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Knowledge and Attitude of Obstetricians to the Protection of Children Born from Assisted Reproductive Technology

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ABSTRACT

Objectives: This study aims to examine the attitudes and knowledge of obstetricians in related to the Protection of Children Born from Assisted Reproductive Technologies Act 2015.

Materials and Methods: This was a survey study using a mailed questionnaires sent to 2,550 Obstetricians who were registered with The Royal Thai College of Obstetricians and Gynaecologists (RTCOG) and sent to their registered addresses. The questionnaires consisted of knowledge and attitude questions.

Results: Replies were received from 340 obstetricians with a response rate of 13.3%. Of these Thai Obstetricians, 81.5% had a good attitude to the law while 14.7% and 3.8% respectively had moderate and poor attitude. The majority (56.7%) had a good knowledge of the law, while 37.1% had a moderate knowledge and just 6.2% had a poor knowledge. Nearly one hundred percent strongly agreed that there should be a law to control ART, that the law will help monitor ART and maintain good morals as well as protecting the dignity of attending obstetricians.

Conclusion: The responded obstetricians have a good attitude towards and knowledge of the Protection of Children Born from Assisted Reproductive Technologies Act 2015. The RTCOG should inform nationwide obstetricians about this law and provide data center support.

Keywords: Assisted Reproductive Technologies, Law, Attitudes, Knowledge, Obstetrician

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ความรู้และทัศนคติของสูตินรีแพทย์ต่อพระราชบัญญัติคุ้มครองเด็กที่เกิดโดยอาศัยเทคโนโลยีช่วยการเจริญพันธุ์ทางการแพทย์ พ.ศ. 2558

ทรงพล พุทธศิริ, กำธร พฤกษานานนท์, วิบูลพรรณ ฐิตะดิลก

บทคัดย่อ

วัตถุประสงค์: *เพื่อควบคุมการใช้เทคโนโลยีช่วยการเจริญพันธุ์ทางการแพทย์ และข้อมูลเกี่ยวกับระดับทัศนคติและความรู้ของสูตินรีแพทย์ต่อกฎหมายฉบับนี้ยังมีน้อย*

วัสดุและวิธีการ: *เป็นการศึกษาเชิงสำรวจโดยการส่งแบบสอบถามทางจดหมายถึงสูตินรีแพทย์ทั้งหมดที่ขึ้นทะเบียนไว้กับราชวิทยาลัยสูตินรีแพทย์แห่งประเทศไทย จำนวน 2,550 ชุด โดยแบบสอบถามประกอบด้วยคำถามเกี่ยวกับทัศนคติและความรู้ต่อพระราชบัญญัติคุ้มครองเด็กที่เกิดโดยอาศัยเทคโนโลยีช่วยการเจริญพันธุ์ทางการแพทย์ พ.ศ. 2558*

ผลการศึกษา: *มีสูตินรีแพทย์ตอบจดหมายกลับจำนวน 340 คน คิดเป็นอัตราการตอบกลับ 13.3% โดยพบว่าสูตินรีแพทย์ที่ตอบแบบสอบถามมีระดับทัศนคติที่ดี 81.5% ระดับทัศนคติปานกลาง 14.7% และระดับทัศนคติต่ำ 3.8% ในส่วนระดับความรู้พบว่า มีระดับความรู้ดี 56.7% ปานกลาง 37.1% และต่ำ 6.2% เมื่อดูในรายละเอียดพบว่า สูตินรีแพทย์ที่ตอบแบบสอบถามเกือบทั้งหมดเห็นด้วยเป็นอย่างยิ่งต่อการมีกฎหมายควบคุมการใช้เทคโนโลยีช่วยการเจริญพันธุ์ทางการแพทย์ และเห็นด้วยเป็นอย่างยิ่งว่ากฎหมายจะช่วยควบคุม ให้การใช้เทคโนโลยีช่วยการเจริญพันธุ์ทางการแพทย์เป็นไปตามหลักจริยธรรม และกฎหมายจะช่วยคุ้มครองเกียรติศักดิ์ของสูตินรีแพทย์โดยรวม*

สรุป: *สูตินรีแพทย์ที่ตอบแบบสอบถามส่วนใหญ่มีระดับทัศนคติและความรู้ที่ดีต่อพระราชบัญญัติคุ้มครองเด็กที่เกิดโดยอาศัยเทคโนโลยี ช่วยการเจริญพันธุ์ทางการแพทย์ พ.ศ. 2558 และผู้ตอบแบบสอบถามส่วนใหญ่เห็นว่าราชวิทยาลัยสูตินรีแพทย์แห่งประเทศไทยควรเพิ่มการประชาสัมพันธ์ และจัดตั้งศูนย์ข้อมูลข่าวสารไว้เพื่อให้คำปรึกษา*

คำสำคัญ: *เทคโนโลยีช่วยการเจริญพันธุ์ทางการแพทย์, การตั้งครรภ์แทน, ทัศนคติ, ความรู้, สูตินรีแพทย์, ประเทศไทย, กฎหมาย*

Introduction

Assisted Reproductive Technology (ART) is an advanced technique that offers hope to a large number of infertile couples. The global number of babies born from ART exceeds 256,668 per year and the overall pregnancy rate per aspiration is around 30%[1,2]. Although there are many successful outcomes for these parents, there can also be a number of problems. In recent years, international commercial surrogacy or "cross-border reproductive care" (CBRC) has been a booming business. Generally, infertile couples from rich countries whose laws prohibit or restrict subjects from buying gametes and paying for surrogate births seek for that resource in low-middle income countries[3]. There are issues, such as parents of children born to surrogates sometimes abandoning children, and other problems arising from trading gametes or embryos and providing commercial surrogates[4].

In fact, there have been many case studies in Thailand. The first, in 2011 involved Taiwanese, Chinese, and Burmese agencies who forced 14 Vietnamese women to be surrogates in Thailand. The second examined the case of a western couple who used a commercial surrogate and had a successful pregnancy resulting in the birth of twins. Unfortunately, one of the babies had Down syndrome and was left with the surrogate mother[4]. The third study was of a western male-male couple who used traded oocyte in a commercial surrogate. Unfortunately there was a scramble between the surrogate and the couple to be acknowledged as the legal parents[5]. In the last piece of research, an Asian single person used traded oocytes, commercial surrogates and insemination resulting in hundreds of his children being born from this process around the world.

In the past, ART in Thailand was regulated by the Medical Council, but it had no control over people who were not physicians, and there were no legal penalties. The government of Thailand attempted to counter this problem by creating legislation to regulate ART in the form of the Protection of Children Born from Assisted Reproductive Technologies Act 2015, enacted on the first of May. The law aims to protect the rights of children born from ART, prevent commercial surrogates and regulate ART services.

The Thai legal definition of Assisted Reproductive Technologies is basically the same as that used by the World Health Organization (WHO) but includes intra-uterine insemination (IUI) and will henceforth be referred to as ART (law) in this study. The law allows only heterosexual couples in a registered marriage to access ART services. Before being involved in surrogate treatment, the attending physician should apply for permission, on a case-by-case basis, to the state committee. The requirements in order for a couple to use surrogacy are that there is a medical indication and that both parents must be Thai citizens. In the case of marriages where there is just one Thai citizen, the couple are required to have been in a registered marriage for more than 3 years. The requirements for surrogate women are that they must be a relative (of either partner) and altruistic. Couples who have no suitable relative can apply to use a non-relative surrogate, at which point the state committee will consider their application. Anyone offering to purchase, purchasing, importing, or exporting sperm, oocytes or embryos is subject to penalties. The intended parents will be the legal parents of the child, and they will not be permitted to deny parenting the child. The change in the law has wide implications, especially for obstetricians. Thus, this study aims to assess the knowledge and attitudes of obstetricians in Thailand related to this law.

Materials and Methods

This study was reviewed and approved by the ethics committee of Rajavithi Hospital. All procedure performed in studies involving human participants were in accordance with the institutional ethical standard. A total of 2,716 living Obstetricians were registered with The Royal Thai College of Obstetricians and Gynaecologists (RTCOG) as at

4th August 2015. Addresses were available for 2,550 of these, and the questionnaires, information sheets, and informed consent forms were sent to all of them. Inform consent was obtained from all individual participants included in the study. The Questionnaires consisted of research definitions and questions about demographic data, knowledge, attitude, and the need for obstetricians to receive information about the Act.

Knowledge questions were designed relating to the content of the new law in comparison to previous practice and to the legal penalties involved. Knowledge was measured by 20 true/false questions which covered 10 topics including the date of law enforcement, definition of ART, definition of IUI, marital status of couples, minimum duration of registered marriage, permission to use surrogates, requirements for being a surrogate, type of surrogate permitted, parenthood of children born from a surrogate, and criminal issues. The requirement for "good knowledge" was a score of 80% or more, "fair knowledge" was defined as a score between 60-79%, and "poor knowledge" indicated a score of below 60%.

A total of 15 attitude questions were designed in relation to the content of the new law in comparison with previous practice and related issues, and attitude was measured using a Likert's scale of 5 levels. The questions covered 10 topics regarding attitude to the content of the law, its effect on access to ART, and its impact on work, dignity, and medical ethics. A good attitude was taken as agreement with the principles and good sense of the content of the law. There were 2 types of questions: positive questions asking for agreement and good sense of the contents of the law; and negative questions asking for contrary attitudes and a bad sense to the content of the law. In positive questions "strongly agree" was level 5, "agreement" level 4, "neither agree nor disagree" level 3, "disagree" level 2 and "strongly disagree" level 1. Level assignments were converse in negative questions.

In each question, attitude score was the same as attitude level. Attitude classified as having a good, fair and poor mean that those who had total scores of 80% or more; between 60-79% and less than 60% respectively. Question validity and reliability were tested in a pilot study with 30 obstetricians. The knowledge and attitude questions had Cronbach's alpha coefficient of 0.72 and 0.70 respectively.

Statistical analysis

Data were presented as mean ± standard deviation (SD) for continuous variables and number (%) for categorical variables. Analysis was made by the software program SPSS for Windows version 17.0 (SPSS Inc., Chicago, Illinois, USA). Factors associated with knowledge and attitude were analyzed using Chi-square or Fisher's Exact test. A p value of less than 0.05 was considered to be statistically significant.

Results

A total of 2,550 questionnaires were sent by mail to obstetricians in Thailand using their addresses registered at the RTCOG. Replies were received from 340 obstetricians with a reply rate of 13.3%. Age of respondents varied from 28-83 years, mean age 44.7±11.9 years, and males accounted for 52.1% of respondents. The majority of participants (56%) were trained in general obstetrics, followed by 14.5%, and 12.8% of respondents who were trained in reproductive medicine and family medicine respectively. Participants' work places were private hospitals and clinics 24.4%, regional hospitals 22.9%, and medical schools 19.7%. Those who had supplied infertility services within 1 year of IUI accounted for 81 (24%) of respondents compared with 53 (15.6%) who had been involved in ART.

Obstetricians with good knowledge of the law represented 56.7% of the total subjects, while 37.1% and 6.2% had moderate and poor knowledge respectively. The questions that were answered correctly most often were whether: 1) Intended parents are legal parents of children born from

surrogacy, if operating legitimately; 2) Offering to purchase, purchasing, importing, exporting sperm, oocytes or embryos carries penalties; 3) Commercial agencies offering surrogacy services will be penalized. The questions answered incorrectly most frequently were about 1) When the law took effect; 2) Whether Intrauterine insemination (IUI) was included in ART (law); 3) Whether Gamete Intrafallopian Transfer (GIFT) was included in ART (law). (Table 1)

Table 1. The top 5 correctly-answered and incorrectly-answered questions (n = 340).

	Percent correct answer (n)
Top 5 highest score	
1. Intended parents are legal parents of children born from surrogacy, if operating legitimately.	97.9 (333)
2. Offering to purchase, purchasing, importing, exporting sperm, oocytes or embryos is subject to penalties.	94.4 (321)
3. Commercial agencies for surrogates are subject to penalties.	92.4 (314)
4. Applicant for the use of surrogacy services must apply individually.	88.5 (301)
5. The law just allows gestational surrogate.	88.2 (300)
Top 5 lowest score	
1. When the law was effected?	57.1 (194)
2. Intrauterine insemination: IUI was included in ART (law).	61.5 (209)
3. Gamete intrafallopian transfer: GIFT was included in ART (law).	64.7 (220)
4. Ovarian stimulation follow by natural sexual intercourse was not included in the law.	67.9 (231)
5. Couples should register marriage before applying for ART services.	73.2 (249)

Total responded obstetricians having a good attitude to the law accounted for 81.5% of participants, followed by those with moderate and poor attitudes at 14.7% and 3.8% respectively. Moreover, the percentage of good attitude to the law between obstetricians who practice and not practice ART has a difference (43.4% vs. 88.4%; $p < 0.01$). The most positive attitude related to the belief that 1) Laws are required to control ART; 2) The law will help monitor ART and maintain good moral attitudes; 3) The law will protect the dignity of obstetricians. The most negative attitudes were towards the belief that 1) The conviction of a doctor relating to the use of ART should be the duty of the Medical Council; 2) The law will make it harder for couples to access ART; 3) Same-sex couples should not be allowed to use ART. (Table 2)

Table 2. The top 5 best and worst attitudes (n = 340).

Factors	Strongly disagree (%)	Disagree (%)	Neither agree nor disagree (%)	Agree (%)	Strongly agree (%)	Mean
Top 5 highest score						
1. Law is required to control ART (law).	0	0.6	2.9	25.7	70.8	4.67 (0.56)
2. The law will help monitor ART and maintain good moral attitudes.	0.3	1.5	8.8	36	53.4	4.41 (0.74)
3. The law will protect the dignity of Obstetricians.	1.5	3.8	10.9	32.4	51.4	4.28 (0.91)
4. The law allows doctors to work with peace of mind because it tells them what they can and cannot do.	1.5	3.5	13.9	36.9	44.2	4.19 (0.91)
5. Couples who require the use of ART services should in a registered marriage.	6.8	12.7	11.8	30.4	38.3	3.81 (1.26)
Top 5 lowest scores						
1. The conviction of a doctor relating to the use of ART should be the duty of Medical Council [n]	26.1	47.8	16.3	8.0	1.8	2.12 (0.95)
2. The law will make it harder for couples to access ART. [n]	13.6	23.3	24.5	31.9	6.7	2.95 (1.17)
3. Same-sex couples should not be allowed to use ART.	7.1	21.7	26.1	22	23.1	3.32 (1.24)
4. The law restricts the use of medical judgment.	6.8	13.3	26.3	42.8	10.8	3.38 (1.06)
5. Expect that the law will be enforced effectively	2.1	7.4	41.4	37	12.1	3.5 (0.88)

[n] is negative question

Significant factors associated with knowledge and attitude were education, work place, and status in relation to the provision of ART and IUI in the previous year ($p < 0.01$). Factors associated with knowledge are shown in Table 3. Finally, 97.4% of obstetricians agreed that they should be given more information about the Act, and 94.6% believed that an information support center should be provided. (Data not showed)

Table 3. Factors associated with knowledge (n = 340).

Factors	Low (%)	Medium (%)	High (%)	p value
Education				< 0.01*
General OB	7.9	45.0	47.1	
Reproductive Med	0.0	10.2	89.8	
Maternal Fetal Med	0.0	43.5	56.5	
Gynecologic Oncology	9.0	45.5	45.5	
General OB and Family medicine	4.6	23.3	72.1	
Work place				< 0.01*
Medical school	2.4	25.3	72.3	
Regional hospital	10.4	28.4	61.2	
Province hospital	3.8	44.9	51.3	
Community hospital	3.6	50.0	46.4	
Private hospital/ clinic	23.8	33.3	42.9	
Government officer	6.3	37.5	56.2	
Others	5.3	52.6	42.1	
ART (law) services status				
Recent IUI				< 0.01*
Yes	5.0	16.0	79.0	
No	6.6	44.0	49.4	
Recent ART				< 0.01*
Yes	3.8	9.4	86.8	
No	6.6	42.3	51.1	

* Statistical significance at $p < 0.05$

Discussion

Thailand introduced legislation to protect the rights of children born from ART and prevent commercial surrogates in the form of the Protection of Children Born from Assisted Reproductive Technologies Act on May 1, 2015. The law permits only male-female couples in registered marriages to access ART services. The United Kingdom has had these laws since 1990, with amendments in 2008[6]. There are some provisions in the UK legislation that are similar to the Thai laws: both ART and IUI are governed by the legislation, and both laws prohibit sex selection for social reasons and confirm the right of intended parents to be legal parents. There are also some differences; for example, the UK law allows non-married couples, same-sex couples and single females to access ART whereas the Thai law does not. Like Thailand, Australian federal law bans commercial surrogates, and the intended parents are considered to be the legal parents of children born from surrogates[7]. However, there are some differences in each state.

This is the pioneer study of the Protection of Children Born from Assisted Reproductive Technologies Act in Thailand. Obstetricians who had a good knowledge of the law accounted for 56.7% of respondents, while 81.5% had a good attitude. Unfortunately, although more than half of obstetricians have good knowledge, ignorance of the law is not an acceptable excuse to evade legal liability. In addition, the percentage of good attitude to the law among

obstetricians who practice ART quite low compared to the other group (43.4% vs. 88.4%; $p < 0.01$). The lower attitude level to the law is due to the limited professional decision and serious legal penalties.

With regard to participants who achieved low knowledge scores, it is possible that they may have been confused about the date of law enforcement because the law took effect 90 days after legislation rather than on the day of legislation, and this study was conducted shortly after the law took effect. Knowledge about procedures that are included in ART (law) was low because the law defines ART as including IUI, unlike the WHO definition of ART which does not. Moreover, couples are required to be in a registered marriage, and this is a change from the previous practice.

It is noteworthy that almost one hundred percent strongly agreed that a law is required to control ART, that the law will help monitor ART and good morals, and that it will protect the dignity of attending obstetricians. On the other hand, there were some contrary views as well. Overall, 73.9% of obstetricians agreed with the idea that the conviction of a doctor relating to the use of ART should be the duty of the Medical Council rather than the courts. In general, the Medical Council governs all professional ethic issues in the cases of physicians; however, physicians who violate one of 11 selected sections in this law will be judged directly by the courts. These 11 sections include regulations related to physician property, patient evaluation, storage of gametes and embryos, pre-gestational diagnosis, couples' marital status, donor sperm insemination, processes in surrogate pregnancy, properties of surrogates, termination of pregnancy, research on embryos, and the use of donor gametes or oocytes.

In addition 36.9% agreed that the law will make it harder for couples to access ART. Not surprisingly, compared to the past, accessibility is more restricted. Only male-female couples in registered marriages are allowed access to ART. In addition, the purchase of gametes or embryos is prohibited. In contrast, Heng BC suggested that the law restrictions may push gamete and embryo donation underground[8]. The state committee should consider the appropriate compensation for donors. The most important factor to address is how to strike a balance between convenience and social safety.

Some interesting facts emerged: 68.7% of respondents believed that recently registered couples should be allowed to have access to ART, and 56.7% disagreed with the notion that single people should not be allowed to have access to ART (data not showed in the table). These provisions of the law can be explained by reactions to case studies of the scramble between a male-male couple and a surrogate mother to be acknowledged as the legal parents of a surrogate child, and to the Asian single man's multiple inseminations[5]. Moreover, children born to non-married couples face controversial issues relating to barriers to health care, schooling and cognitive outcomes[9,10].

An Israeli study concluded that 61% of gynecologists agreed that they have a duty to evaluate infertile couples in order to ensure the future well-being of the planned child. A total of 72% considered it necessary to evaluate medical history, while 66% advocated psychiatric evaluation and 40% supported the involvement of social workers; on the other hand, only 17% expressed concern about marital status[11]. Judy et al, surveyed attitudes to providers and directors of ART clinics in the United States. Providers believed in restricting ART services for couples who had been convicted of child abuse (89.6%) or who consumed excessive alcohol (81.8%). On the other hand, marital status was a lesser concern[12].

This study had some limitations. The response rate in our study was quite low, similar to that of the study by Kovavisarach E, in which it was lower than 20%[13]. Feedback from non-participants indicated that reasons for their reluctance to respond included the fact that they preferred not to answer the questions without prior knowledge, that the questionnaire was too long, and that some mailing addresses were incorrect. In view of this, a further study may be required to be conducted by the RTCOG to raise obstetricians' awareness of this new legislation. In addition, the RTCOG should provide nationwide information to practicing obstetricians about this law and also supply

a data support center.

Finally there are complicated relationships among physicians, infertile couples, law enforcement personnel, and the public. Further research is required to assess the effect of the law on each group. This is the pioneer study in relation to the Protection of Children Born from Assisted Reproductive Technologies Act in Thailand. The responded obstetricians have a good attitude towards and knowledge of (81.4% and 56.8% respectively) the Protection of Children Born from Assisted Reproductive Technologies Act 2015. The RTCOG should provide information about this law nationally to obstetricians and supply a data support center.

Potential conflicts of interest

The authors declare no conflict of interest.

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