	
Reason	**Analysis**
Because it is my **responsibility** to protect the patients' confidentiality	Theory: _____ Explanation:
Because it can retain the trust of a **large number of patients**, and protect the **professionalism of the medical personnel as a whole**	Theory: _____ Explanation:
Because **trust** between the patients and the medical professional is a **virtue**	Theory: _____ Explanation:

The Psychologist should warn the woman, …	
Reason	**Analysis**
Because life is most valuable, which outweighs the moral value of keeping confidentiality. The psychiatrist cannot use 'risking the lady's life' as a mean to achieve the goal of protecting the patients' confidentiality and keeping trust between the patients and the medical personnel.	Theory: _____ Explanation:
Because violent assault would put public safety at risk.	Theory: _____ Explanation:

Because if the women is not warned, not only would she be endangered, but her parents would suffer emotionally and financially too if the man really killed her. In addition, the man would also suffer as he would be prosecuted and convicted. Nobody would be happy in this case.	Theory: _____ Explanation:

Worksheet 5b *(Challenging Level)* : Case Analyses - Death of Tarasoff

Based on 'Case Study: Death of Tarasoff' we discussed earlier (cf. Worksheet 3), write down a reason and provide an explanation according to the theory.

The Psychologist should keep the confidentiality, …	
Reason	**Analysis**
E.g. Because it is my **responsibility** to protect the patients' confidentiality	Theory: **Kantian/ deontological ethics** Explanation: E.g. It is moral because it is done not for self-interest, but for duty.
	Theory: **Utilitarianism** Explanation:
	Theory: **Virtue ethics** Explanation:

The Psychologist should warn the woman, …	
Reason	**Analysis**
	Theory: **Kantian/ deontological ethics** Explanation:
	Theory: **Utilitarianism** Explanation:
	Theory: **Hedonism** Explanation:

Worksheet 5: Case Analyses - Death of Tarasoff *(For teachers' reference)*

Based on 'Case Study: Death of Tarasoff' we discussed earlier (cf. Worksheet 3), analyze the underlying theories for the reasons. Please explain your answer.

The Psychologist should keep the confidentiality, …	
Reason	**Analysis**
Because it is my **responsibility** to protect the patients' confidentiality	Theory: **Kantian/ deontological ethics** Explanation: It is moral because it is done not for self-interest, but from duty.
Because it can retain the trust of a **large number of patients**, and protect the **professionalism of the medical personnel as a whole**	Theory: **Utilitarianism** Explanation: Emphasizing the greatest possible balance of good consequences or the least possible balance of bad consequences in the world as a whole.
Because **trust** between the patients and the medical professional is a **virtue**	Theory: **Virtue ethics** Explanation: Trust is a moral virtue, which is a morally praiseworthy trait.

The Psychologist should warn the woman, …	
Reason	**Analysis**
Because life is most valuable, which outweighs the moral value of keeping confidentiality. The psychiatrist cannot use 'risking the lady's life' as a mean to achieve the goal of protecting the patients' confidentiality and keeping trust between the patients and the medical personnel.	Theory: **Kantian/ deontological ethics** Explanation: Preserving life in itself is moral. On the contrary, using others as a mean to achieve one's own goals is immoral.

Because violent assault would put public safety at risk.	Theory: **Utilitarianism** Explanation: Greater number of people's well-being is safeguarded comparing with the number of patients and medical personnel in the society.
Because if the women is not warned, not only would she be endangered, but her parents would suffer emotionally and financially too if the man really killed her. In addition, the man would also suffer as he would be prosecuted and convicted. Nobody would be happy in this case.	Theory: **Hedonism** Explanation: Maximizing pleasure and minimizing pain is the most important.

Conclusion

Over-exaggeration on 'confidentially' may exploit others' rights and values, or even endanger others' life. To strive for a balance, the 'harm principle' is established. 'Harm principle' requires persons to refrain from causing preventable wrongful harm to innocent. This principle has special force when persons are vulnerable and dependent on others.

Worksheet 6: Proxy-doctor relationship – an extension of patient-doctor relationship

Under several situations, such as being in coma or mental unconsciousness, the patients lose ability to state their will or decision on the kind of medical treatments to be received or rejected. In such cases, a 'proxy' would help give determination to the medical personnel. In other words, 'Proxy' is the person with the legal and moral authority to make decisions on the medical treatments for the incapacitated patients. S/he is usually a person of kinship with the patient, or a person pre-designated by the patient while s/he is conscious.

Study the following case and answer the questions:

Case study: A granddaughter's dilemma

A 82-year-old woman had been hit by a bicycle and suffered a hip fracture. After the surgery, she was sent to the Surgical Intensive Care Unit (SICU). Two days later, non-ceased internal bleeding was developed. Even worse, cardiac, renal and vascular impairment were triggered, which caused a rapid deterioration of her health condition.

Her granddaughter, who was her only living relative, was identified by the SICU staff. She was, therefore, deemed to be the legal proxy for the patient. The surgeon met with the granddaughter and asked if she would like them to apply laser surgery to stop the bleeding. The surgeon explained that her grandmother would have 50% chance to survive the surgery, but 100% chance for death without it.

It had come to the granddaughter an even harder decision when she heard another evaluation from the SICU attending physician. Unlike the 50% survival chance as told by the surgeon, now the physician told her that her grandmother's chance of returning home was almost next to zero, given her old age and deteriorating situation.

The granddaughter was overwhelmed and frightened as she felt that she had the obligation and power to determine her grandmother's live and death. On one hand, she definitely wanted her grandmother to live; on the

other hand, she understood thoroughly her grandmother would not want to 'be on machines' and her life extended without dignity (she never let anyone see her unless she was perfectly groomed). This became the most difficult decision she ever had to make.

Reference:

Dubler, N.N. (2001), 'The Doctor-Proxy Relationship: The Neglected Connection'. In Weinberg, M.B. (ed.), Medical Ethics: Applying Theories and Principles to the Patient Encounter'. New York: Prometheus Books. Pp. 241-258.

If you were the granddaughter, what decision would you make? Please give reasons.

_____

_____

_____

_____

Challenging level *(Optional): Convert one of your reasons into an ethical argument, and then give an account of it. (After you complete the task, please use the following checklist to do a self-evaluation)*

	Self-evaluation 5=outstanding ,1=very poor				
Am I able to set a controversial argument?	5	4	3	2	1
Am I able to state my standpoint clearly?	5	4	3	2	1
Am I able to use the theory/theories of ethics to support my standpoint?	5	4	3	2	1
Am I able to present my view in a logical and systematical way?	5	4	3	2	1

If you were the medical-care personnel, how would you help the granddaughter?

	Ways to help the granddaughter
Doctor	
Nurse	
Chaplain	
Medical Ethicist (in some countries, e.g. US)	

(For teachers' reference)

If you were the medical-care personnel, how would you help the granddaughter?

	Ways to help the granddaughter
Doctor	• Doctor should treat the granddaughter as if she were the patient who has the full right to be informed adequately and honestly, such that she can make an informed medical decision.
Nurse	• Nurse should take good care of the patient, so as to release the burden on the granddaughter. • Nurse should also treat the patient with respect, although she is unconscious, so that the granddaughter would feel being respected too.
Chaplain	• Chaplain can provide spiritual support and counseling to her. • Chaplain can also guide her through the struggle with the ethical decision making process by giving her insights from the spiritual/religious dimension.
Medical Ethicist (in some countries, e.g. US)	• In some countries, 'Ethicist' is included in the medical system to aid the staff in combining morality with science. An ethicist's education consists of medical law courses, bioethics, religion, research analysis and the procedures for applying ethics to medical science. • Ethicist should invite the granddaughter to sit together with the surgeon and the attending physician to review the physical condition of the patient, possible risks and effectiveness of various treatment plans. In the meeting, Ethicist should provide ethical and legal advice so as to help the granddaughter to make the decision. Reference: http://www.ehow.com/list_6665769_duties-medical-ethicist.html

Worksheet 7: Summary & Self-evaluation - Relationship between health care professionals and patients

Write down the key learning points of this module.

(A) Four Models of Patient-doctor relationship
1.
2.
3.
4.

(B) Confidentiality vs Harm principle
1.
2.
3.
4.
5.

(C) Revision on different Theories of Ethics
1.
2.
3.
4.
5.

(D) Proxy-doctor relationship – an extension of patient-doctor relationship
1.
2.
3.
4.
5.

Evaluate how well you have learnt (please put a '✓')

	Very good	Good	Fair	Poor
(A) Four Models of Patient-doctor relationship				
(B) Confidentiality vs Harm principle				
(C) Revision on different Theories of Ethics				
(D) Proxy-doctor relationship – an extension of patient-doctor relationship Confidentiality				

What question(s)/area(s) you want to learn more in this module of 'Relationship between health care professionals and patients'?

_____

_____

_____

_____

_____

_____

2. Patients' rights

2.1. Intended Learning Outcomes

By the end of the lessons, the students will be able to:

a. State the common rights and responsibilities of patients
b. Analyze the contradicting values in making moral judgment over some issues concerning patients' rights, in particular concerning euthanasia and placebo;
c. Apply different ethical theories to make moral judgment.

* *Prerequisite knowledge: Normative Ethics, the nature of morality, moral principles, moral reasoning, theory of conduct, theory of value & virtue (Refer to 'NSS Ethics and Religious Studies Curriculum Support Materials - Compulsory Part: Ethics - Module 1: Normative Ethics')*

2.2. Introduction

The Universal Declaration of Human Rights, formalized in 1948, recognizes "the inherent dignity" and the "equal and unalienable rights of all members of the human family". In line with these basic human rights, the rights of patients are developed. Although Patients' rights vary in different countries and in different jurisdictions based on the cultural and social differences, some fundamental features are universal.

According to the World Health Organization (WHO), some of the fundamental features of patients' rights are as follows:

> *'Patients receive treatment consistent with the dignity and respect they are owed as human beings. This means providing, at minimum, equitable access to quality medical care, ensuring patients' privacy and the confidentiality of their medical information, informing patients and obtaining their consent before employing a medical intervention, and providing a safe clinical environment.'*[1]

1 http://www.who.int/genomics/public/patientrights/en/

Deriving from the above, the following patients' rights will be highlighted and further examined in this module:

- Right to know/information
- Right to decide/autonomy
- Right to confidentiality
- Right to complaint

In the lessons, students will learn the concepts of the above-mentioned patients' rights, and go through the processes of handling the ethical dilemmas using different theory of ethics and approaches when some of the patients' rights are infringed in some controversial medication situations, e.g. euthanasia and placebo.

References:

- McWay, Dana C. (2010). Legal and ethical aspects of health information management. New York: Cengage Learning.
- Shannon, Thomas A. (2009, 4th ed.). An introduction to bioethics. New Jersey: Paulist Press.
- Tauber, Alfred I. (2005). Patient autonomy and the ethics of responsibility. Cambridge: The MIT Press.
- http://en.wikipedia.org/wiki/Medical_ethics
- http://en.wikipedia.org/wiki/Placebo
- http://jme.bmj.com/content/30/6/551.full
- http://people.umass.edu/curtis/academics/researchtoolbox/pdfs/Placebos_Brody.pdf
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- http://www.hpcsa.co.za/Uploads/editor/UserFiles/downloads/conduct_ethics/rules/generic_ethical_rules/booklet_3_patients_rights_charter.pdf
- http://www.ifc.org/wps/wcm/connect/afef2c004970bfb49909db336b93d75f/3EthcsPtntsrghts.pdf?MOD=AJPERES
- http://www.who.int/genomics/public/patientrights/en/
- http://www.wma.net/en/30publications/10policies/l4/

2.3. Teaching and learning processes

Suggested teaching period: 3 lessons

1. Patients' rights and responsibilities

1.1. Teacher asks the students to form groups (4-5 in a group) and brainstorm the following question in 'Worksheet 1: What rights and responsibilities do patients have?'

1.2. Each group presents their answers, and analyzes the most frequent patients' rights and responsibilities they mentioned.

1.3. Ask students to work in pair to complete 'Worksheet 2: Comparison of the patients' rights in US and Hong Kong', and then discuss the answers with the whole class.

1.4. Challenging level (optional): Ask students to think of some situations that exercising of some patients' rights may cause moral dilemmas. To stimulate their thinking, 'Worksheet 3 (Optional): Moral Dilemmas Caused by Patients' Rights' can be used.

2. Moral Dilemma: Euthanasia – Right to die!

2.1. Flipped learning: Ask students to watch the following online videos at home beforehand. Alternatively, teacher may divide the class into 2 groups and assign each group to watch one of them:

- Taking Mercy: Euthanasia debate –*(For: 'Passive euthanasia' and 'mercy killing' in Canada)*
  https://www.youtube.com/watch?v=NxYmgrnGx_M
  OR / AND
- [生命恩泉] - 解剖安樂死 Euthanasia: Facts and Myths (Part 1 & 2) – (Against: Catholic views on euthanasia)
  ➢ https://www.youtube.com/watch?v=Smj-fKnFcm8
  ➢ https://www.youtube.com/watch?v=7l2xttRBUkg

2.2. During the lesson, ask the students to recap what they have learnt from the video(s). Based on that, teacher divides the class into 2 groups for the debate on 'Patients have the right to euthanasia'. To facilitate their preparation and consolidation, 'Worksheet 4: Debate on Euthanasia – Right to die!' can be used.

2.3. In the debate, students may evaluate the performance of both themselves and their peer using the evaluation tables in Worksheet 4.

3. Moral Dilemma: Placebo – Do Patients have Right to Know?

3.1. Play the online video clip *'Stuff They Don't Want You to Know - The Placebo Effect'* at https://www.youtube.com/watch?v=v_feOG94IAs (4 mins).

3.2. Ask students to complete Task A of 'Worksheet 5: Placebo – Do Patients have Right to Know?'. And then check the answers together.

3.3. Ask student to complete Task B of 'Worksheet 5' in pairs.

3.4. Teacher facilitates a class discussion.

4. Conclusion and students' self-evaluation

4.1. Teacher reviews the key learning points of the topic on 'Patients' rights' with the students.

4.2. Ask students to consolidate their knowledge and evaluate their learning outcomes by completing 'Worksheet 6: Summary & self-evaluation'.

Worksheet 1: What rights and responsibilities do patients have?

Patients' rights

Patients' responsibilities

Worksheet 2: Comparison of the patients' rights in US and Hong Kong

Part A: Patient Rights & Responsibilities in California, US

Watch the video by West Oakland Health Council (WOHC) at https://www.youtube.com/watch?v=_x7WCuZG8M4, and fill in the blanks.

In California, patients have the **rights** to:

1. Considerate, respectful and dignified _____
2. Present _____ and grievances
3. _____ regarding their diagnosis, treatment and prognosis
4. Effective _____ and to receive language assistance
5. _____, _____ and _____ in regard to their care, information and records
6. Participate in _____ about the care, treatment and services

On the other hand, patients have the **responsibilities** to:

1. Provide information that is _____ and _____
2. _____ and express concerns about the care, treatment and services
3. _____ related to and comply with agreed to treatment or care plan
4. Behave in a _____ manner
5. _____ their own _____ through making proper choices

Part B: Patient Rights & Responsibilities in Hong Kong

Study the following extract, and answer the questions.

Understanding the rights and responsibilities ensures high health care efficiency (by Department of Health, HKSAR)

(extracted from http://www.dh.gov.hk/english/useful/useful_dykt/useful_dykt_patient.html)

The right to know

1. Patients have the right to know the medical fee or charges in advance.
2. Patients have the right to know the details of their illness, including diagnosis, progress, investigations, methods and effectiveness of treatment.
3. Patients have the right to know the name, dosage, method of administration, uses and side effects of the prescribed medications.
4. Patients have the right to know the purposes and common complications of any treatment procedures or investigations before they are performed, and whether there are any other alternatives.
5. Patients have the right to obtain the information concerning their illness. They have the right to obtain a medical report or a copy of the medical record from relevant medical institutes or doctors. A fee may be required, so patients should ask in advance.

The right to decide

1. Patients have the right to consult more than one doctor before making decision to accept any treatment.
2. Patients have the right to decide whether to accept or refuse any medical advice from doctors. If patients decide to refuse the suggestions from doctors, they should understand the consequences of their decision and be responsible for it.
3. Patients have the right to decide whether or not to participate in medical research.

The right to keep information confidential

1. Without patients' prior consent for disclosure, any information disclosed by patients during the process of management of their illness should be kept confidential by all medical personnel.

2. However, in order to help the management of the illness, doctors may disclose the information to other relevant medical personnel.
3. Under special circumstances, if doctors suspect that the patients have committed crime or participated in illegal activities, the information may be disclosed to relevant authorities.

The right to complaint

1. Patients should understand and exercise their own "right to know" and try to communicate with medical personnel. This can ensure a better understanding of their own illness and the treatment process. If finally they are still dissatisfied with the medical personnel, they can make complaints.

Patients' Responsibilities

1. Patients should tell doctors frankly about their present illness, past medical history and other relevant information.
2. Patients should cooperate with medical personnel on any mutually agreed treatment plans or procedures.
3. Patients should not ask medical personnel to provide false medical information, to issue false receipts, sick leave certificates or medical reports.
4. Patients have the responsibility to pay the reasonable fee charged by relevant doctors or medical institutes.
5. Patients should follow the rules stipulated by clinics or hospitals and respect the rights of others patients and medical personnel.

1. Comparing the patients' rights stated by HKSAR and WOHC (cf. Part A), what are the common ones?

_____

_____

_____

_____

2. What do you think is the most important patients' right? Why?

3. What other patients' rights can you think of?

4. What are the common responsibilities of patients mentioned by HKSAR & WOHC?

5. Challenging level (optional): Why is it important to state the responsibilities when talking about patients' rights?

Worksheet 2: Comparison of the patients' rights in US and Hong Kong *(For teachers' reference)*

Part A: Patient Rights & Responsibilities in California, US

Watch the video by West Oakland Health Council (WOHC) at https://www.youtube.com/watch?v=_x7WCuZG8M4, and fill in the blanks.

In California, patients have the **rights** to:

1. Considerate, respectful & dignified <u>care</u>
2. Present <u>complaints</u> and grievances
3. <u>Information</u> regarding their diagnosis, treatment and prognosis
4. Effective <u>communications</u> and to receive language assistance
5. <u>Privacy</u>, <u>confidentiality</u> and <u>security</u> in regard to their care, information and records
6. Participate in <u>decisions</u> about the care, treatment and services

On the other hand, patients have the **responsibilities** to:

1. Provide information that is <u>accurate</u> and <u>complete</u>
2. <u>Ask questions</u> and express concerns about the care, treatment and services
3. <u>Follow instructions</u> related to and comply with agreed to treatment or care plan
4. Behave in a <u>respectful</u> manner
5. <u>Protect</u> their own <u>health</u> through making proper choices

Part B: Patient Rights & Responsibilities in Hong Kong

Study the following extract, and answer the questions.

Understanding the rights and responsibilities ensures high health care efficiency (by Department of Health, HKSAR)

(extracted from http://www.dh.gov.hk/english/useful/useful_dykt/useful_dykt_patient.html)

The right to know

1. Patients have the right to know the medical fee or charges in advance.
2. Patients have the right to know the details of their illness, including diagnosis, progress, investigations, methods and effectiveness of treatment.
3. Patients have the right to know the name, dosage, method of administration, uses and side effects of the prescribed medications.
4. Patients have the right to know the purposes and common complications of any treatment procedures or investigations before they are performed, and whether there are any other alternatives.
5. Patients have the right to obtain the information concerning their illness. They have the right to obtain a medical report or a copy of the medical record from relevant medical institutes or doctors. A fee may be required, so patients should ask in advance.

The right to decide

1. Patients have the right to consult more than one doctor before making decision to accept any treatment.
2. Patients have the right to decide whether to accept or refuse any medical advice from doctors. If patients decide to refuse the suggestions from doctors, they should understand the consequences of their decision and be responsible for it.
3. Patients have the right to decide whether or not to participate in medical research.

The right to keep information confidential

1. Without patients' prior consent for disclosure, any information disclosed by patients during the process of management of their illness should be kept confidential by all medical personnel.
2. However, in order to help the management of the illness, doctors may disclose the information to other relevant medical personnel.
3. Under special circumstances, if doctors suspect that the patients have committed crime or participated in illegal activities, the information may be disclosed to relevant authorities.

The right to complaint

1. Patients should understand and exercise their own "right to know" and try to communicate with medical personnel. This can ensure a better understanding of their own illness and the treatment process. If finally they are still dissatisfied with the medical personnel, they can make complaints.

Patients' Responsibilities

1. Patients should tell doctors frankly about their present illness, past medical history and other relevant information.
2. Patients should cooperate with medical personnel on any mutually agreed treatment plans or procedures.
3. Patients should not ask medical personnel to provide false medical information, to issue false receipts, sick leave certificates or medical reports.
4. Patients have the responsibility to pay the reasonable fee charged by relevant doctors or medical institutes.
5. Patients should follow the rules stipulated by clinics or hospitals and respect the rights of others patients and medical personnel.

1. Comparing the patients' rights stated by HKSAR and WOHC (cf. Part A), what are the common ones?
   - Right to know/information
   - Right to decide/autonomy
   - Right to confidentiality
   - Right to complaint

2. What do you think is the most important patients' right? Why?

3. What other patients' rights can you think of?

   E.g.

   - Right to medical care of good quality
   - Right to beneficence
   - Right to non-maleficence
   - Right to dignity
   - Right to access to hospital records
   - Right to voluntary participation in research

4. What are the common responsibilities of patients mentioned by HKSAR & WOHC?

   - Provide accurate and complete information/medical history.
   - Follow instructions / cooperate with medical personnel on any mutually agreed treatment/care plans or procedures.
   - Behave in a respectful manner to both others patients and medical personnel.

5. Challenging level (optional): Why is it important to state the responsibilities when talking about patients' rights?

   Rights and responsibilities are the two facets of the same coin that make a balance by avoiding the maleficence of overemphasizing any of both edges. If patients' rights are overstressed, other important considerations like medical personnel's professional judgments and authority may easily be overlooked, which in return weakens the patients' well-being. The responsibilities are therefore stated at the same time to secure the rights of both other patients and the medical personnel.

Worksheet 3 (Optional): Moral Dilemmas Caused by Patients' Rights

What moral dilemmas may be caused by exercising the following patients' rights?

Patients' rights	Moral dilemmas
Right to decide/autonomy	
Right to confidentiality	
Right to beneficence *(i.e. 'doing good / taking actions that serve the best interests of patients)*	
Right to non-maleficence *(i.e. 'doing no harm' / avoiding taking any actions that harm the patients)*	
Others (Please specify):	

Worksheet 3 (Optional): Moral Dilemmas Caused by Patients' Rights *(For teachers' reference)*

What moral dilemmas may be caused by exercising the following patients' rights?

Patients' rights	Moral dilemmas
Right to decide/autonomy	E.g. A patient may request euthanasia according to his own wish to terminate his own life.
Right to confidentiality	E.g. The doctor may not be allowed to disclose the situation of a child patient who has been abused.
Right to beneficence *(i.e. 'doing good / taking actions that serve the best interests of patients)*	E.g. The doctor may use artificial methods to prolong a terminal patient's life regardless the pain and unwillingness of the patient and his family.
Right to non-maleficence *(i.e. 'doing no harm' / avoiding taking any actions that harm the patients)*	E.g. The doctor would not prescribe some effective drugs with side-effects which cause deteriorating of the patient's health. For example, Tamiflu has been found an effective drug to treat 'H5N1 avian flu' but would cause many side-effects like wheezing, chest pain and irregular heartbeat etc. To apply the principle of 'non-maleficence', the doctor would not prescribe this, which may obstruct the patient's recovery, or even cause death due to delay in curing.
Others (Please specify):	

Worksheet 4: Debate on Euthanasia – Right to die!

Euthanasia refers the practice of ceasing one's life prematurely in order to end pain and suffering. It is also known as 'Mercy Killing'.

Some people argue that '**Patients have the right to euthanasia/die**'. Do you agree?

For	Against

Self-evaluation

	Self-evaluation 5=outstanding ,1=very poor				
Am I able to make substantial arguments?	5	4	3	2	1
Am I able to give concrete examples to support my arguments?	5	4	3	2	1
Am I able to present my view/arguments in a logical and systematical way?	5	4	3	2	1
Am I able to respond to the arguments made by the counterpart?	5	4	3	2	1

Peer evaluation

	Peer-evaluation 5=outstanding ,1=very poor				
Is the counterpart able to make substantial arguments?	5	4	3	2	1
Is the counterpart able to give concrete examples to support their arguments?	5	4	3	2	1
Is the counterpart able to present their view/ arguments in a logical and systematical way?	5	4	3	2	1
Is the counterpart able to respond to the arguments made by our side?	5	4	3	2	1

Worksheet 4: Debate on Euthanasia – Right to die!

(For teachers' reference)

Euthanasia refers the practice of ceasing one's life prematurely in order to end pain and suffering. It is also known as 'Mercy Killing'.

Some people argue that '**Patients have the right to euthanasia/die**'. Do you agree?

For	Against
This is a humane way to cease pain and suffering for terminal patients.	• Some 'terminal' illnesses may be healed in the soon future given the rapid medical advancement. • Legalizing euthanasia and assisted suicide leads to suicide contagion. People may think that killing themselves is a legitimate solution to their problems.
Patients have the right to determine their own life.	• People cannot play God. Our life is in the hand of God. • Sometimes patients may make a wrong decision of ending their life in an undeliberated way.
It can reduce the public expenses on health care.	Life is invaluable.
It helps preserve the dignity of the patients who have been tortured by illness and have lost autonomy.	The improvement of hospice care can help maintain patients' dignity and reduce pain.

Worksheet 5: Placebo – Do Patients have Right to Know?

Placebo, sometimes known as 'sugar pill' or 'flake medicine', is a non-medicine prescription intended to deceive the patients. It can be in forms of pills, creams, inhalants, injections and etc. Sometimes patients with a placebo treatment will have a perceived or actual improvement in a medical condition. This is called the 'placebo effect'.

Task A: Placebo & Placebo Effect

*Watch the online video clip **'Stuff They Don't Want You to Know - The Placebo Effect'** at https://www.youtube.com/watch?v=v_feOG94IAs, and then answer the following questions:*

1. Placebo is a real medicine.
   - ❏ True
   - ❏ False

2. What is the main purpose of using placebo?
   - ❏ To deceive patients.
   - ❏ To prove the efficacy of the real drug in clinical trial.

3. Which of the followings are true about the 'double-blinded placebo control test'?
   - ❏ The purpose of the test is to measure if the medicine actually has an effect on patients.
   - ❏ 2 groups of patients are involved - 1 group receives placebo, and the other receives real drug.
   - ❏ Both the doctors and the patients involved do NOT know who are taking placebo.

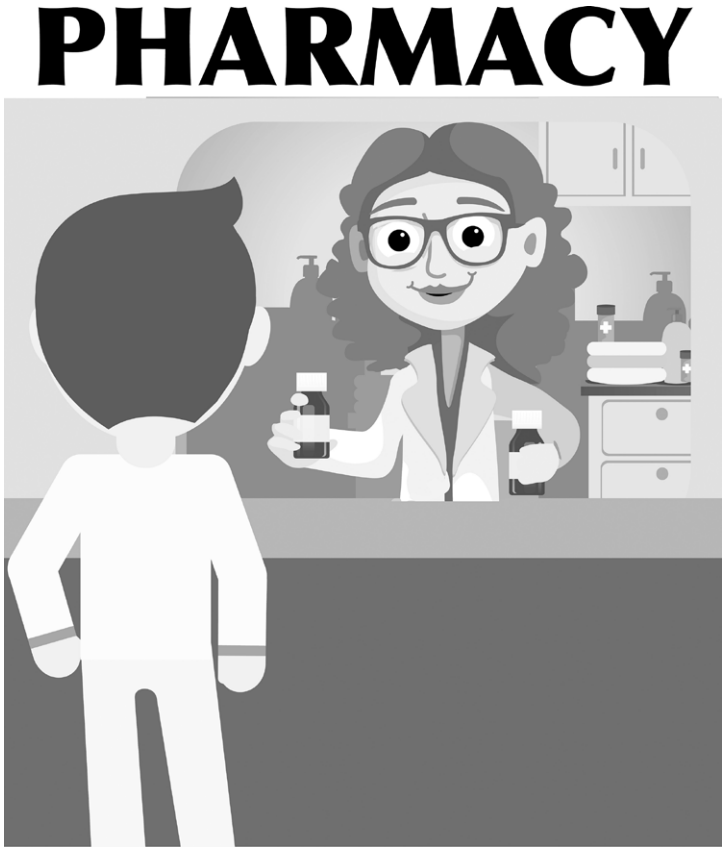
4. Research shows that the effectiveness of placebo to patients is the same across the world.
   - ❏ True
   - ❏ False

5. Some patients taking placebo also have a clinical improvement; and sometimes placebo may even outperform the real medicine.
   ❏ True
   ❏ False

6. What are the factors that may influence the effectiveness of placebo?
   ❏ Patients' believe about the placebo
   ❏ Pills' colour
   ❏ Location of the test
   ❏ Surrounding facilities

Task B: What makes placebo effective?

Study the cartoon below and answer the questions.



1. Which way of saying (Option 1/2/3) do you think would let the patient having more confidence in the 'drug'? Why?

2. What are the pros and cons of ‘placebo test’?

Pros	Cons

3. Challenging level (optional): Do you think that using placebo is moral? Please explain your answer by applying theories of ethics.

Worksheet 5: Placebo – Do Patients have Right to Know?

(For teachers' reference)

Placebo, sometimes known as 'sugar pill' or 'flake medicine', is a non-medicine prescription intended to deceive the patients. It can be in forms of pills, creams, inhalants, injections and etc. Sometimes patients with a placebo treatment will have a perceived or actual improvement in a medical condition. This is called the 'placebo effect'.

Task A: Placebo & Placebo Effect

*Watch the online video clip **'Stuff They Don't Want You to Know - The Placebo Effect'** at https://www.youtube.com/watch?v=v_feOG94IAs, and then answer the following questions:*

1. Placebo is a real medicine.
   - ☑ True
   - ❑ False

2. What is the main purpose of using placebo?
   - ☑ To deceive patients.
   - ❑ To prove the efficacy of the real drug in clinical trial.

3. Which of the followings are true about the 'double-blinded placebo control test'?
   - ❑ The purpose of the test is to measure if the medicine actually has an effect on patients.
   - ❑ 2 groups of patients are involved - 1 group receives placebo, and the other receives real drug.
   - ❑ Both the doctors and the patients involved do NOT know who are taking placebo.

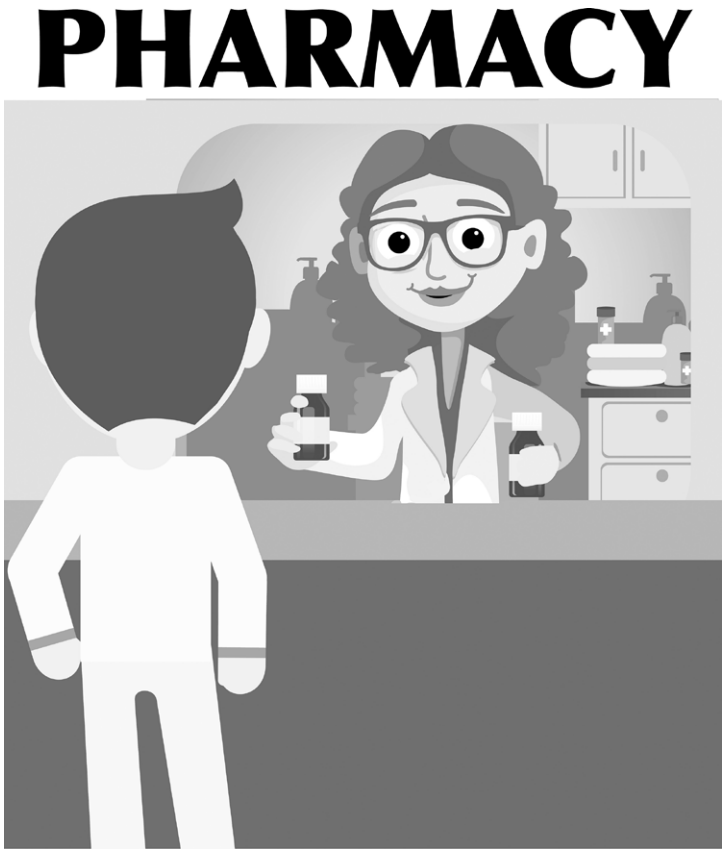
4. Research shows that the effectiveness of placebo to patients is the same across the world.
   - ☑ True
   - ❑ False

5. Some patients taking placebo also have a clinical improvement; and sometimes placebo may even outperform the real medicine.
   - ❑ True
   - ☑ False

6. What are the factors that may influence the effectiveness of placebo?
   - ❑ Patients' believe about the placebo
   - ❑ Pills' colour
   - ❑ Location of the test
   - ❑ Surrounding facilities

Task B: What makes placebo effective?

Study the cartoon below and answer the questions.



1. Which way of saying (Option 1/2/3) do you think would let the patient having more confidence in the 'drug'? Why?

2. What are the pros and cons of 'placebo test'?

Pros	Cons
• Patients may get healed without any side-effect of a real drug (Consequentialism) • It can provide clinical proofs on the efficacy of the real drug, which helps advancement of the pharmacy industry, that in turn benefits more patients in the long run (Utilitarianism) • It saves cost of the public medical expenses, as 'sugar pills' are much cheaper than real medicine. (Utilitarianism)	• It infringes patients' right to know, right to dignity, and right to autonomy, which are of high value (Value ethics) • It is a dishonest act in itself (Kantian/ Deontological ethics) • It may delay real medical treatment for the patient (Consequentialism) • Patients may have to pay an unreasonably high price for the 'sugar pills' in order to believe they are real medicine, which infringe the virtues of truth and fair (Virtue ethics) • Since placebo effects are psychogenic, after quitting placebo, the patient may feel even worse (Consequentialism)

3. Challenging level (optional): Do you think that using placebo is moral? Please explain your answer by applying theories of ethics.
(Refer to the Q2's answers)

Worksheet 6: Summary & Self-evaluation – Patients' rights

Write down the key learning points of this module.

(A) Patients' Rights
1.
2.
3.
4.
5.

(B) Patients' Responsibilities
1.
2.
3.
4.
5.

(C) Moral Dilemma: Euthanasia – Right to die!
1.
2.
3.
4.
5.

(D) Moral Dilemma: Placebo – Do Patients have Right to Know?
1.
2.
3.
4.
5.

Evaluate how well you have learnt (please put a '✓')

	Very good	Good	Fair	Poor
(A) Patients' rights				
(B) Patients' responsibilities				
(C) Moral Dilemma: Euthanasia – Right to die!				
(D) Moral Dilemma: Placebo – Do Patients have Right to Know?				

What question(s)/area(s) you want to learn more in this module of 'Patients' Rights'?

3. Gender Selection

3.1. Intended Learning Outcomes

By the end of the lessons, the students will be able to:

a. Analyze the reasons of gender selection;
b. Understand the methods of gender selection, and analyze the moral implications of the methods;
c. Evaluate the pros and cons of using embryo technology for gender selection;
d. Apply different ethical theories to make moral judgment related to gender selection.

* *Prerequisite knowledge: Normative Ethics, the nature of morality, moral principles, moral reasoning, theory of conduct, theory of value & virtue (Refer to 'NSS Ethics and Religious Studies Curriculum Support Materials - Compulsory Part: Ethics - Module 1: Normative Ethics')*

3.2. Introduction

Gender selection is the attempt to control the sex of the baby to achieve a desired sex. Some common artificial methods include preimplantation genetic diagnosis, intracytoplasmic sperm injection, cryopreservation* etc.

Demographers notice that in communities where male offspring are openly preferred, or where there are limits on the number of children one can legally bear, the sex ratio has been changed. In some countries, like India, China, Bangladesh and Pakistan, the sex ratio difference is quite severe (80 girls per 100 boys, while the biological sex ratio is around 95 girls to every 100 boys).

In the lessons, students will examine the reasons for sex selection. Furthermore, some ethical issues like sex-selective infanticide and embryo technology will be discussed.

Notes:

* *Preimplantation genetic diagnosis: to genetic profiling of embryos prior to implantation*
* *Intracytoplasmic sperm injection: a fertilization procedure in which a single sperm is injected directly into an egg*
* *Cryopreservation: a process where cells are preserved by cooling to sub-zero temperatures*

References:

- Fuse, Kana (2013). 'Daughter preference in Japan: A reflection of gender role attitudes?'. Demographic Research. Vol. 28, Article 36. Pp. 1021-1051.
- Mudde, Anna (2012). "Before You Formed in the Womb I Knew You': Sex Selection and Spaces". Hypatia vol. 25, no. 3 (Summer, 2010). At http://eds.b.ebscohost.com/eds/pdfviewer/pdfviewer?vid=8&sid=f7723a84-b7a7-49ff-a77f-6080360da4b2%40sessionmgr114&hid=108
- http://en.wikipedia.org/wiki/Intracytoplasmic_sperm_injection
- http://en.wikipedia.org/wiki/Cryopreservation
- http://en.wikipedia.org/wiki/Preimplantation_genetic_diagnosis
- http://en.wikipedia.org/wiki/Sex_selection
- http://www.demogr.mpg.de/publications%5Cfiles%5C161_1037176026_1_PDF%20Version.pdf

3.3. Teaching and learning processes

Suggested teaching period: 4 lessons

1. Reasons of gender selection

1.1. Teacher asks the students, 'Do you prefer having a son or a daughter in the future?' After counting the votes, ask them to explain their preferences.

1.2. Teacher separates students into 5 groups. Ask the group representatives to come out drawing the son/daughter preference cards (i.e. Card A-E). Each group studies the card and then demonstrates a role-play explaining why they prefer having sons/daughters as if they were the parents from the countries indicating on the cards.

1.3. Teacher shows the 3 banners in 'Worksheet 1: Gendercide', and then gather students' ideas on what messages they convey.

1.4. Ask students to brainstorm within their groups the reasons for the overall son preference, and then report their answers.

2. Methods of gender selection

2.1. Teacher asks the students to think of any gender selection methods that they know. They may also collect the methods from folk wisdom. Then, teacher goes through with them the methods in 'Worksheet 2: Methods of gender selection.'

2.2. Ask students to complete Question 1 (and Question 2 if appropriate) in pair or in group. Then teacher facilitates a class discussion.

3. Ethical issues of gender selection

3.1. Teacher plays the video on 'Gender Selection - 60 Minutes with Dr Daniel Potter' (~13 mins) at https://www.youtube.com/watch?v=zNoM--mBbC0, and ask the students to complete 'Worksheet 3: Edison and her frozen sister'. Discuss their answers.

3.2. Teacher divides the class into 2 groups for the debate on 'Embryo technology for gender selection should be banned.' Ask them to prepare for their arguments at home. To facilitate their preparation and consolidation, 'Worksheet 4' can be used.

3.3. In the debate, students may evaluate the performance of both themselves and their peers using the evaluation tables in Worksheet 4.

4. Conclusion and students' self-evaluation

4.1. Teacher reviews the key learning points of the topic on 'gender selection' with the students.

4.2. Ask students to consolidate their knowledge and evaluate their learning outcomes by completing 'Worksheet 5: Summary & self-evaluation'.

Card A: Son preference in China

http://www.voyagesphotosmanu.com/Complet/images/Chinese_youth_gr.jpg

Very obviously in the traditional Chinese society, sons are much more preferred than daughters. Sons are granted more accessibility to educational and medical chances. As a result, the sex ratio in favor of boys grows higher through ages.

The introduction of the One-Child Policy since 1970s, and the spread of sex-selective technology since 1985 sharpen the unbalanced sex ratio.

In the Confucian-influenced and male-centered Chinese society, sons are preferred because of the following reasons:

- Sons can continue the family line and name.
- Sons provide manual labour in traditional agricultural societies.
- Sons are expected to be the financial pillar in the family.
- Sons are legitimate heirs of the family property.

Source: http://www.wikigender.org/index.php/Son_preference_in_China

Card B: Son preference in India

https://hk.images.search.yahoo.com/images/view;_ylt=A8tUwJn9Hg1VFiEAeYG1ygt.;_ylu=X3oDMTIzbjEwc2NvBHNlYwNzcgRzbGsDaW1nBG9pZANiYTIyZGRlYTM4OGE2MTMxODkzNTEzOTk1OTcxNDk0YQRncG9zAzE2BGl0A2Jpbmc-?.origin=&back=https%3A%2F%2Fhk.images.search.yahoo.com%2Fsearch%2Fimages%3F_adv_prop%3Dimage%26va%3DIndian%2Bkids%26fr%3Dyfp-t-403-hk%26tab%3Dorganic%26ri%3D16&w=500&h=338&imgurl=farm1.static.flickr.com%2F24%2F63148453_2a9a2752ee.jpg&rurl=http%3A%2F%2Fwww.indiavision.com%2Fblog%2F2009%2F03%2F130.blg&size=127.0KB&name=Malnutrition+ails+%3Cb%3EIndian+kids%3C%2Fb%3E&p=Indian+kids&oid=ba22ddea388a6131893513995971494a&fr2=&fr=yfp-t-403-hk&tt=Malnutrition+ails+%3Cb%3EIndian+kids%3C%2Fb%3E&b=0&ni=21&no=16&ts=&tab=organic&sigr=11ftmv65g&sigb=13hhr03rg&sigi=11i6uk15a&sigt=114jiit1u&sign=114jiit1u&.crumb=fwNsEPYm9v3&fr=yfp-t-403-hk

In India, gender inequality is shown clearly in a preference for sons over daughters. Lots of parents think that daughters are unvalued, and would stop breeding and raising baby girls at birth, which make a remarkable sex ratio in favor of boys.

Scholars explain the reasons for son preference in India as follows:

- Dowry and wedding expenses: In India, marrying off daughters can become a huge family expense. On the other hand, more sons can eventually mean more resources.
- Support in old age from sons: Sons are living with the parents; while daughters would be married off to some distance from their home village.
- Sons can provide labor force to the family and become the financial supporters.

Sources: http://paa2012.princeton.edu/papers/122478
http://www.icrw.org/where-we-work/son-preference-india

Card C: Daughter preference in Japan

Researchers find out that over the past few decades, gender preference for children in Japan has progressively shifted from son preference to a noticeable daughter preference.

Reasons for the increasingly daughter preference include:

- Mothers want companionship and old-age support from a daughter.
- To avoid obstacles associated with raising a son successfully (e.g. behavioural problems)
- Less pressure from in-laws to have sons due to changes in family structure. Nuclear family structure, instead of extended one with in-laws living together, is prevailing in Japan nowadays. In-laws have fewer chances to urge the couples having sons.

Reference: http://www.demographic-research.org/volumes/vol28/36/

Card D: Increasing Daughter Preference in Korea nowadays

Studies report that more young Korean couples prefer a daughter to a son. 37.4% of fathers said that they wanted to have baby girls rather than boys, while 28.6% gave the opposite response—the remaining 34% said they didn't care about the sex of their newborns.

Son preference has phased out eventually in Korea. The remarkable increment in the daughter preference in the 21st Century in Korean is a results of the following factors:

- Less influenced by the hierarchical and male-centered Confucian culture
- More young couples feel they will enjoy raising daughters more than sons

Reference: http://www.koreatimes.co.kr/www/news/opinon/2012/12/202_58940.html

Card E: Daughter preference in Hungary

http://www.bing.com/images/search?q=Hungarian+baby+girl&qpvt=Hungarian+baby+girl&FORM=IGRE#view=detail&id=6EF79DCB18254C79CC7CFB83C53D6FF0EE690EFC&selectedIndex=127

A study shows that mothers (especially a low-status group) in Hungary have a daughter preference. They "*have a female-biased sex ratio at birth, are more likely to abort a child after having had one or more daughters, nurse their daughters longer, and send their daughters to school for longer*".

The daughter-associated attributes give an account on this phenomenon. Daughters are deemed to be more affective, attentive in learning, obedient and attached to parents.

Reference: http://en.wikipedia.org/wiki/Trivers%E2%80%93Willard_hypothesis

Worksheet 1: Gendercide

Figure 1: http://newcanadianmedia.ca/media/k2/items/cache/ce60eec033aeb16c14aa1ddcc4628f03_L.jpg

Figure 2: http://www.english-online.at/news-articles/people/girl-abortion-in-india.jpg

Figure 3: http://4.bp.blogspot.com/_zddxS7Nv1Bg/SDzG9BhdDvI/AAAAAAAAAGk/OWNUrl0vZjQ/s400/one+child+policy.jpg

1. What messages do the above banners convey?

2. Why is there a need to design such kind of banner? What phenomena does it reflect?

3. What are the reasons for son preference?

Worksheet 1: Gendercide

(For teachers' reference)

1. What messages do the above banners convey?
    - In Figure 1, it shows that sex selection is gendercide, which must be stopped.
    - In Figure 2, the banner advocates that in order to maintain a balance of the sex ratio in India, families should still have girls. From the scene that 4 boys are passing by the banner, it reflects that the male-female ratio is already imbalanced in the country (around 100:80).
    - In Figure 3, it shows that there is gender preference in China – sons are more popular than daughters. Under the 'One-Child Policy', abortion, killing or abandonment of daughters are common especially in the rural areas.

2. Why is there a need to design such kind of banner? What phenomena does it reflect?
    - Banners with the theme of 'protecting daughters' or 'preventing gendercide' are designed because such phenomena are severe.
    - In some countries, like India, China, Bangladesh, Pakistan etc., the sex ratio is 80 girls per 100 boys, while the biological sex ratio is around 95 girls to every 100 boys. Such condition is quite alarming and needs to be stopped.

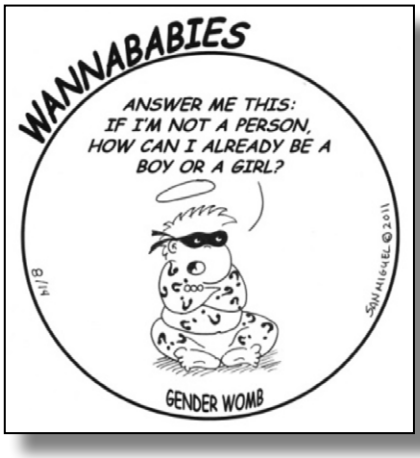
3. What are the reasons for son preference?
    - Sons can continue the family line and name.
    - Fathers want to demonstrate their masculinity by having sons.
    - Sons provide manual labour in traditional agricultural societies.
    - Sons are expected to be the financial pillar in the family.
    - Sons are legitimate heirs of the family property.
    - ons may be more employable in the future.
    - In some countries, sons are more likely to provide support in their parents' old age, for they live with the parents; while daughters would be married off to some distance.
    - In India, sons do not have to provide dowry payments, but rather being on the receiving end of this practice.
    - In some regions, sons enjoy more legal benefits. For example in Hong Kong, only male indigenous villagers are benefited from the 'New Territories Small House Policy'.

Worksheet 2: Methods of gender selection

Study the following gender selection methods, and answer the questions below:

A. **Natural methods** – There are various non-scientific traditional methods across different countries attempting to attain the baby with the parents' desired sex. For example, methods associated with diet control, posture and timing of intercourse, bedroom decoration and feng-shui settings, etc. are used. However, significant empirical successful cases using such methods are hardly proven.

B. **Abortion** – From 16 weeks after pregnancy, people can predict the baby gender using ultrasound. Some parents would choose abortion after they know that the babies are not of the sex they want. Many medical reports indicate that after removing a 16-week fetus from the mother's womb, it still moves, and could be regarded as human.



http://www.eehealthbook.com/templates/images/16-week-b.jpg

C. **Embryo technology** – The development of embryo technology enables people to choose their babies of designated gender. Below are some possible technologies to create the desired baby gender:

- Preimplantation genetic diagnosis: to genetic profiling of embryos prior to implantation
- Intracytoplasmic sperm injection: a fertilization procedure in which a single sperm is injected directly into an egg
- Cryopreservation: a process where cells are preserved by cooling to sub-zero temperatures

D. **Neonaticide/infanticide** – Neonaticide means killing a child in the first 24 hours of his/her birth; while infanticide refers to killing children under 12-month old. In some countries, like in China, parents might kill newborn daughters because they were unable to transit the family name, and were deemed to be weaker and unhelpful for doing agricultural work in the older days.

E. **Baby dumping** – It refers to parents (generally mothers) abandoning or discarding a child younger than 12 months in a public or private place with the intent of disposing of them. It often happens in poor societies where parents are not financially capable of taking care of a child of an undesirable sex.

Reference:

- http://en.wikipedia.org/wiki/Neonaticide
- http://en.wikipedia.org/wiki/Child_abandonment

1. In your view, which of the above-mentioned gender selection methods are acceptable? Which are not? Explain your answer.

2. Challenging level (optional): Applying the theories of ethics, judge the ethicality of these gender selection methods.

Method	Moral/ immoral	Theory of ethics	Justification
Natural methods			
Abortion			
Embryo technology			
Neonaticide / infanticide			
Baby dumping			

Worksheet 3: Edison and her frozen sister

Watch the video clip on **'Gender Selection - 60 Minutes with Dr Daniel Potter'** at *https://www.youtube.com/watch?v=zNoM--mBbC0,* and then answer the questions.

1. If you were the couple in the video, would you try using embryo technology to obtain a daughter after having 7 sons? Why or why not?

2. If you were the couple, will you tell your daughter how she was 'created'? Why or why not? What are the potential impacts on her?

3. What are the different viewpoints of Dr Daniel Potter and Dr Sandra Hecker towards sex selection? Whose viewpoint do you tend to support? Why?

	Dr Daniel Potter (the male doctor helping the couple to create the test-tube embryo)	**Dr Sandra Hecker** (the female doctor of Australian Government National Health and Medical Research Council [NHMRC])
For/against		
Viewpoints		

My viewpoints:

4. What do you think about the 'frozen embryos'? Imagine if you were one of them with thinking and feelings, what if you are in the following situations? Alternatively, you may express your views by drawing, writing a short poem, narration, poster, photo/video production, etc.

Situation	Your thinking & feelings
A. You are frozen permanently	
B. You are destroyed	
C. You are put into a stranger's womb	
D. You are put into your mother's womb, and are born 5 years after your 'twin'?	

5. Challenging level (optional): 'Gender Selection is a slippery slope to Design Baby.' Do you agree? Please explain.

Worksheet 3: Edison and her frozen sister *(For teachers' reference)*

3. What are the different viewpoints of Dr Daniel Potter and Dr Sandra Hecker towards sex selection? Whose viewpoint do you tend to support? Why?

	Dr Daniel Potter (the male doctor helping the couple to create the test-tube embryo)	**Dr Sandra Hecker** (the female doctor of Australian Government National Health and Medical Research Council [NHMRC])
For/against	• For	• Against
Viewpoints	• What he has been doing with the embryo technology is 'to help people connect with their destiny', and he is the 'facilitator' to make the couple's dream come true. • Unlike in China where people perform gender selection by infanticide, enabling gender selection through embryo technology is more humane • It is the trend for the future	• It is sort of commodifying / commercializing a child • It is a slippery slope to 'Design baby' (e.g. designated sex, blond hair, blue eyes, to be very intelligent, etc.) • The right to pass the embryo into life should be based independent on whether it is male or female • It may lead to global gender imbalance

My viewpoints:

Worksheet 4: Debate – Embryo technology for gender selection should be banned.

Should not be banned	Should be banned

Self-evaluation

	Self-evaluation 5=outstanding ,1=very poor				
Am I able to make substantial arguments?	5	4	3	2	1
Am I able to give concrete examples to support my arguments?	5	4	3	2	1
Am I able to employ individual ethical theory accurately with appropriate evidence?	5	4	3	2	1
Am I able to present my view/arguments in a logical and systematical way?	5	4	3	2	1
Am I able to respond to the arguments made by the counterpart?	5	4	3	2	1

Peer evaluation

	Peer-evaluation 5=outstanding ,1=very poor				
Is the counterpart able to make substantial arguments?	5	4	3	2	1
Is the counterpart able to give concrete examples to support their arguments?	5	4	3	2	1
Is the counterpart able to employ individual ethical theory accurately with appropriate evidence?	5	4	3	2	1
Is the counterpart able to present their view/ arguments in a logical and systematical way?	5	4	3	2	1
Is the counterpart able to respond to the arguments made by our side?	5	4	3	2	1

Worksheet 4: Debate – Embryo technology for gender selection should be banned. *(For teachers' reference)*

Should not be banned	Should be banned
• It is a sign of female empowerment that allows couples to make well-informed family planning decisions. • It is an expression of reproductive rights.	• It is doubted that whether women could truly express free choice under pressure from family and community.
• It helps prevent occurrences of unintended pregnancy, abortion and child neglect.	• During the process of creating the test-tube embryos, there are 'extra embryos'. No matter freezing or destroying them would lead to ethical problems as well. • It may contribute to stronger gender stereotypes.
• It minimizes intimate partner violence if the partner fails to reproduce a baby with the desired sex.	• It is not a solution to domestic violence.
• Some scholars argued that governments should pay couples to choose to have female children in order to ensure population demographic equality (i.e. equal numbers of boys and girls). • Actual experience in Western cultures provides no evidence for any degree of gender imbalance from technologies which have long been available and legal.	• Empirically, if gender selection is permitted, more parents would choose sons, for example, in Far East, such as India and China, & Eastern Europe such as Albania or Azerbaijan. • In those gender-imbalanced countries, there is a lack of opportunity for many men to marry. Crimes such as demand for prostitution, mass emigration, and the selling of brides etc. occurred increasingly.

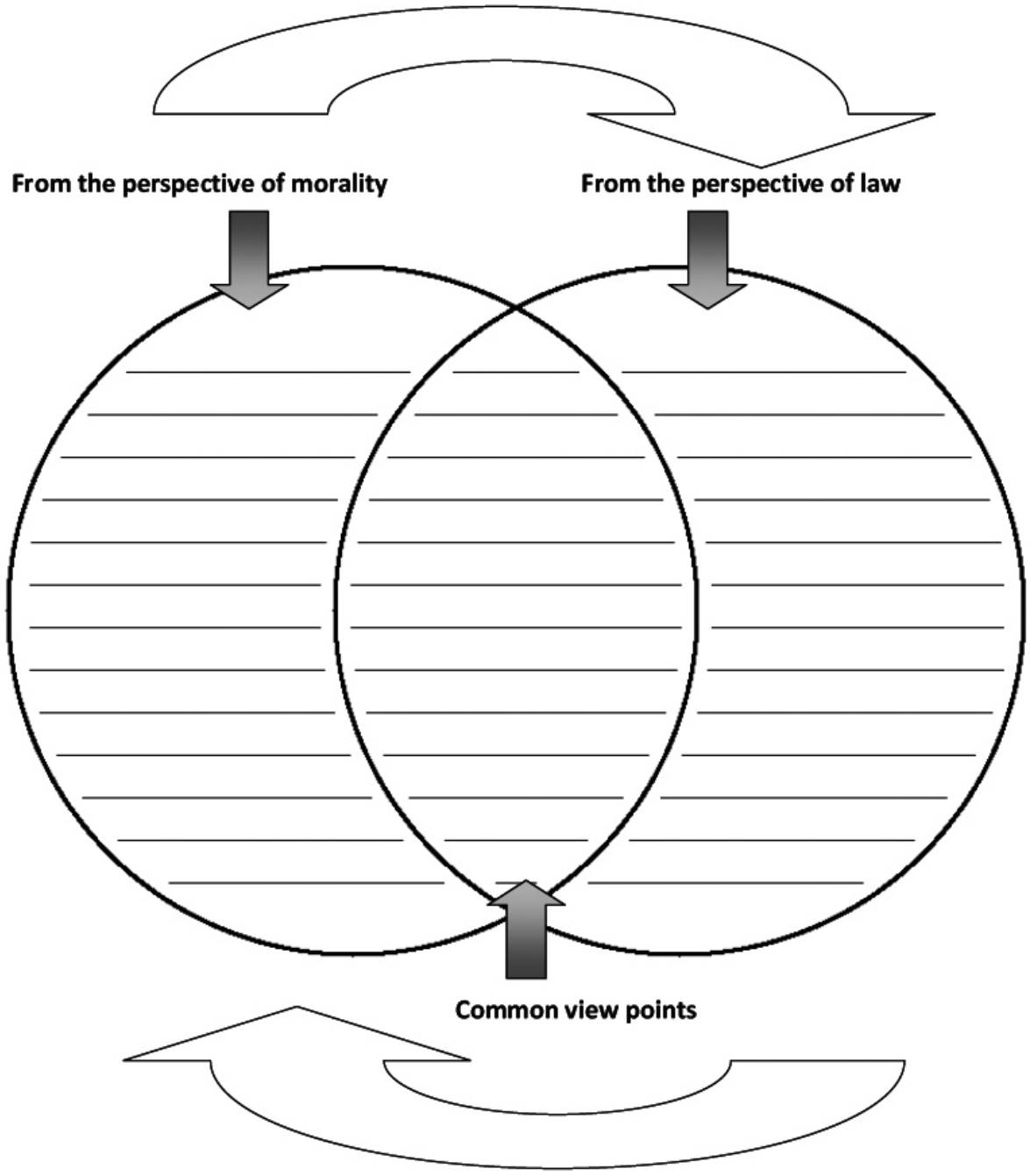
References:

• http://en.wikipedia.org/wiki/Sex_selection

• http://jme.bmj.com/content/27/5/302.full

Worksheet 5

Compare and contrast the view points and consequences on gender selection from the perspectives of morality and law; use arrows and annotate the relationship between the two:



Key for Teachers' reference:

Worksheet 6: Summary & Self-evaluation – Gender Selection

Write down the key learning points of this module.

(A) Reasons for gender selection
1.
2.
3.
4.
5.

(B) Methods of gender selection
1.
2.
3.
4.
5.

(C) Ethical issues of gender selection
1.
2.
3.
4.
5.

Evaluate how well you have learnt (please put a '✓')

	Very good	Good	Fair	Poor
(A) Reasons of gender				
(B) Methods of gender				
(C) Ethical issues of gender selection				

What question(s)/area(s) you want to learn more in this module of 'gender selection'?

4. Genetic Engineering

4.1. Intended Learning Outcomes

By the end of the lessons, the students will be able to:

a. Understand the meaning of genetic engineering and its usages in various aspects like agriculture and food industry, medicine, research, and entertainment etc.
b. Evaluate the impacts of genetic engineering on our daily life.
c. Analyze the moral issues raised in the development of genetic engineering.
d. Apply different ethical theories to make moral judgment on genetic engineering.

* *Prerequisite knowledge: Normative Ethics, the nature of morality, moral principles, moral reasoning, theory of conduct, theory of value & virtue (Refer to 'NSS Ethics and Religious Studies Curriculum Support Materials - Compulsory Part: Ethics - Module 1: Normative Ethics')*

4.2. Introduction

Genetic engineering is the artificial manipulation, modification, and recombination of DNA (i.e. the carrier of genetic information which achieves its effects by directing the synthesis of proteins) or other nucleic acid molecules in order to modify an organism or population of organisms. An organism generated through genetic engineering is considered to be a genetically modified organism (GMO). The technology was invented in the 1970s and has flourished rapidly in the past 3 decades in various fields, including agriculture and food industry, medicine, research, and entertainment etc.

The development of genetic engineering and its applications on plants, animals and human beings have aroused huge ethical controversies over the world. According to the information provided by the World Health Organization (WHO), 'Switzerland is the only country that has made a vote on genetic engineering in the future, with nearly two-thirds of its population voting against a referendum to ban genetic engineering.'

In these lessons, students will evaluate the impacts of genetic engineering on our daily life, and analyze the moral issues raised in its development, especially those

related to genetically modified (GM) foods and human genetic engineering.

References:

- Beauchamp, T.L. (et al.) (2008). Contemporary Issues in Bioethics. USA: Thomas Higher Education.
- Shannon, T.A. (1997). An Introduction to Bioethics. New York: Paulist Press.
- http://en.wikipedia.org/wiki/Genetic_engineering
- http://www.globalchange.com/geneticengin.htm
- http://www.who.int/genomics/public/patientrights/en/

4.3. Teaching and learning processes

Suggested teaching period: 4 lessons

1. Definition of Genetic Engineering (GE)

1.1. Prior to the lesson, teacher asks students (individually or in groups) to search for and take photos if possible or download photos from internet of some genetically modified foods (GM foods) and non-GM foods in a supermarket.

1.2. During the lesson, students present their findings.

1.3. Teacher asks, 'Would it affect your decision on whether or not to buy genetically modified food? Why or why not?'

1.4. Teacher shows some items of genetically modified food one by one (cf. Photo 1-6) and asks if students would eat/drink them. Students are also required to provide explanations.

1.5. Teacher asks students to complete **'Worksheet 1: Genetic Engineering – why and what?'** Then, teacher asks the students to vote and facilitates a class discussion.

2. GM foods controversy

2.1. Teacher plays (twice if necessary, or instruct students to watch it before coming to lessons / tell students to search for similar video in Chinese) the following 3 videos and asks the students to complete **'Worksheet 2: Genetically Modified (GM) foods and you'**. Check their answers afterwards.

➢ 'How Are GMOs Created?' (~5 mins) at *https://www.youtube.com/*

watch?v=2G-yUuiqIZ0

- ➢ '10 Worrying Facts About Genetically Modified Food' (~3 mins) at *https://www.youtube.com/watch?v=OB_0OLKGMpQ*
- ➢ 'Genetically Modified Organism (GMO) - Myths and Truths' (~6 mins) at *https://www.youtube.com/watch?v=M_ztZGbLEJ0*

2.2. **Forum on GM foods** – Teacher separates the students into 6 groups, with each group performing one of the following roles: (a) consumers; (b) GM foods manufacturers; (c) environmentalists; (d) farmers; (e) scientists; (f) religious leaders. Students may prepare their presentation by referring to the information on **Worksheet 2** in the class, or by searching for additional information after class. Then, teacher (or a designated student) facilitates the forum. During the forum, students may jot down notes and do a peer evaluation using **'Worksheet 3: Forum on GM foods'**.

3. Human Genetic Engineering

3.1. Teacher plays (twice if necessary) the video on 'Human Genetic Engineering' (~8 mins) at *https://www.youtube.com/watch?v=dKBfxoPnT7g*, and asks the students to complete **'Worksheet 4: Human Genetic Engineering'** in pairs.

3.2. Teacher facilitates a class discussion.

4. Conclusion and students' self-evaluation

4.1. Teacher reviews the key learning points of the topic on 'genetic engineering' with the students.

4.2. Ask students to consolidate their knowledge and evaluate their learning outcomes by completing 'Worksheet 5: Summary & self-evaluation'.

Photo 1: Genetically Modified soybean

http://www.nutricion.pro/general/consejos-nutricionales-para-alergia-a-la-caseina/

Soy has been genetically modified to resist herbicides. In 2007, over half of the world's soybean crop (58.6%) was genetically modified.

References:

http://consciouslifenews.com/gmo-alert-top-10-genetically-modified-foods-avoid-eating/

http://www.gmo-compass.org/eng/grocery_shopping/crops/19.genetically_modified_soybean.html

Photo 2: 'Fishy' tomatoes & strawberries

Genetic engineers inject arctic fish genes into tomatoes and strawberries to make them frost-tolerant. For vegetarians, plants containing animal genes may hardly be acceptable.

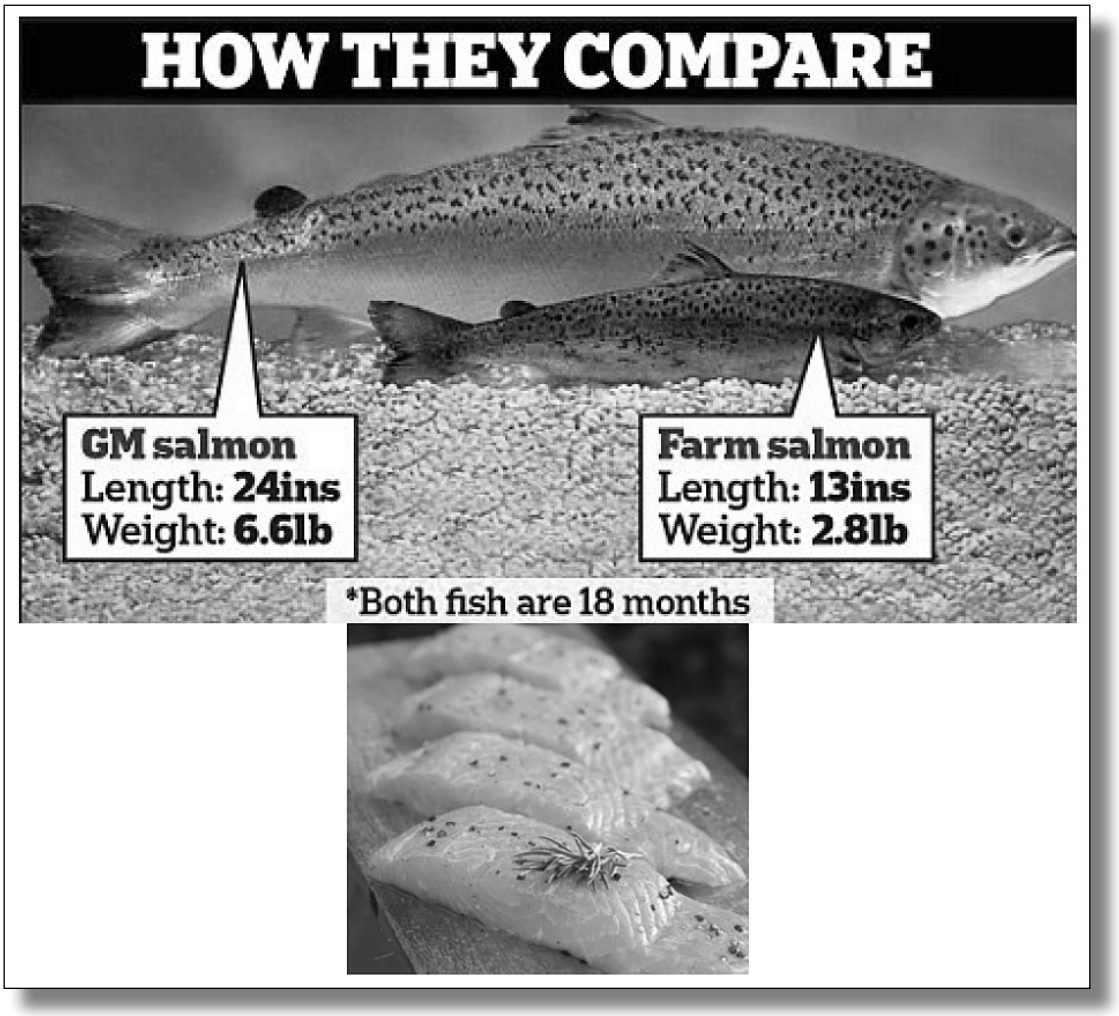
Reference: http://thegreendivas.com/2011/06/10/waiter-theres-a-fish-in-my-tomato-a-gmo-story/

Photo 3: Sorpio cabbage

Genetic engineers combine the gene of poison in the tail of a scorpion with a cabbage. These genetically modified cabbages kill caterpillars.

Reference: http://www.globalchange.com/geneticengin.htm

Photo 4: Genetically Modified salmon



https://www.google.com.hk/search?q=GM+salmon&espv=2&biw=999&bih=514&tbm=isch&imgil=FatNbN5fhVQCzM%253A%253BXGAA7yGout_G-M%253Bhttp%25253A%25252F%25252Fwww.bluechannel24.com%25252F%25253Fp%2525253D23564&source=iu&pf=m&fir=FatNbN5fhVQCzM%253A%252CXGAA7yGout_G-M%252C_&usg=__79umyAac_4S5xqGuLmINv8jgmzE%3D&dpr=1&ved=0CDIQyjc&ei=mLMkVcDNNMLt8gWt8IGQDA#imgrc=sQDDj5g7QSWqkM%253A%3BNXZaRXMOCu8X0M%3Bhttp%253A%252F%252Fscienceprogress.org%252Fwp-content%252Fuploads%252F2011%252F09%252Fgmo_salmon_compare.jpg%3Bhttp%253A%252F%252Fscienceprogress.org%252F2011%252F09%252Fthe-gmo-salmon-struggle%252F%3B468%3B269

The biotechnology industry says it has genetically modified a fish that grows at twice the normal rate, so it can get to market sooner and make more money faster.

Reference: http://www.foodandwaterwatch.org/food/genetically-engineered-foods/stop-frankenfish/

Photo 5: Silky spider goat milk

Genetic engineers have created goats with spider genes that create "silk" in their milk. Apart from increasing the silkiness of the beverage, scientists also use its spider web protein to make bulletproof vests.

However, religious groups such as Orthodox rabbis (Jewism) or Muslim leaders perceive such milk as 'non-kosher' or 'non-halal' – i.e. unclean/ forbidden.

References:
http://www.globalchange.com/geneticengin.htm
http://thegreendivas.com/2011/06/10/waiter-theres-a-fish-in-my-tomato-a-gmo-story/
http://219greenconnect.com/wp-content/uploads/2013/10/GMO-food-Controversy.pdf

Photo 6: Chickens with multiple legs and wings

http://www.businessinsider.com/kfc-mutant-chickens-are-not-real-2014-2

(This is NOT a real photo. In 2014, a rumor that KFC uses mutated chickens with extra limbs is going viral on Facebook and Twitter.
Read more: http://www.businessinsider.com/kfc-mutant-chickens-are-not-real-2014-2#ixzz3Y1TM3t2T)

Theoretically, genetic engineers are able to create chickens with multiple legs and wings to cope with the increasing demand on chicken consumption.

Reference: http://www.globalchange.com/geneticengin.htm

Worksheet 1: Genetic Engineering – why and what?

Read the following information and then answer the question below.

Definition of 'genetic engineering'

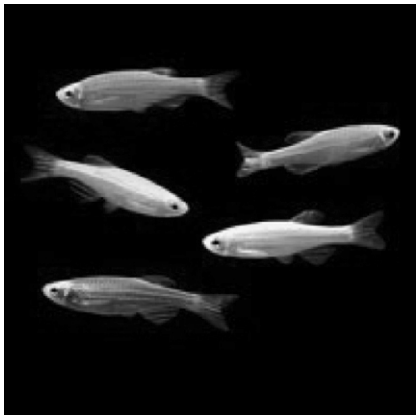
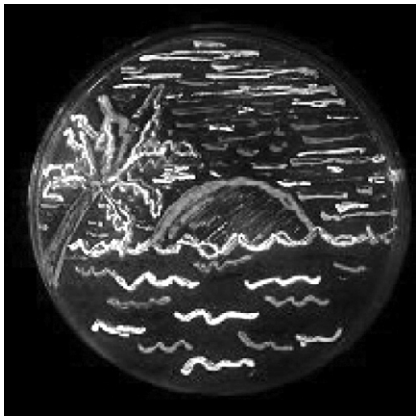
Genetic engineering is the artificial manipulation, modification, and recombination of DNA (i.e. the carrier of genetic information which achieves its effects by directing the synthesis of proteins) or other nucleic acid molecules in order to modify an organism or population of organisms. An organism generated through genetic engineering is considered to be a genetically modified organism (GMO). The technology was invented in the 1970s and nurished rapidly in the past 3 decades in various fields, including agriculture and food industry, medicine, research, and entertainment etc.

Agriculture and food industry – GM foods has been selling in the markets since 1900s. New genes are introduced for a variety of reasons, whether it's to grow higher yields, make crops more resistant to infection and pests, or even to infuse them with extra nutrients and vitamins. Some common GM foods include: milk, soy, corn, potatoes, rice, papaya, tomatoes, canola, etc.

Medicine - Genetic engineering has been widely used in the medical field. Insulin and human growth hormone were the first 2 commercial medical products. Other medicine or treatment for cancer, immune deficiency, heart attacks etc. have also been produced using genetic engineering. In addition, vaccines and artificial transplanting organs created with DNA technolgy are also available. Futhermore, gene therapy has become more and more prevailing in both preventive and remedial ways while malfunction genes are detected.

Research - Genetic engineering unvails a new chapter in natural science. Genes and other genetic information from a wide range of organisms are transformed into bacteria for storage and modification, creating genetically modified bacteria in the process. Bacteria are cheap, easy to grow, clonal, multiply quickly, relatively easy to transform and can be stored at -80 °C. An isolated gene can be stored inside the bacteria providing an unlimited supply for research and experiments.

Entertainment – Novelties such as glowing pets, lavender-colored carnations, blue roses, BioArt etc. are made available for trend-followers.

GloFish	Glowing kitten	BioArt
		
http://www.thatpetplace.com/aquarium-livestock/glofish#!glofish	http://www.livescience.com/15994-glow-dark-cats-aids-virus-research.html	http://en.wikipedia.org/wiki/BioArt

References:

http://en.wikipedia.org/wiki/Genetic_engineering

http://en.wikipedia.org/wiki/GloFish

http://gmoinside.org/gmo-timeline-a-history-genetically-modified-foods/

http://global.britannica.com/EBchecked/topic/228897/genetic-engineering

http://recipes.howstuffworks.com/5-common-genetically-modified-foods.htm http://www.infoplease.com/cig/biology/dna-technology-applications.html

In which of the following aspects do you think it is worthwhile to develop genetic engineering? Why or why not?

Aspect	**Worthiness of development** 5= very worthy, 1= not worthy at all	**Reasons**
Agriculture and food industry	5 4 3 2 1	
Medicine	5 4 3 2 1	
Research	5 4 3 2 1	
Entertainment	5 4 3 2 1	

Worksheet 2: Genetically Modified (GM) foods and you

Task A:

Watch the video on **'How Are Genetically Modified Organisms (GMOs) Created?'** at *https://www.youtube.com/watch?v=2G-yUuiqIZ0*, and answer the question.

1. What are the **advantages** of GM foods (e.g. GM papaya)?

Task B:

Watch the video on **'10 Worrying Facts About Genetically Modified Food'** at *https://www.youtube.com/watch?v=OB_0OLKGMpQ*, and answer the question.

2. What are the **disadvantages** of GM foods?

Task C:

Watch the video on **'Genetically Modified Organism (GMO) - Myths and Truths'** at *https://www.youtube.com/watch?v=M_ztZGbLEJ0*, and answer the question.

3. What are the counter arguments for the viewpoints concerning GM foods below?

* *Fill in the blanks using the words below. Some can be used more than once.*		
seeds	biodegradable	uncontrolled
nutritional content	plant diseases	crop performance
allergenic	chemically farmed	nutrients
fossil fuel	food supply	environment
greenhouse gases	mutations	safety studies
allocation of resources	herbicides	

Pro-GM foods arguments	Counter Arguments
Increase crop yields	GM crops do not increase intrinsic yield. Some GM herbicides kill natural (1)_____ and organisms in the soil, leading to (2)_____.
Lower cost for farmers	Farmers have to pay more for GM (3)_____ and (4)_____.
Reduce use of herbicides / pesticide	GE in fact leads to increasing use of herbicides / pesticide. Some GM herbicides (e.g. 'Roundup' herbicide) are not (5)_____ as claimed, and even are 'dangerous for the environment'
Genetic Engineering (GE) is a safe and beneficial process, and it is an extension of natural plant propagation	It is a lab-based technique where a foreign gene is inserted into the DNA of the plant. This is an (6)_____ process, because the site of insertion is random and may potentially damage the plant's genetic makeup. The (7)_____ that occur during the genetic engineering process can lead to many unexpected changes, such as:

	➢ poor (8)_____ ➢ alteration in the food's (9)_____ ➢ toxic & (10)_____ effects ➢ unforeseen harm to the (11)_____.
GE is a climate change solution	GE does nothing to solve the growing global problem. GM crops are as energy-hungry as any other (12)_____ crops because they are largely dependent on herbicides made with (13)_____. Furthermore, they depend on nitrogen fertilizer which emits (14)_____.
GMOs are energy-friendly because of the 'no-till method', which reduces the number of tractor passes	Research reveals that even though the no-till method did reduce farm operations, large amounts of energy are still consumed due to the production of (15)_____ used on GM crops.
GE helps eliminate world hunger	GE will not help eliminate world hunger. It does not protect the security of our (16)_____. There are no GE crops available that increase intrinsic yield. World hunger is actually an issue of (17)_____
GMOs are safe	There are no conclusive (18)_____ on GMOs, as independent researchers are prohibited to use GE crops for their studies.

Worksheet 2: Genetically Modified (GM) foods and you

(For teachers' reference)

Task A:

Watch the video on **'How Are Genetically Modified Organisms (GMOs) Created?**' at https://www.youtube.com/watch?v=2G-yUuiqIZ0, and answer the question.

1. What are the **advantages** of GM foods (e.g. GM papaya)?
    - Resistant to bacteria/virus (diseases), pests, weeds and droughts;
    - Reduce the use of pesticide which is harmful to the environment;
    - Provide improved nutrition;
    - Increase crop and provide steady food supply to consumers;
    - Cheaper cost for consumers;
    - Enhance the food quality

Task B:

Watch the video on '**10 Worrying Facts About Genetically Modified Food'** at *https://www.youtube.com/watch?v=OB_0OLKGMpQ*, and answer the question.

Genetic engineering: The world's greatest scam?

https://www.youtube.com/watch?v=1H9WZGKQeYg (英文版)

https://www.youtube.com/watch?v=doxTzjCQ5Ds (中文字幕)

2. What are the **disadvantages** of GM foods?
    - A pesticide made from scorpion poison has been injected into cabbages, which may be harmful to the consumers.
    - Studies suggest that animals on GM diets are at greater risk of developing cancer, and are more likely to have infertile offspring.
    - Consumers may not have informed choice of food. 70% of the food items on shelves in US contain GMOs, but many of them are unlabeled.
    - GM foods may have a link to some human diseases – e.g. Morgellons disease (an illness creates a sensation of bugs crawling underneath the skin), allergies, bleeding stomachs, or even deformities.
    - GMOs may cause unforeseen long-term side effects on the environment, since seeds cross-pollinate in the wild is uncontrollable.

Task C:

Watch the video on **'Genetically Modified Organism (GMO) - Myths and Truths'** at *https://www.youtube.com/watch?v=M_ztZGbLEJ0*, and answer the question.

3. What are the counter arguments for the viewpoints concerning GM foods below?

* *Fill in the blanks using the words below. Some can be used more than once.*		
seeds	biodegradable	uncontrolled
nutritional content	plant diseases	crop performance
allergenic	chemically farmed	nutrients
fossil fuel	food supply	environment
greenhouse gases	mutations	safety studies
allocation of resources	herbicides	

Pro-GM foods arguments	Counter Arguments
Increase crop yields	GM crops do not increase intrinsic yield. Some GM herbicides kill natural (1) nutrients and organisms in the soil, leading to (2) plant diseases.
Lower cost for farmers	Farmers have to pay more for GM (3) seeds and (4) herbicides.
Reduce use of herbicides / pesticide	GE in fact leads to increasing use of herbicides / pesticide. Some GM herbicides (e.g. 'Roundup' herbicide) are not (5) biodegradable as claimed, and even are 'dangerous for the environment'
Genetic Engineering (GE) is a safe and beneficial process, and it is an extension of natural plant propagation	It is a lab-based technique where a foreign gene is inserted into the DNA of the plant. This is an (6) uncontrolled process, because the site of insertion is random and may potentially damage the plant's genetic makeup. The (7) mutations that occur during the genetic engineering process can lead to many unexpected changes, such as:

	➢ poor (8) crop performance ➢ alteration in the food's (9) nutritional content ➢ toxic & (10) allergenic effects ➢ unforeseen harm to the (11) environment.
GE is a climate change solution	GE does nothing to solve the growing global problem. GM crops are as energy-hungry as any other (12) chemically farmed crops because they are largely dependent on herbicides made with (13) fossil fuel. Furthermore, they depend on nitrogen fertilizer which emits (14) greenhouse gases.
GMOs are energy-friendly because of the 'no-till method', which reduces the number of tractor passes	Research reveals that even though the no-till method did reduce farm operations, large amounts of energy are still consumed due to the production of (15) herbicides used on GM crops.
GE helps eliminate world hunger	GE will not help eliminate world hunger. It does not protect the security of our (16) food supply. There are no GE crops available that increase intrinsic yield. World hunger is actually an issue of (17) allocation of resources.
GMOs are safe	There are no conclusive (18) safety studies on GMOs, as independent researchers are prohibited to use GE crops for their studies.

Worksheet 3: Forum on GM foods

Listen attentively to the viewpoints/concerns of the spokesmen in the forum. Jot down their views, and analyze their stands in the table below.

Role	Stands towards GM foods	Viewpoints / concerns	Challenging level (optional) Critiques from deontological / utilitarian view points
Consumers	for / against		
GM foods manufacturers	for / against		
Environmentalists	for / against		
Farmers	for / against		
Scientists	for / against		

Religious leader	for / against		

Peer evaluation

	Peer-evaluation (3=good, 2=average, 1=poor)					
	Consumer	Manufacturer	Environmentalist	Farmer	Scientist	Religious leader
Clear standpoint	3 2 1	3 2 1	3 2 1	3 2 1	3 2 1	3 2 1
Convincing viewpoints	3 2 1	3 2 1	3 2 1	3 2 1	3 2 1	3 2 1
Substantial examples	3 2 1	3 2 1	3 2 1	3 2 1	3 2 1	3 2 1
Logical presentation	3 2 1	3 2 1	3 2 1	3 2 1	3 2 1	3 2 1
Accurate use of ethical theory	3 2 1	3 2 1	3 2 1	3 2 1	3 2 1	3 2 1

Worksheet 4: Human Genetic Engineering

Watch the video on **'Human Genetic Engineering'** at *https://www.youtube.com/watch?v=dKBfxoPnT7g*, and answer the questions below:

Or:

人類基因解碼
https://www.youtube.com/watch?v=7_FnMS1ocOs (中文字幕)

Discovery《人類基因解碼》剪輯版
https://www.youtube.com/watch?v=UaWiAvNqoYU (中文字幕)

1. Imagine a world where you could pick your child's traits (like hair & eye color / height/ build/ intellegence/ chance of disease/ memory/ number of clones). Would this be a world you want to live in? Why or why not?

_____

_____

_____

_____

_____

_____

2. From the video and your own knowledge, what are the pros and cons of GE in the following aspects?

Aspects	Pros	Cons	Challenging level (optional) Ethical concerns
• Designer babies • Gene selection • Gender selection • Trait selection			

Gene therapy			
Social-economic differences			
Military use			
Prolonged human life			
Others (please specify):			

3. Do you support applying GE on human? Please explain and defend your answer using the theories of ethics.

_____

_____

_____

_____

_____

Worksheet 4: Human Genetic Engineering

(For teachers' reference)

Watch the video on **'Human Genetic Engineering'** at *https://www.youtube.com/watch?v=dKBfxoPnT7g*, and answer the questions below:

1. Imagine a world where you could pick your child's traits (like hair & eye color / height/ build/ intellegency/ chance of disease/ memory/ number of clones). Would this be a world you want to live in? Why or why not?

_____

_____

_____

_____

_____

_____

2. From to the video and your own knowledge, what are the pros and cons of GE in the following aspects?

Aspects	Pros	Cons	Challenging level (optional) Ethical concerns
• Designer babies • Gene selection • Gender selection • Trait selection	• Parents have the right to 'design' their offspring. • The human race as a whole would become more and more perfect.	• Human race would become more and more uniformed. • The attempt to design babies is to play God. • If genetically altered humans are successful, ones' accomplishments would no longer be admired, because those achievements are not their own, but rather the products of science.	• Who is to say what are the best traits? • Is it ethical for parents to select their babies' traits?

Gene therapy	• Sometic engineering can be used to correct genes with defect that cause lifelong & deadly deseases (e.g. severe combined immunodeficiency). • It can cure disorders caused by genetic mutation (e.g. Down syndrome / Alzheimer's disease).	• It could cause super diseases. • It may lead to unpredictable consequences and side effects. E.g. we can alter the genes of mice to increase its memory but it may become more sensitive to pain at the same time. That might also happen on human beings.	• Engineered baby may be born to save the life of a brother/sister. Is it moral to design humans for such a purpose?
Social-economic differences	Rich people can make their children more intellegent / aethletic.	Social-economic differences that would seperate genomic classes, causing discrimination.	Is it fair and just if the genomic classes are created in our future society?
Military use	The gene of soilers' eyes can be altered, such that they can see the infrared of the enemy in the dark for defense purposes.	The development of GE on military aspect could cause huge casualty.	Is it ethical to modify human genes to serve military purposes?
Prolonged human life	Humans can enjoy longer life with better physical condition by modifying their genes.	• Overpopulation & lack of resources • It may lead to the development of new species of human.	Who have the right to determine how long a person should live?
Others (please specify): e.g. Human cloning (will be discussed in next chapter)			

3. Do you support applying GE on human? Please explain your answer using the theories of ethics.

Worksheet 5: Summary & Self-evaluation – Gender Selection

Write down the key learning points of this module.

(A) Definition of Genetic Engineering (GE)
1.
2.
3.
4.
5.

(B) GM foods controversy
1.
2.
3.
4.
5.

(C) Human Genetic Engineering
1.
2.
3.
4.
5.

Evaluate how well you have learnt (please put a '✓')

	Very good	Good	Fair	Poor
(A) Definition of Genetic Engineering (GE)				
(B) GM foods controversy				
(C) Human Genetic Engineering				

What question(s)/area(s) you want to learn more in this module of 'genetic engineering'?

5. Cloning

5.1. Intended Learning Outcomes

By the end of the lessons, the students will be able to:

a. Understand the meaning of cloning and its scope of applications on animals and humans.
b. Analyze the pros and cons for both therapeutic and reproductive cloning on humans, and the moral issues raised in their development.
c. Apply different ethical theories to make moral judgment on cloning.

* *Prerequisite knowledge: Normative Ethics, the nature of morality, moral principles, moral reasoning, theory of conduct, theory of value & virtue (Refer to 'NSS Ethics and Religious Studies Curriculum Support Materials - Compulsory Part: Ethics - Module 1: Normative Ethics')*

5.2. Introduction

Cloning in biotechnology refers to processes used in creating copies of DNA fragments (molecular cloning), cells (cell cloning), or organisms. It describes the processes used to create an exact genetic duplication of another cell, tissue or organism. The copied material is a 'clone' which has the same genetic makeup as its original.

Over the past 6 decades, scientists have attempted to clone different kinds of animals, like frog, mouse, cow, cat, monkey, etc. In 1996, Dolly the sheep was cloned successfully out of 277 attempts. Her arrival has aroused conversations about the implications of cloning, bringing debates over human cloning and stem cell research under the public spotlight.

Should governments fund scientists to develop cloning technology? What about cloning endangered and extinct species? How about cloning animals for food? Is it moral to clone humans for therapeutic purposes? Should parents be allowed to clone their dying children? What if we clone another Albert Einstein to foster scientific advancement?

In the lessons, students will examine the legitimacy of cloning for animals and humans

under different scenarios. They will also analyze and evaluate the arguments for and against the human cloning in therapeutic and reproductive ways.

References:

- Haugen, D.M. (et al) (2009). The ethics of cloning. Mich.: Greenhaven Press.
- http://c2d.osdd.net/home/cep/intro
- http://en.wikipedia.org/wiki/Ethics_of_cloning
- http://www.kopernik.org.pl/en/special-projects/archiwum-projektow/projekt-genesis/krotka-historia-klonowania/
- http://learn.genetics.utah.edu/content/cloning/clonezone/
- http://plato.stanford.edu/entries/cloning/
- http://www.buzzle.com/articles/ethical-issues-of-cloning.html
- http://www.cbsnews.com/news/scientists-successfully-clone-human-stem-cells-via-skin-cells/
- http://www.did.deliberating.org/lessons/documents/DID%20Cloning_2011.pdf
- http://www.sources.com/SSR/Docs/SSRW-Cloning.htm#Ethical_issues_of_cloning
- http://www.discoveryeducation.com/teachers/free-lesson-plans/the-clone-age.cfm

5.3. Teaching and learning processes

Suggested teaching period: 4 lessons

1. Exploring the legitimacy of cloning in various scenarios

1.1. Teacher asks students the following questions. Students can write/draw/verbally answer the questions. Ask them to share and explain their answers.

1.1.1. 'If you can clone an animal or a person, what would you like to clone? Why?'

1.1.2. 'Would you like to have a "cloned you"? Why or why not?'

1.2. Teacher separates the students into 4-7 groups (teacher can select the scenarios purposefully). Each group representative comes out to take a piece of big poster with a **'Scenario card'** sticking on it, and a sign pen (a different colour used for each group).

1.3. The groups discuss the scenarios and write down their bullet points on the posters. In every 3-5 minutes, each group supplies another group with new

information by passing on the poster and scenario card. Until every scenario has been circulated by all groups, teacher facilitates a class discussion.

2. What is cloning?

2.1. Ask students to form 5 groups. Each group is provided with a piece of 'Jigsaw Reading Material', with a poster-sized paper and sign-pen provided. They should read the passage and design a mind-map/poster/flowchart/drawing to show their understanding of the passage. And then all groups take turns to present their work. Teacher may clarify and substantiate whenever necessary.

2.2. While listening to the group presentations, students can use **'Worksheet 1: Understanding Cloning'** to jot down notes and do a peer evaluation.

3. Ethical controversies over cloning

3.1. Flipped learning: Prior to the lesson, teacher asks students to watch the online video on **'Cloning Humans – UK – Zoe Holloway'** (~30 mins) at *https://www.youtube.com/watch?v=R4JoRy_vNEw;*

Or to watch other videos on 'human cloning' in Chinese.

Moreover, students are required to search for some more information regarding the pros and cons of human cloning – therapeutic & reproductive cloning.

3.2. During the lesson, teacher asks the students to form groups (3-6 students in a group), share their views on the video and present what they have gathered on 'human cloning'. To facilitate their sharing, they can complete **'Worksheet 2: Therapeutic VS Reproductive cloning'** together. Then, ask the groups to present their ideas.

3.3. Cloning debate: Teacher divides the class into 2 groups for the debate on 'Cloning technology should be developed.' Asks them to prepare for their arguments at home. To facilitate their preparation and consolidation, **'Worksheet 3: Debate – Cloning technology should be developed'** can be used.

3.4 In the debate, students may evaluate the performance of both themselves and their peers using the evaluation tables in Worksheet 3.

4. Con clusion and students' self-evaluation

4.1. Teacher reviews the key learning points of the topic on 'cloning' with the students.

4.2. Ask students to consolidate their knowledge and evaluate their learning outcomes by completing 'Worksheet 4: Summary & self-evaluation'.

Scenario cards

Card A	**Card B**
 http://2.bp.blogspot.com/-cD4z-hnKj_E/T8lATlpEpYI/AAAAAAAAOko/ju53RtzvuDk/s400/187711_1.jpg	 http://www.bing.com/images/search?q=Kobe+beef+cow&view=detailv2&&&id=B9725A7C131934E18CFA891E30591C8E52C5464F&selectedIndex=114&ccid=zYhMOWUB&simid=608038335954813562&thid=JN.Xfqy10DI3UJM2butXZuA%2bg&ajaxhist=0 zs0cOI6Sde2MaC4z2gvG7A&ajaxhist=0
Google has been serving as a guide dog for a blind man – Mr Chan – for nearly 10 years. Mr Chan depends on Google so much that he feels he cannot live without him. However, Google is getting older and weaker day by day. Should Mr Chan be allowed to clone Google before he dies?	Suppose there is only one polar bear left on earth. The species will extinct when it dies. Should scientists be allowed to clone the polar bear in order to keep the species alive?

Card C

http://www.bing.com/images/search?q=Kobe+beef+cow&view=detailv2&&&id=B9725A7C131934E18CFA891E30591C8E52C5464F&selectedIndex=114&ccid=zYhMOWUB&simid=608038335954813562&thid=JN.Xfqy10DI3UJM2butXZuA%2bg&ajaxhist=0

Mr Honda owns a prize-winning Kobe beef cow. He wants to clone the cow such that more people can taste the delicious beef.

Should Mr Honda be allowed to clone the Kobe beef cow to share the taste?

Card D

http://www.theguardian.com/sport/2010/sep/04/cape-blanco-irish-champion-stakes

Sir Jones is the owner of a champion race horse. He wants to clone the horse to help him make money from racings.

Should Sir Jones be allowed to clone the champion race horse to make money?

Card E

Tom is 12 years old, suffering from a rare DNA mutation decease. Doctors believe that stem cells found in human embryos can cure his disease.

Should scientists be allowed to clone Tom to create stem cells for medical purposes?

Card F

Mrs Mok gave birth to her 5-year-old daughter, Amy, at age of 45. Amy is suffering from terminal cancer which breaks the Mok's heart, as they know it is next to impossible to bear any baby again.

Should Mrs Mok be allowed to clone Amy before she dies?

Card G

Mother Teresa, a Nobel Peace Prize winner, helped and loved countless deprived, and has stimulated many people's benevolence.

Should scientists be allowed to clone
Mother Teresa so that her love can prevail on earth?

Jigsaw Reading

(1) What is Cloning?

Cloning is a scientific method to create an exact genetic replica of a living being. It is the creation of a genetic copy of a sequence of DNA or of the entire genome of an organism. Two organism clones (human/animal) would have the same genetic structure.

In 1996, scientists in Scotland created Dolly, a sheep who was an identical genetic copy of her mother. Since that time, scientists in other parts of the world have produced genetic duplicates of such animals as a cow, a mouse, a cat, a dog, a horse, a pig, and even a ferret. This process, called cloning, has led to increased interest and concern by governments and ordinary persons. Officials and citizens around the world are discussing the uses of human cells in medical research and the prospect of reproducing people through cloning.

Sources:

- http://plato.stanford.edu/entries/cloning/
- http://www.did.deliberating.org/lessons/documents/DID%20Cloning_2011.pdf

(2) Kinds of Cloning

Cloning is different from other forms of assisted reproduction, such as artificial insemination or test-tube fertilization. In assisted reproduction, the sperm of a male donor is brought together with the egg of a female donor, just like in natural reproduction. Cloning, by contrast, involve transferring the genetic material from the nucleus of one adult cell of an organism and placing it into an egg whose genetic material has been removed. After receiving a careful burst of electricity, the egg begins to divide into an embryo as if sperm had fertilized it.

Regarding human cloning, scientists and policymakers generally make a distinction between ***reproductive*** and ***therapeutic*** cloning. While the same techniques are used in the initial stages of both processes (German National Ethics Council, 2004), they quickly differ in important ways (Committee on Science, Engineering, and Public Policy, 2002).

Source: http://www.did.deliberating.org/lessons/documents/DID%20Cloning_2011.pdf

(3) Reproductive Cloning

In **Reproductive Cloning**, somatic cell nuclear transfer (SCNT) is the most common cloning technique. SCNT involves putting the nucleus of a body cell into an egg from which the nucleus has been removed. Placing this cloned embryo into the uterus of a female animal and bringing it to create a clone, with genes identical to those of the animal from which the original body cell was taken. It is the process used to create Dolly the sheep.

More than 18 cloned mammals have been produced with SCNT, but claims of having cloned a human child have been false. Human reproductive cloning is almost universally opposed. Overwhelming majorities reject it in opinion surveys. Many international agreements and countries (excluding US) formally prohibit it.

Some oppose reproductive cloning because of safety considerations. Animal cloning is seldom successful, and many scientists believe that reproductive cloning can never be made safe. Human reproductive cloning

would also threaten the psychological well-being of cloned children, open the door to more powerful genetic manipulation technologies, and raise other social and ethical concerns.

Sources:
- http://www.did.deliberating.org/lessons/documents/DID%20Cloning_2011.pdf
- http://www.geneticsandsociety.org/section.php?id=16&all=1

(4) Therapeutic cloning

Therapeutic cloning does not implant an embryo into a uterus. Instead, therapeutic cloning focuses on stem cells and how they develop. These cells are multi-functional: all the specialized cells of the body—bone, blood, nerves, muscles, skin—develop from stem cells. Despite this versatility, stem cells "do not themselves have the capacity to form a fetus or a newborn animal" (COSEPUP, 2002).

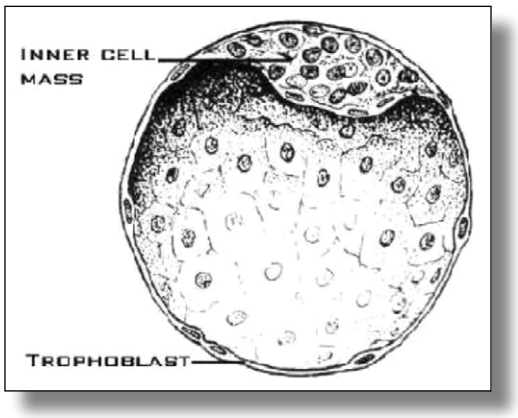
Some researchers use therapeutic cloning to understand genetic defects. They also use therapeutic cloning to learn how to renew cells or tissues in people who suffer from degenerative diseases or serious injuries. The advantage to this type of cloning in medical treatment is that it would allow medical professionals to grow replacements for missing and damaged body parts for their patients. This would eliminate organ and tissue shortages, ensuring that every patient who required something like a new liver or new kidneys could get what he or she needed. Using cloned body parts would also eliminate the need for immunosuppressive drugs, and reduce the risk of rejection and other problems that are commonly associated with transplants.

Sources:
- http://www.did.deliberating.org/lessons/documents/DID%20Cloning_2011.pdf
- http://www.wisegeek.org/what-is-therapeutic-cloning.htm

(5) Cell Sources for Cloning

Currently, surplus embryos donated by parents undergoing test-tube fertilization are used as a source for stem cells. Fertility clinics routinely discard these unused embryos. When researchers receive embryos from a fertility lab, the embryos are only a few days old but are alive and growing. The embryos are still in the *blastocyst stage. That means they are a hollow ball of 64 to 200 cells in two layers. The researchers remove the stem cells—the inner layer of cells—to grow them in the lab. The outer layer of cells—which would have grown into the womb, the means for nutrients to pass to a growing fetus—is discarded.

* The **blastocyst** is a structure formed in the early development of mammals. It possesses an inner cell mass (ICM) which subsequently forms the embryo. The outer layer of the blastocyst consists of cells collectively called the trophoblast.



Sources:

- http://en.wikipedia.org/wiki/Blastocyst
- http://www.did.deliberating.org/lessons/documents/DID%20Cloning_2011.pdf

Worksheet 1: Understanding Cloning

Jot down notes when listening to the presentations of the 5 groups. Write down your questions (if any) and then ask the presenters, or to find out the answers after class.

Group	Notes	My questions (optional)
(1) What is Cloning?		
(2) Kinds of Cloning		
(3) Reproductive Cloning		
(4) Therapeutic Cloning		
(5) Cell Sources for Cloning		

Peer evaluation

	Peer-evaluation (3=good, 2=average, 1=poor)				
	Group 1	**Group 2**	**Group 3**	**Group 4**	**Group 5**
Concept articulation	3 2 1	3 2 1	3 2 1	3 2 1	3 2 1
Poster presentation	3 2 1	3 2 1	3 2 1	3 2 1	3 2 1
Verbal presentation	3 2 1	3 2 1	3 2 1	3 2 1	3 2 1
Response to questions	3 2 1 N/A	3 2 1 N/A	3 2 1 N/A	3 2 1 N/A	3 2 1 N/A

Worksheet 2: Therapeutic VS Reproductive cloning

Based on the information you have gathered, compile the table below by writing the bullet points.

	Pros	Cons
Therapeutic cloning		
Reproductive cloning		

Challenging level *(optional)*: Do you support human cloning? Explain your answers using the theories of ethics.

Worksheet 2: Therapeutic VS Reproductive cloning

(For teachers' reference)

Based on the information you have gathered, compile the table below by writing the bullet points.

	Pros	Cons
Therapeutic cloning	• Scientists can use the embryos in 14-day limit, when it is still in a cell stage, instead of being a 'human'. Some people regard that the embryonic cells at that stage cannot be considered as a human being because it does not have thoughts, self-awareness, memory, awareness of its environment, sensory organs, internal organs, limbs, and so on. • The latest development of cloning human stem cells via *skin cells, instead of the traditional method of using the fertilized egg cells which theoretically can develop into fetuses, reduces the controversy. • It relieves human suffering due to illnesses, and gives hope to the patients and their families. • It can generate tissues and whole organs to treat patients who otherwise cannot obtain transplants.	• It is immoral to use an early-stage human life to 'save' another human life. • It is to create an embryo purposefully and does not allow it to grow, but just to destroy it. It infringes the right to survival of the 'human-to-be'. • It involves massive destroy of human embryos – human lives. • Stem cells needed for research can be taken from other sources, such as umbilical cord blood. Thus, using cloned embryos is unnecessary. • It is costly to develop therapeutic cloning. It will benefit primarily the rich people (the minority). The money and scientific effort devoted to cloning could be better invested to fight current problems—like AIDS, malaria, and tuberculosis (the majority).

	• It avoids the need for immunosuppressive drugs, and to stave off the effects of aging. • It helps in in-depth research, e.g. in the case of motor neuron disease. *For details, please refer to http://www.cbsnews.com/news/scientists-successfully-clone-human-stem-cells-via-skin-cells/	
	Pros	**Cons**
Reproductive cloning	• It demonstrates freedom of research. • It is a scientific breakthrough which advances human knowledge. • It enables homosexual and sterile couples to have biological offspring, which ensures their human rights. • It allows parents who have lost a child a chance to redress their loss using the DNA of their deceased child.	• It infringes human dignity and uniqueness. • It is to play God. • The technology is not yet safe. Cloned individuals would very likely be biologically damaged due to the inherent unreliability of cloning technology. • It might change the shape of family structure by confusing the role of parenting within a family of complicated kinship relations, e.g. parent-child/self relationship? • A cloned child having multiple donors might complicate parental right issues as well as inheritance and marital eligibility issues. • The expectations on the cloned individuals replace the 'original person' could

		infringe the right to self-determination. • Cloned individuals may become 'tools' if they were generated for specific purposes. Treating others as 'tools' is immoral in the Kantian view. • It is ethically wrong to control the genetic makeup of any other individual. • The alteration of gene pool will reduce the genetic diversity of humans. It may make humans suffer from infectious and unknown diseases, and eventually threats the entire human species.

Challenging level *(optional)*: Do you support human cloning? Explain your answers using the theories of ethics, ie. Deontology (D), Utilitarianism (U), theory of Value and Virtue (V) and the knowledge you have learnt in this unit of Bioethics.

Worksheet 3: Debate – Cloning technology should be developed

For	Against

Self-evaluation

	Self-evaluation 5=outstanding ,1=very poor				
Am I able to make substantial arguments?	5	4	3	2	1
Am I able to give concrete examples to support my arguments?	5	4	3	2	1
Am I able to employ individual ethical theory accurately with appropriate evidence?	5	4	3	2	1
Am I able to present my view/arguments in a logical and systematical way?	5	4	3	2	1
Am I able to respond to the arguments made by the counterpart?	5	4	3	2	1

Peer evaluation

	Peer-evaluation 5=outstanding ,1=very poor				
Is the counterpart able to make substantial arguments?	5	4	3	2	1
Is the counterpart able to give concrete examples to support their arguments?	5	4	3	2	1
Is the counterpart able to employ individual ethical theory accurately with appropriate evidence?	5	4	3	2	1
Is the counterpart able to present their view/ arguments in a logical and systematical way?	5	4	3	2	1
Is the counterpart able to respond to the arguments made by our side?	5	4	3	2	1

Worksheet 4: Summary & Self-evaluation – Cloning

Write down the key learning points of this module.

(A) Exploring the legitimacy of cloning in various scenarios
1.
2.
3.
4.
5.

(B) What is cloning?
1.
2.
3.
4.
5.

(C) Ethical controversies over cloning
1.
2.
3.
4.
5.

Evaluate how well you have learnt (please put a '✓')

	Very good	Good	Fair	Poor
(A) Exploring the legitimacy of cloning in various scenarios				
(B) What is cloning?				
(C) Ethical controversies over cloning				

What question(s)/area(s) you want to learn more in this module of 'cloning'?