



## ART in Indonesia: A Current Review of Ethics

Cinta Ayu Abutari<sup>1\*</sup>, Ahmad Ricardo Silalahi<sup>1</sup>, Silvia W Lestari<sup>1,2</sup>, IGN Pramesemara<sup>3</sup>, Andrian<sup>1</sup>, Agustinus<sup>4</sup>, Tjahjo Djojo Tanojo<sup>5</sup>

<sup>1</sup>. *Andrology Specialist Program, Medical Faculty of Universitas Airlangga, Surabaya, Indonesia.*

<sup>2</sup>. *Medical Biology Department, Medical Faculty of Universitas Indonesia, Jakarta, Indonesia.*

<sup>3</sup>. *Medical Biology Department, Medical Faculty of Universitas Udayana, Denpasar, Indonesia.*

<sup>4</sup>. *Medical Biology Department, Medical Faculty of Universitas Airlangga, Surabaya, Indonesia.*

<sup>5</sup>. *Andrology Staff, Dr. Soetomo General Hospital, Surabaya, Indonesia.*

**\*Corresponding Author: Cinta Ayu Abutari**

### Abstract

Currently, Assisted Reproductive Technology (ART) programs such as intrauterine insemination (IUI) and in vitro fertilization (IVF) are developed in Indonesia. As a religious country, the implementation of ART programs raises a variety of ethical issues and religion reactions such as sperm or oocyte donor was *haram*, sperm from the deceased husband, a sinful masturbation, and surrogate mother was *Zina*, gender selection by human, man assumption as God to decide which embryo be transferred and to create life. Some specific religious organizations provide statements regarding this matter based on scriptural studies and the opinions of their respective religious leaders. Confucianism allows sex selection, while other religions refuse. Hindu and Buddhist allow all ART program, while Catholic declare rejection to all ART program. Islam allows ART programs, without sperm and oocyte donor or surrogate mother. This difference in views is mediated by government regulations that support ART programs but are still limited by legal marital status. The state provides government rules on the implementation of the ART program in Indonesia, although every spouse is allowed to follow their beliefs. In conclusion, ART programs were allowed by most of the religions in Indonesia, as long as not involve the third party as the donor.

**Keywords:** *Assisted Reproductive Technology, IUI, IVF, Bioethics, Indonesia*

### Introduction

Indonesia is a religious country with a list of religions as follow Muslims (87%), Christians (6.96%), Catholic (2.91%), Hindu (1.69%), Buddhist (0.72%) and Confucianism (0.05 %), even though other religions and beliefs are not forbidden to adhere [1, 2]. Every religion in Indonesia has religious organizations such as the Indonesian Council of Ulama (MUI), the Communion of Churches in Indonesia (PGI), the Indonesian Bishops' Conference (KWI), Parisada Hindu Dharma Indonesia (PHDI), and Representatives of Indonesian

Buddhists (WALUBI) [3]. About 15% of heterosexual couples in Indonesia experience infertility [4]. Some of the infertile couples undergo assisted reproductive technology (ART) program to overcome their infertility problems, such intra uterine insemination

(IUI) and in vitro fertilization (IVF). Unfortunately, as this technology developed in Indonesia, ART experienced various debates from various religions. The debate occurred due to ethical considerations regarding sperm donors, surrogate mother, gender selection, and several other issues that were not in accordance with the rules and interpretations of the religious scriptures. Some religious organizations such as the MUI, KWI, and PHDI took a stand and issued an official statement about ART.

While some other religious organizations do not have an official statement regarding ART. In this paper, the authors attempt to present various ethical issues that occur in the view of religions in Indonesia regarding the implementation of ART [5].

## Methods

The method used in this paper is literature review from surfing the Pubmed library with the keywords "Assisted Reproductive Technology", "IUI", "IVF", "Bioethics" and "Indonesia". The results are selected from current articles and some literature journal that have relevance with this paper.

## Result

### Islam Perspective on ART

ART develops as an effort that can be done to treat infertility problems and to have offspring. Islam permits ART but with very strict rules that must involve married couples in marital status and not allow the existence of a third party as a donor of sperm or surrogate mother. Sperm must be obtained from the husband and oocyte from the wife. Frozen embryos may be transferred to a couple in legal marital status.

If there is a divorce or husband's decease, ART should not be performed. Sperm from ex-husband and oocyte from ex-wife are prohibited religiously. The use of sperm or oocyte donor would be illegal according to zina. Donation of sperm or oocyte and the use of surrogate is also zina.

The procedure for processing ART must be with medical personnel who are competent in their fields [6-11]. Reducing multifetal pregnancy should not be done intentionally, while reducing fetus is only permissible if multifetal pregnancies occur spontaneously and endanger the survival of multiple embryos. This is also permissible if maternal health or life is in danger. Islamic law does not permit the use of any ART without medical justification. Single mothers or single fathers who crave children, such as lesbian or gay, are not allowed to use ART based on Islamic law [7, 9, 10, 12]. ART was accepted by society in various muslim countries after religious organizations and scientific publications issued guidelines.

This guidelines include the Fatwa of Dar El Iftaa, Cairo (1980) and the Fatwa of the Islamic Fiqh Council, Makkah (1984), Islamic Organization for Medical Sciences (IOMS) in Kuwait (1983), Fatwa of International International Islamic Fiqh Academy in 1986, and International Islamic Centre for Population Studies and Research, al. Azhar University.

In 1979, the MUI issued a fatwa on ART containing four statements. First, a test tube baby with sperm and ovum from a legitimate couple is permissible, because this right includes efforts based on religious norms. Second, ART from a couple who is married to another wife (for example from the second wife entrusted to the first wife) is haram based on the rules of Sadd az-zari'ah. This could cause complicated problems in relation to the inheritance, especially among children born to mothers who have oocytes and mothers who give birth to it.

Third, IVF from frozen sperm from a deceased husband is haram based on the rules of Sadd az-zari'ah. It will cause complicated problems, both in relation to the determination of the offspring and their relation to inheritance. Fourth, ART is haram when sperm and oocytes are taken from donor, because they are equated with legitimate extramarital relationship (zina) [10, 13].

### Christian Perspective on ART

The christian perspective on ART is still very controversial. Some churches refuse ART due to the processes is considered contrary to the Word of God. The process of collecting sperm through masturbation is an act contrary to Genesis 38:9, Onan allows sperm to be wasted. Moreover, masturbation is considered as an outlet for sexual desire without intercourse, so it is inappropriate to do so.

Another step, when sperm and oocyte meet, both gametes are cultured in an incubator for fertilization until embryo formation. This is considered contrary to the Psalms 139: 13 which state that God has the right to form human in the female uterus. In this process, human assume themselves as God who has the ability to create life. Some churches assume that doctors select the best embryos to be transferred and bad embryos to be discarded. It is contrary to Exodus 20:13 regarding the prohibition to kill. In some parts of the Bible, God forbids killing and punishing the killers very hard.

The man has no right to determine which an embryo has the right to be transferred to the uterus and which embryos are discarded. Other reasons include miscarriage and ectopic pregnancy, offspring deemed inherit properties infertile from their parents, multiple pregnancies and technological advances are considered enslave humanity.

Some churches that refuse ART offer advice to infertile couple not to force themselves to do ART. If God does not give the child to the couple, does not mean that God does not love and bless their marriage [14, 15]. PGI has never made yet an official statement in ART. The Protestant Church in Western Indonesia (GPIB), one member of the PGI, provides a written statement in 1990 concerning ART.

The view of eastern society of the presence of children in the family and the right of couple to seek offspring is considered by GPIB to make decisions. GPIB allows members to conduct ART with several conditions, including sperm and oocytes not originating from donors, forbidden surrogacy, ART is performed by a legitimate couple and carried out in accordance with the oath of honesty of the medical profession. The Indonesian Christian Church (GKI), Royandi Tanudjaya, also did not question couples to do ART as long as sperm and oocytes came from the couple themselves.

ART is just one of the ways found by the medical profession to help each other who have difficulties fulfilling God's call to bear children in marriage according to Genesis 1:28 [16, 17]. Despite controversy, all churches in Indonesia share the same opinion in the case of sperm donor, oocytes donor, surrogacy and gender selection. Christian faith and ethics believe that God wants a child who is born as the result of love of couple which is not just a medical engineering.

In addition, there will be psychological impacts in the future such as decreasing of relationship between husband and wife because they considers sperm or oocytes derived from another man or woman, the emergence of the bond of wife with another man who donor his sperm or husband with another woman who donor oocyte or uterus surrogate, relationship between couple against the baby decrease in the uterus surrogate, or surrogate mother is not willing to give the baby to his biological parent because she loves the baby.

Prevention performed by churches by conducting pastoral service for infertile couples and suggesting them to adopt a child. Gender selection is religiously prohibited because it contradicts Genesis 1:27 that God created men and women. This means that only God has the right to determine human

sex to develop in a woman's uterus [14, 15, 16, 17].

### **Catholic Perspective on ART**

Since 1956, the Catholic Church, through Pope Pius XII, has firmly stated the rejection of the "in vitro" fertilization method, with the argument that IVF separates the procreation process from the unification of two humans who are bound by a legal marriage, according to canon law [7, 18, 19, 20]. In 1987, "Donum Vitae", "Instruction on Respect for Human Life in Its Origin and on the Dignity of Procreation" was issued by Congregation for the Doctrine of the Faith.

This doctrine contains an explanation regarding Biomedical Research and the teaching of the church. In 2008, "Dignitas Personae", Instructions on certain bioethical questions, were once again was issued by the Congregation for the Doctrine of the Faith. These two pontifical documents emphasize the rejection of the Catholic Church to ART (Congregation for the Doctrine of the Faith, 1987, 2008), with an emphasis on IVF.18

However; the Catholic Church became more lenient, by stating: Techniques which assist procreation "should not be rejected on the grounds that they are artificial. As such, they witness the possibility of the art of medicine. But they must be given a moral evaluation that refers to the dignity of the human person, who is called to realize his call from God to the gift of love and the gift of life". Techniques which act as an aid to the conjugal act and its fertility are permitted in the case of opening the genital tract obstruction [18].

Artificial reproduction, both homologous (sperm or oocyte come from couple itself) and heterologous (sperm and/or oocyte come from donor), are morally unacceptable according to the Catholic Church. The main reason for this statement is that the conceived does not originate from the sexual acts of their parents. Another consideration for this rejection is regarding masturbation for sperm collection prior to ART. Masturbation is considered as a sinful act according to the Catechism of the Catholic Church No. 2352 [21].

Indonesian Catholic Church as an union with other Catholic Church worldwide under the Holy See, looking through the issues of ART with the same view point. Indonesian Catholic Church, by the Indonesian Council of

Bishops has expressed their opinion, through the book “Family Pastoral Guidelines” in 2010 [26]. ART as a whole process has faced a major rejection by the Catholic Church, more than the issue of gender selection, which was done by selecting the embryo that have been developed. Gender selection is demonstrated by human criteria, not by the will of God, therefore this action is prohibited. Another argument given by The Holy See is the gender selections that were performed by preimplantation genetic testing, with regard to the fear that the unchosen embryos will be discarded.

This is the same as human disposal in the form of embryos [18, 20, 22]. Surrogacy is another problem faced by the Catholic Church in Indonesia, as well as Catholic Church all around the world. But one interesting statement from the book “Family Pastoral Guidelines” state in facing surrogate mother who acts to save conceived child due to the risk of abortion, Catholic Church can accept it [24]. As for sperm donor, the Catholic Church has expressed their disagreement [25]. ART surely faces a great challenge according to the Catholic Church. The Catholic Church still recommends adoption for a solution for not having child in marriage [26].

### **Hindu Perspective on ART**

Hinduism is a very liberal religion concerning assisted reproduction and its related aspects. There are a number of principles and mythologies shared by many of those who self-identify as Hindus who can provide insights into the assisted reproduction [20]. One example, such as the character of Mahabharata, Kunti and her husband King Pandu, also Gandhari and her husband King Dhritarashtra, who struggle with infertility and eventually get offspring by utilizing mantra to fulfill their desire to have children [27]. PHDI as the prime organization of Hinduism in Indonesia has issued interpretations containing decisions regarding the implementation of IVF and other ART program in 1982. There clearly stated that Hinduism accepts the implementation of IVF and ART procedures provided that it is approved by the couple and come from legitimate partners [28].

However, Hinduism also accepts sperm donation but the donor has to be a close

relative of the infertile husband, known as Niyoga tradition.<sup>29</sup> But, there is no official statement yet about oocyte donor, gender selection and surrogacy in implementation of ART for Hindu perspective in Indonesia. In addition, abortion is not prohibited and the adoption of a child, which usually comes from a numerous family, is also practiced. This liberal attitude has made India and other Hindus reside in the Asia-Pacific region become an important destination for reproductive tourism and many couples travel for ART [29, 30].

### **Buddhist Perspective on ART**

Buddhism is also a very liberal religion regarding ART. It allows the use of IVF without restricting the access to this medical procedure to married couples and sperm donation is also permitted if it is only comes from the siblings of the couple. In the Buddhist tradition, a child conceived from donated genetic material has the right to meet his genetic parents as he/she reaches maturity [32].

The practice of IUI, IVF, ICSI and cryopreservation and prenatal genetic diagnosis (PGD) are allowed in China where it is widely believed to be the largest Buddhism reside, but the following procedures are prohibited such as sex selection and PGD without medical indication, surrogate mother, embryo donation and gamete donation if not from the siblings of the married couple.

All assisted reproduction procedures do not violate Dhammaniyama or violates the Dhamma and Vinaya, because IVF itself gives space or opportunity for other creatures to be reborn as humans [27]. However, there have been no more detailed decisions regarding the implementation of ART in Indonesia by WALUBI [33].

### **Confucianism Perspective on ART**

Confucianism, which pursues the way of Dao, is very honouring the life, and doesn't allow any abortion. However, how to get life is not explicitly explained. There is no strict statement nor doctrine in confucianism that prohibited the practice of ART. Confucians would generally accept IVF. Morals in IVF that interfere with Catholicism, or any other religion, do not matter for confucians, such as the disposal of living embryos.

The only moral obstacles is the selection of specific characteristic for the embryo, such as high IQ, long hair, skin colour, etc [34]. Gender selection is another matter. Confucianism is originated from China, and the socio cultures of the Chinese are mixed in the teaching of Confucianism. In China, gender selection seems have already performed many decades ago. In China, only son can continue the legacy of the family, and can take on the family business. As supported by the one-child policy, gender selection is more practiced, but to do it without information, or without medical indication is considered illegal [20, 34, 35]. Surrogacy in Confucianism is also prohibited. There are not many reasons given for this prohibition.

By looking at Chinese culture, the right to procreation is a basic human right, therefore should exist beyond marriage [36, 37]. Although this problem is polemic, Confucians still practice their culture, except for some people for economic reasons [38, 39]. As well as surrogacy, sperm donors are also prohibited by the Confucians [36, 37]. Indonesian authority from the Confucians still hasn't released their position on this issue. There is no documented statement can be traced to confirm these issues. The Council of Confucianism in Indonesia (MATAKIN) has not yet declaring their policy. In order to be easily understood, all perspective of each religion in Indonesia, whether accepting or rejecting ART is summarized in Table 1.

**Table 1: Perspective of each religion in Indonesia to ART**

	Islamic	Christian	Catholic	Hindu	Buddhist	Confusianism
Masturbation due to sperm collection	Yes	Debate	No	Yes	Yes	Yes
ART	Yes	Debate	No	Yes	Yes	Yes
Sperm donor	No	No	No	Yes*	Yes**	No
Oocyte donor	No	No	No	Yes*	Yes**	No
Surrogacy	No	No	No	Yes*	Yes**	No
Gender Selection	No	No	No	No	No	Yes
*Agree if the sperm donor, oocyte donor and surrogate come from siblings of a married couple						
**The source of the donor must be anonymous						

## Government Regulation on ART

The Indonesian government has issued various laws and government regulations on the implementation of ART in Indonesia. Some of them are Law No. 23 of 1992 article 16 that stated ART can be implemented as a last resort to help the husband and wife get offspring [40]. Then, there is Republic of Indonesia Government Regulation Number 61 of 2014 concerning Reproductive Health that explains the ethical issues that may arise in the implementation of ART in Indonesia.

Example in article 40 states that ART can only be performed on married couples who are legally married and infertility to obtain offspring. In addition, there is article 41 that prohibits the transferring of embryos to the wife uterus if the father of the embryo dies or divorces. Surrogate mother is also prohibited in this article. Next, article 44 prohibits gender selection but this is permissible for second and subsequent children [42]. Recently, there is Regulation of the Minister of Health of the Republic of Indonesia Number 43 of 2015 concerning. Implementation of reproductive services with assistance or pregnancy beyond the natural way.

This regulation provides complete guidelines and conditions for health facilities that demonstrated ART.

## Discussion

MUI, KWI and PHDI provide clear statements about ART, while KWI prohibits all ART procedures.

The MUI and PHDI allow ART by giving which rules are allowed and not to be done. PGI, WALUBI and MATAKIN have not provided an attitude statement regarding ART. From Indonesian Christians, controversy still occurs about whether or not to take ART. According to some Christian priests, differences of opinion regarding ART and the absence of a written official statement from PGI occur because Christianity does not focus on the subject of medical ethics, but on salvation through Jesus Christ.

The issue of Christian ethics regarding ART is still very limited in various Indonesian Christian churches and theological schools. For Buddhism and Confucianism, it does not prohibit ART if it is carried out by a legitimate married couple, but there are several stages that are not approved for.

The different views and ethics of each religion in Indonesia are based on scriptural studies and their respective religious leaders.

There are no written sanctions from religious organizations that may be given to each religious adherent if doing ART is not in accordance with the provisions given. This difference in views is mediated by government regulations that support ART programs but are still limited by legal marital status. According to the government regulations, ART can only be applied by a legitimate married couple with the provisions of the results of the fertilization of sperm and oocytes from the husband and wife concerned, transferred to the wife uterus from which the oocyte originates; performed by health professionals who have the expertise and authority for it, and demonstrated at certain health facilities.

Meanwhile, regulation of the Minister of Health of the Republic of Indonesia Number 43 of 2015 Article 20 states that the Minister of Health can revoke the license for ART implementation if a violation is found. In addition, according to Law No. 23 of 1992 concerning Health Article 82 paragraph 2 states that if ART is performed in accordance with the provisions, it can be imprisoned and fined.

There are several things that can be suggested to prevent the occurrence of ethical problems and find solutions in the future. The socialization can be carried out by professionals regarding infertility and ART

procedures to the public. The Indonesian community, which consists of several religions, needs corrects and clears information about ART. Discussions between government, legal experts, the medical profession and religious leaders can be done to formulate regulations that can be applied in Indonesia. The state provides government rules on the implementation of the ART program in Indonesia, although every spouse is allowed to follow their beliefs the regulation should not conflict with the ethical values and faith of each religion. Supervision from the government, religious leaders and the community should be improved along with the development of ART.

## Conclusion

The development of ART in Indonesia creates a reaction for each religion. Even though the Indonesian government has passed laws and regulations, each religion still responds to accepting or rejecting ART. In conclusion, ART programs were allowed by most of the religions in Indonesia, as long as not involve the third party as the donor. Cooperation is needed from the government, legal experts, religious leaders and the people of Indonesia to supervise the development of ART in the future.

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## References

1. Penetapan Presiden Republik Indonesia Nomor 1/PNPS Tahun (1965) tentang Pencegahan Penyalahgunaan dan/atau Penodaan Agama, 5.
2. Population by Region and Religion Embraced. Badan Pusat Statistik Indonesia (2010) Available at: <https://sp2010.bps.go.id/index.php/site/tabel?tid=321>
3. Hakim BA, Asry Y RA, Muchtar IH, Ahmad HA, Burhani H, Haryani E, Khalikin Z (2015) Pandangan Pemuka Agama Tentang Urgensi Pengaturan Hubungan Antarumat Beragama Di Indonesia. (M. Daulay, Ed.). Jakarta: Kementerian Agama RI Badan Litbang dan Diklat Puslitbang Kehidupan Keagamaan.
4. Bennett L, Pangestu M (2017) Regional reproductive quests: Cross-border reproductive travel among infertile Indonesian couples. *Asia Pacific Viewpoint*, 58: 162-174. doi: 10.1111/apv.12160.
5. Nurshanty ATR (2017) Pengaturan Bayi Tabung Ditinjau Dari Aspek Hukum Perdata Di Indonesia. *THE JURIS*, I (2): 135-174. Retrieved from <http://ejurnal.stih-awanglong.ac.id/index.php/juris>.
6. Syarif Z (1999) 'Bayi Tabung, Status Ilukum dan Hubungan Nasabnya', *Al Mawarid*, 46.

7. Schenker JG (2005) 'Assisted reproductive practice: Religious perspectives', *Reproductive Bio Medicine Online*. Reproductive Healthcare Ltd, Duck End Farm, Dry Drayton, Cambridge CB23 8DB, UK, 10(3): 310-319. doi: 10. 1016/S1472-6483(10)61789-0.
8. Islam S et al (2007) 'Ethics of Artificial Insemination: An Islamic Perspective', *Journal of the Islamic Medical Association of North America*, 39(1): 1-5. doi: 10.5915/39-1-5264.
9. Dezhkam L, Dezhkam, H Dezhkam, I. (2014) 'Sex selection from Islamic point of view', *Iranian Journal of Reproductive Medicine*, 12(4): 289-290.
10. Al-Bar MA, Chamsi-Pasha H (2015) 'Assisted Reproductive Technology: Islamic Perspective', *Contemporary Bioethics: Islamic Perspective*, 1-267. doi: 10. 1007/978-3-319-18428-9.
11. Sariles S (2016) 'In vitro Fertilization Christian and Islamic Perspectives on the Ethical Dilemma of In Vitro Fertilization ( IVF ) In vitro Fertilization', *Department of Biology; College of Arts and Sciences Abilene Christian University*, 4: 1-7. Available at: [http:// jima. imana. org/ article/view/5264](http://jima.imana.org/article/view/5264).
12. Brown R, Harper J (2012) 'The clinical benefit and safety of current and future assisted reproductive technology', *Reproductive BioMedicine Online*. Reproductive Healthcare Ltd., 25(2): 108-117. doi: 10.1016/j.rbmo.2012.04.009
13. Bayi Tabung/Inseminasi Buatan. Fatwa Majelis Ulama Indonesia (1979) /559-560. Available at: [https:// mui. or.id/ wp-content/uploads/2017/02/Bayi-tabung-i mseminasi-Buatan.pdf](https://mui.or.id/wp-content/uploads/2017/02/Bayi-tabung-i mseminasi-Buatan.pdf).
14. WIJIATI, Maria (2018) Program Bayi Tabung Menurut Pandangan Alkitab. *PNEUMATIKOS | Jurnal Teologi STT STAPIN*, [S.l.], 8 (2): 32-71. Available at: <<http://ojs.stapin.ac.id/index.php/jurnalstapin/article/view/70>>. Date accessed: 22 oct. 2018.
15. Gunadi L (1987) Pandangan Etika Injili Dalam Bidang Medis. *Jurnal Pelita Zaman*, 2: 1-3. Retrieved from [http:// alkita b. sabda.org/ resource. php?topic=69&res=jpz](http://alkitab.sabda.org/resource.php?topic=69&res=jpz)
16. Akta Gereja GPIB tahun 1990. Ketetapan PS XV No. VII/PS.GPIB/1990. (1990). Retrieved from [https:// gpibmenarakesih. files.wordpress.com/2013/05/kumpulan-akta-gereja-gpib.pdf](https://gpibmenarakesih.files.wordpress.com/2013/05/kumpulan-akta-gereja-gpib.pdf)
17. Royandi T (2014) Momongan Dari Bayi Tabung atau Pinjam Rahim? *Majalah Jemaat Gunsa*, 28-29. Retrieved from <http://gkigunsa.or.id/download?file=/media/1558/gunsa-des-14-web.pdf>
18. Lauritzen P (2010) Technology and Wholeness: Oncofertility and Catholic Tradition. In T. K. Woodruff, L. Zoloth, L. Campo-Engelstein, & S. Rodriguez (Eds.), *Oncofertility* (156: 295-306). Boston, MA: Springer US. [https:// doi. org/ 10. 1007/ 978-1-4419-6518-9\\_23](https://doi.org/10.1007/978-1-4419-6518-9_23)
19. Schenker JG (2002) Gender Selection: Cultural and Religious Perspectives. *Journal of Assisted Reproduction and Genetics*, 19(9): 11.
20. Sallam HN, Sallam NH (2016) Religious aspects of assisted reproduction. *Facts Views Vis Obgyn*, 8(1): 33-48
21. The Holy See. (n.d.). Catechism of the Catholic Church. Retrieved October 19, 2018, from [http:// www. vatican. va/ archive/ccc\\_css/archive/catechism/p3s2c2a6.htm](http://www.vatican.va/archive/ccc_css/archive/catechism/p3s2c2a6.htm)
22. Ford NM (2008) A Catholic ethical approach to human reproductive technology. *Reproductive Bio Medicine Online*, 17: 39-48. [https:// doi. org/ 10. 1016/S1472-6483\(10\)60329-X](https://doi.org/10.1016/S1472-6483(10)60329-X)
23. Congregation for the Doctrine of the Faith. (2008) *Dignitas Personae*. Retrieved October 9, 2018, from [http:// www. vatican. va/ roman\\_curia/ congregations/ cfaith/ documents/ rc\\_con\\_cfaith\\_doc\\_20081208\\_dignitas-pers onae\\_en.html](http://www.vatican.va/roman_curia/congregations/cfaith/documents/rc_con_cfaith_doc_20081208_dignitas-personae_en.html)
24. Konferensi Waligereja Indonesia (2010) *Pedoman Pastoral Keluarga*. OBOR.
25. Congregation for the Doctrine of the Faith (1987) *Donum Vitae*. Retrieved October 9, 2018, from: [http:// www. vatican. va/roman\\_curia/ congregations/ cfaith/ documents/ rc\\_con\\_cfaith\\_doc\\_19870222\\_respect-for-human-life\\_en.html](http://www.vatican.va/roman_curia/congregations/cfaith/documents/rc_con_cfaith_doc_19870222_respect-for-human-life_en.html)
26. McTAVISH FJ (2012) Infertility and In Vitro Fertilization (IVF). *Boletín Eclesiástico de Filipinas*, LXXXVIII (891): 8.
27. Kerridge IH, Jordens CFC, Benson R, Clifford R, Ankeny RA (2010) Religious

- Perspectives on Embryo Donation and Research. *Clinical Ethics.*, 5 (1): 35-45.
28. Suta IB (October 2016) Bioetika Dalam Hindu; Studi Kasus Fenomena Bayi Tabung di Bali. *Jurnal Dharmasmrti*, XV (28): 1-17.
  29. Storrow RF (2006) Quests for Conception: Fertility Tourists, Globalization and Feminist Legal Theory. *Hastings Law Journal*, 57: 302-3.
  30. Sarojini N, Marwah V, Shenoi A (2011) Globalization of Birth Markets: A Case of Assisted Reproductive Technologies in India. *Global Health*, 7: 27
  31. Parisada Hindu Dharma Indonesia (PHDI) Pusat (1983) Himpunan Keputusan Seminar Kesatuan Tafsir Terhadap Aspek-Aspek Agama Hindu I-IX. Seminar Kesatuan Tafsir Agama Hindu Tahun 1982-1983 44-5.
  32. Ying LY, Har L, Loke A (2015) The Experience of Chinese Couples Undergoing in Vitro Fertilization Treatment: Perception of the Treatment Process and partner Support. *PLoS One*, 10.
  33. Qiao J, Feng HL (2014) Assisted Reproductive Technology in China: Compliance and Non-Compliance. *Transl. Pediat.*, 3 (2): 91-7.
  34. Crane S (2013) *Life, Liberty, and the Pursuit of Dao*. John Wiley & Sons Inc.
  35. Döring O (2008) What's in a choice? Ethical, cultural and social dimensions of sex selection in China. *Human ontogenetics*, 2(1): 11-24. [https:// doi. org/ 10. 1002/ huon.200800002](https://doi.org/10.1002/huon.200800002)
  36. Xu H (2012) Seeing the morality of “surrogate pregnancy” from Confucian ethics. *International Journal of Chinese and Comparative Philosophy of Medicine*, 10: 1.Liao J, Dessein B, Pennings G (2010) The ethical debate on donor insemination in China. *Reproductive Bio Medicine Online*, 20(7): 895-902. [https:// doi. org/ 10. 1016/ j.rbmo.2010.01.014](https://doi.org/10.1016/j.rbmo.2010.01.014)
  37. Merino F (2010) *Adoption and Surrogate Pregnancy (Global Issues)*. New York: Facts on File.
  38. Roetz H (Ed.) (2006) *Cross-cultural issues in bioethics: the example of human cloning*. Amsterdam: Rodopi.
  39. Undang Undang No. 23 Tahun (1992) Tentang: Kesehatan, Pub. L. No. 23 Tahun 1992 (23/1992) (1992). Indonesia: LN 1992/100; TLN NO. 3495. Retrieved from [https:// peraturan. bpk. go. id/ Home/ Download/35354/UU Nomor 23 Tahun 1992.pdf](https://peraturan.bpk.go.id/Home/Download/35354/UU%20Nomor%2023%20Tahun%201992.pdf)
  40. Peraturan Menteri Kesehatan Republik Indonesia Nomor 43 Tahun 2015 Tentang Penyelenggaraan Pelayanan Reproduksi Dengan Bantuan Atau Kehamilan Di Luar Cara Alami (2015) Indonesia: Berita Negara Republik Indonesia No.868, 2015.
  41. Peraturan Pemerintah Republik Indonesia Nomor 61 Tahun 2014 Tentang Kesehatan Reproduksi (2014) Indonesia: Lembar Negara 169: 2014. Retrieved from <http://peraturan.go.id/inc/view/11e4bbf20a1d55088804313335343535.htm>



