

KNOWLEDGE AND PSYCHOSOCIAL CONSEQUENCES OF INFERTILITY ON MEN IN A TERTIARY HEALTH INSTITUTION IN BENIN CITY, EDO STATE, NIGERIA

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ABSTRACT

This study examines knowledge and psychosocial consequences of infertility on men using the Human Reproductive and Research Program (HRRP) clinic of University of Benin Teaching Hospital in Edo State, Nigeria. A descriptive cross-sectional survey design method was adopted for this study. The population of respondents was 60 and the data were collected through questionnaires with a reliability coefficient score of 0.85 subjected to analysis using the Statistical Package for Social Sciences (SPSS) version 21 in form of frequencies, tables, percentages and Test of association was utilized with $P = 0.05$ level of significance. The study shows that many respondents are knowledgeable about the psychosocial consequences of infertility in men. This study further reveals that the psychological and sociological consequence of infertility in male is low. However, the most prominent psychological consequence gathered is hopelessness and frustration while the most prominent sociological consequences observed include loss of social status and marital disharmony. The result of the hypotheses tested showed that there is no significant association between the men's knowledge of infertility and psychological consequences. Secondly, there is no significant association between the men's knowledge on infertility and sociological consequences. It is therefore recommended that men should opt to receive counselling from an institution responsible for fertility services for better enlightenment and the need for their

involvement in sexual and reproductive health.

Keywords: Psychological consequences: Social consequences: Male infertility.

INTRODUCTION

Infertility is a medical problem particularly in developing countries and it features commonly in gynaecological consultation in most Nigerian clinics (Makar, 2011). Recent reports indicate that one in three couples is found to be affected by infertility in some of the countries around Africa (Maheshwari, 2008). According to World Health Organization (2010), about 60% of infertilities are caused by sexually transmitted infections in males and females. It is observed that men are responsible for about 30% cases of infertility, 30% in women and both partners are responsible for 5% of cases, while 25% are from unexplained causes (Cooper, 2010). The global prevalence of infertility among couples is often quoted as 8-12% (WHO, 2010), whereas, the incidence in parts of Nigeria are 4.0% (Abiodun, 2007) 15.4% (Obume, 2012), and 48.1% from Ilorin (North Central), Abakaliki (South East), and Oshogbo (South West), respectively (Hadolt and Horbst, 2009). Nigeria is a society that believes highly in traditional and extended families, who also places a lot of pressure on couples to have children (Idrisa, 2005 & Garcia, 2008).

The prevention and treatment of infertility is one of the components of reproductive health (Etuk, 2010). It is a process where health is accomplished in a state of complete physical,

mental, social and spiritual wellbeing, not just the absence of disease or disorders of the reproductive issues (Etuk, 2010). The implication is that individuals should have the ability to reproduce and regulate their fertility as well as to practice and enjoy sexual relationships that allow all individuals to go through successful reproductive life cycle (UNFPA, 1995). Infertility is often blamed on the woman even when the problem is caused by the man. This is because Africans place such a high value on children. Infertility is a major cause of divorce in sub Saharan Africa (Bhattacharya, 2007; Alvarez, 2006 & Garcia, 2008). The factors which contribute to infertility may be from either partner or both and in up to 15-20% of the couples, the cause of which cannot be found (Cousineau & Domar, 2007).

UNDP (2002) lists the causes of male infertility as: problems of production of sperm like *Oligospermia*, *Azoospermia*, *Asthenozospermia* and *Teratozospermia*, problems of obstruction of the ejaculatory tract due to infection. Alcohol intake and tobacco use have been found to be risk factors for infertility in both partners (Hollo, Larsen & Obono, 2007). The number of clients affected by infertility is estimated globally at approximately 80 million, many of which have been found to go through stressful and sometimes distressing emotions (Van der Poel, 2012). Infertility may lead to risky sexual behaviours on the part of the man as they may be encouraged by family members to either seek another wife or to impregnate another woman outside marriage so as to have a child and prove his fertility (Okonofua 2011). Although women still bear the major brunt of infertility, men too are found to suffer from stigmatization, verbal abuse, loss of social status and emotional problems due to infertility (Dyer, 2009 & Horbst, 2008). The psychological consequences of infertility include Turmoil; Frustration; Depression; Anxiety; Hopelessness; Persistent feeling of guilt and Emotional problems. The

sociological consequences of infertility are loss of social status; Social isolation; Marital disharmony; Persistent feelings of Stress; Persistent feelings of bitterness; Feeling of pessimism; Financial problem; Divorce; Polygamy; Stigmatization.

The psychosocial consequence of infertility in men is an area that is currently under researched in Benin City. Male infertility is perceived not to be a very urgent problem warranting services attention. It is observed that the male partners of infertile women attending the HRRP clinic of University of Benin Teaching Hospital felt very reluctant to accompany their partners to the clinic. In addition, they did not visit the clinic on their own except when invited by the clinic staff for investigations and also when needed to cooperate with partners for their treatment. It is therefore necessary for National Governments and International bodies to pay attention to research at service delivery on how infertility impacts on infertile men psychologically and socially, therefore this study sets out to assess the knowledge and psychosocial consequences of infertility on men in University of Benin Teaching Hospital, Benin City.

RESEARCH QUESTIONS

1. To what extent are men knowledgeable of psychosocial consequences of infertility?
2. What are the psychological consequences of infertility experienced by men?
3. What are the sociological consequences of infertility experienced by men?

METHODOLOGY

The study adopts a descriptive cross-sectional survey. This research was carried out at the Human Reproductive and Research Program (HRRP) unit in University of Benin Teaching Hospital, Benin City. The hospital is located at

Egor Local Government Area of Edo State. The study was carried out among the infertile men who attended the HRRP Centre of the University of Benin Teaching Hospital, Egor Local Government Area of Edo state from 1st June to 1st November 2017. Average daily male attendance was four (4) clients. A total of 60 men attending infertility clinic participated in the study.

A structured, self-administered questionnaire was used to collect data from the participants. Close ended questions were used. It consists of 4 sections: A to D. The questionnaire was given to experts for scrutiny to ascertain the face, content & construct validity. Reliability was ensured by carrying out a pre-test among 10 respondents from Ring Road State Hospital, Ibadan, to exclude vague item and ambiguity before final administration of questionnaire to respondents. Cronbach Alfa was used to test the reliability of this study and a co-efficient score of 0.85 was

obtained. Data collected were coded, entered and analysed using the Statistical Package for Scientific Solution (SPSS) version 21 spread sheets expressed in frequencies and percentages. Test of association such as Chi - Square test was utilized with a level of statistical significance of $p = 0.05$. A scoring system was developed for each section; knowledge was determined by grading in percentage. $<50\%$ = poor knowledge, $50-69.9\%$ = good knowledge, $70>$ = excellent knowledge. Data was presented in words and frequency tables. Ethical approval was obtained from the ethical review board of University of Benin Teaching Hospital, Benin City having been formally introduced by the Department of Nursing Science, University of Benin, Benin City. Anonymity and confidentiality: These are aimed at protecting all data gathered within the scope of the project from being divulged to others. Participants' right to anonymity is guaranteed by ensuring that the participants did not disclose their identity.

RESULTS

As presented in Table 1. The educational level of respondents revealed that 23.3% of respondents had primary education; 6.7% had secondary education while 70% had tertiary education. Further findings showed the marital status of the respondents. 80.7% are married, 10% are single while 3.3% are widowed. Also, 83.3% live with their spouses in the same house and 16.7% do not. The result of the occupation of respondents observed that 10% of the respondents are unemployed, 46.7% are self-employed; 40% are salary employed and 3.3% are casual labourers. This study reports that

23.3% of respondents have another female partner apart from their spouses while 76.7% do not. Lastly, 13.3% of respondents have children from other women while 86.7% do not. This study implies that the demographic characteristics report that majority of the respondents has tertiary education, married and live with their spouses in the same house. It also showed that majority of the respondents are self-employed or are on salary employment while majority of the respondents does not have another female partners apart from their spouses and lastly, they do not have children from other women.

TABLE 1
Demographic characteristics of respondents

Variables	Categories	Frequency	Percentage
Educational level	Primary	14	23.3
	Secondary	4	6.7
	Tertiary	42	70.0
	Total	60	100
Marital Status	Married	52	86.7
	Single	6	10.0
	Widowed	2	3.3
	Total	60	100
Do you live with your spouse in the same house?	Yes	50	83.3
	No	10	16.7
	Total	60	100
Occupation	Unemployed	6	10.0
	Self employed	28	46.7
	Salaried employment	24	40.0
	Casual labourer	2	3.3
	Total	60	100
Do you have another female partner(s) apart from your spouse?	Total	60	100
	Yes	14	23.3
	No	46	76.7
Do you have any children with these woman/women.	Total	60	100
	Yes	8	13.3
	No	52	86.7
	Total	60	100

Research question one

To what extent are men knowledgeable of psychosocial consequences of infertility?

As presented in Table 2, men demonstrate sufficient knowledge of psychosocial consequences of infertility when assessed. Out of the 60 respondents assessed, a large proportion 40 (66.6%) are knowledgeable while a small proportion 20 (33.4%) are not, this is because they score above the acceptable beach mark signifying that they are knowledgeable of

psychosocial consequences of infertility. This result implies that, men who attend Human Reproductive and Research Program (HRRP) Clinic of University of Benin Teaching Hospital in Edo State, Nigeria have knowledge of psychosocial consequences of infertility to a large extent. Also, the calculated t-value of 2.91 is greater than the critical t-value of 1.96 at 0.05 level of significance with 59 degrees of freedom. This result implies that men are knowledgeable of psychosocial consequences of infertility to a large extent statistically.

TABLE 2

Men’s knowledge of psychosocial consequences (t-test)

Categories	N	%	Mean	SD	t-value	Sig.
Knowledgeable	40	66.6	8.58	5.42	2.91	.002
Not knowledgeable	20	33.4				

Research question two

What are the psychological consequences of infertility experienced by men?

Table 4 shows the psychological consequences of infertility in men. 22% of respondents strongly agree that turmoil is a psychological consequence of infertility in men, 22% agree, while 24% disagree and 27% strongly disagree. 19% of respondents strongly agree that frustration is a psychological consequence of infertility in men, 31% agree, while 37% disagree and 14% strongly disagree. 21% of respondents strongly agree that depression is a psychological consequence of infertility in men, 21% agree, while 21% disagree and 38% strongly disagree. This study shows that 23% of the respondents strongly agree that anxiety is a psychological consequence of infertility in men, 20% agree, while 16% disagree and 41% strongly disagree. 16% of respondents strongly agree that hopelessness is a psychological

consequence of infertility in men, 34% agree, while 22% disagree and 28% strongly disagree. Similarly, 23% of respondents strongly agree that persistent feelings of guilt or worthlessness is a psychological consequence of infertility in men, 16% agree, while 43% disagree and 12% strongly disagree. 17% of respondents strongly agree that emotional problem is a psychological consequence of infertility in men, 12% agree, while 34% disagree and 32% strongly disagree.

The study concludes that the psychological consequences of infertility experienced by men who attend Human Reproductive and Research Program (HRRP) clinic of University of Benin Teaching Hospital in Edo State, Nigeria is low (44%). However, the most prominent psychological consequence as observed in this study are hopelessness (50%) and frustration (50%), while turmoil (44%), depression (42%), anxiety (43%), persistent feelings of guilt or worthlessness (46%) and Emotional problems (34%) have no psychological consequences on male infertility.

TABLE 3
Psychological consequences of infertility on men

Psychological consequences	Items	SA	A	D	SD	
Turmoil	I always feel confuse	22(37%)	13(22%)	20(33%)	5(8%)	
	I am greatly disturbed	7(12%)	21(20%)	13(22%)	19(32%)	
	I feel uncertain for not being able to have children	10(17%)	15(25%)	10(17%)	25(42%)	
		22%	22%	24%	27%	
Frustration	I take alcohol	8(13%)	18(30%)	30(50%)	4(7%)	
	I smoke cigarettes	16(27%)	18(30%)	12(20%)	14(23%)	
	I am always upset about not being able to have children	10(17%)	19(32%)	24(40%)	7(12%)	
		19%	31%	37%	14%	
Depression	As if am not in the world and also denied of God's blessing	12(20%)	18(30%)	7(12%)	23(38%)	
	Hate to attend clinic appointments	13(22%)	7(12%)	18(30%)	22(37%)	
		21%	21%	21%	38%	
Anxiety	I am always worried about not being able to have children	20(33%)	10(17%)	12(20%)	18(30%)	
	I have fear about not being able to have children	10(17%)	16(27%)	10(17%)	24(40%)	
	I am always restless about not being able to have children	12(20%)	10(17%)	6(10%)	32(53%)	
		23%	20%	16%	41%	
Hopelessness	I am in a state of despair	6(10%)	26(43%)	6(10%)	22(37%)	
	I wake up very early	12(20%)	17(28%)	10(17%)	21(35%)	
	I am always restless about not being able to have children	10(17%)	19(32%)	24(40%)	7(12%)	
		16%	34%	22%	28%	
persistent feelings of guilt or worthlessness	I always like to take alcohol	30(50%)	5(8%)	15(25%)	10(17%)	
	I lost interest in things	16(27%)	7(12%)	25(42%)	12(20%)	
	I am often restless	10(17%)	9(15%)	33(55%)	8(13%)	
	As if am not in the world and also denied of God's blessing	12(20%)	18(30%)	27(45%)	3(5%)	
	Feel bad not being able to have children	21(35%)	8(13%)	29(48%)	2(3%)	
		30%	16%	43%	12%	
Emotional problems	I am always sad	6(10%)	10(17%)	21(35%)	23(38%)	
	I resort to use of alcohol	5(8%)	13(22%)	14(23%)	28(47%)	
	I resort to smoking	20(33%)	7(12%)	26(43%)	7(12%)	
			17%	17%	34%	32%
			21%	23%	28%	27%

Research question three

What are the sociological consequences of infertility experienced by men?

Table 3 reveals the sociological consequences of infertility in men. This study observes that 25% of respondents strongly agree that loss of social status is a sociological consequence of infertility in men, 35% agreed while 32% disagree and 9% strongly disagree. 26% of respondents strongly agree that loss of social isolation is a sociological consequence of infertility in men, 22% agree while 28% disagree and 24% strongly disagree. 39% of respondents strongly agree that marital disharmony is a sociological consequence of infertility in men, 13% agree while 24% disagreed and 18% strongly disagreed. 15% of respondents strongly agree that persistent feeling of stress is a sociological consequence of infertility in men, 18% agree while 36% disagree and 31% strongly disagree.

Findings reveal that 26% of respondents strongly agree that loss of persistent feeling of bitterness or anger is a sociological consequence of infertility in men, 36% agree while 7% disagree and 22% strongly disagree. 24% of respondents strongly agree that feeling of pessimism is a sociological consequence of

infertility in men, 16% agree while 29% disagree and 18% strongly disagree. 19% of respondents strongly agree that financial problem is a sociological consequence of infertility in men, 28% agree while 25% disagree and 25% strongly disagree. 24% of respondents strongly agree that divorce is a sociological consequence of infertility in men, 19% agree while 43% disagree and 14% strongly disagree. 23% of respondents strongly agree that polygamy is a sociological consequence of infertility in men, 22% agree while 31% disagreed and 23% strongly disagree. 27% of respondents strongly agree that stigmatization is a sociological consequence of infertility in men, 28% agree while 24% disagree and 20% strongly disagree.

This study concludes that the sociological consequence of infertility in men is low (49%). However the most prominent sociological consequences that are observed in this study include loss of social status (60%), marital disharmony (52%), persistent feelings of bitterness or anger (62%) and (55%), while social isolation (48%), persistent feelings of stress (33%), feeling of pessimism (40%), financial problem (47%), divorce (43%) and polygamy (45%) have no sociological consequences on male infertility.

TABLE 4

Sociological consequences of infertility on men

Social Consequences	ITEMS	SA	A	D	SD
Loss of social status	I am called by names	20(33%)	22(37%)	14(23%)	4(7%)
	I feel that I am not respected	20(33%)	30(50%)	10(17%)	0(0%)
	People always ask funny questions	9(15%)	22(37%)	20(33%)	9(15%)
	receiving pressure from family members	10(17%)	9(15%)	33(55%)	8(13%)
		25%	35%	32%	(9%)
Social isolation	I don't attend meetings	30(50%)	8(13%)	18(30%)	4(7%)
	I don't attend socials	14(23%)	22(37%)	4(7%)	20(33%)
	I am always indoors	20(33%)	2(3%)	30(50%)	7(12%)
	No motivation to own properties	13 (22%)	20(33%)	18(30%)	9(15%)
	No longer able to attend family and towns meetings	4(7%)	18(30%)	8(13%)	30(50%)
	Can't attend social gatherings with my wife as was previously the pattern	13 (22%)	10(17%)	22(37%)	15(25%)
		26%	22%	28%	24%
Marital disharmony	I am easily irritated	40(67%)	2(3%)	10(17%)	8(13%)
	I and my wife always quarrel	10(17%)	15(25%)	20(33%)	15(25%)
	I always have disagreement with my wife	20(33%)	6(10%)	14(23%)	10(17%)
		39%	13%	24%	18%
Persistent feelings of Stress	I am always tired	17(28%)	8(13%)	31(52%)	4(7%)
	I am always tense	2(3%)	17(28%)	8(13%)	33(55%)
	I do have mood swing	10(17%)	3(5%)	30(50%)	17(28%)
	level of stress adds to infertility problem	6(10%)	16(27%)	17(28%)	21(35%)
		15%	18%	36%	31%
persistent feelings of bitterness or anger	I am always angry	10(17%)	26(43%)	10(17%)	14(23%)
	I feel disappointed over minor things	26(43%)	15(25%)	10(17%)	9(15%)
	People always hurt my feelings	10(17%)	24(40%)	10(17%)	16(27%)
		26%	36%	7%	22%
Feeling of pessimism	I belief that the worst thing has happened	10(17%)	17(28%)	16(27%)	17(28%)
	Not having children is the worst thing that can happen	16(27%)	7(12%)	17(28%)	20(33%)
	It is painful not to have a child	17(28%)	6(10%)	20(33%)	17(28%)
		24%	16%	29%	18%
Financial problem	I spend more on going to hospital	15(25%)	14(23%)	16(27%)	10(17%)
	All our money is spent on tests	8(13%)	16(27%)	11(18%)	25(42%)
	We always have difficulty in our finances	2(3%)	24(40%)	12(20%)	16(27%)
	Financially stressed	20(33%)	12(20%)	20(33%)	8(13%)
		19%	28%	25%	25%
Divorce	I seem to have no interest in my marriage	17(28%)	16(27%)	25(42%)	2(3%)
	Love for each other is fading off gradually	12(20%)	13(22%)	22(37%)	13(22%)
	Relationship with the in-laws has been affected with inability to get a child or children	15(25%)	5(8%)	30(50%)	10(17%)
		24%	19%	43%	14%
Polygamy	I have other ladies	17(28%)	14(23%)	10(17%)	19(32%)(25%)
	I have decided to marry other ladies	10(17%)	14(23%)	21(35%)	15(25%)
	If cause of infertility is uncorrectable, I will accept a second wife.	15(25%)	12(20%)	25(42%)	8(13%)
		23%	22%	31%	23%
Stigmatization	relatives pressurize to have children	15(25%)	16(27%)	9(15%)	20(33%)
	feel shy attending the clinic	22(37%)	20(33%)	12(20%)	6(10%)
	Unkind insinuations from neighbors	12(20%)	15(25%)	23(38%)	10(17%)
		27%	28%	24%	20%
	Grand Total	25%	24%	29%	20%

Hypothesis one

There is no significant association between the knowledge of respondents and psychological consequences of infertility in men.

Chi-square test was used to test this hypothesis and the result is presented in Table 5. Results in

Table 5 show that the association is not statistically significant ($p > 0.05$) and so the null hypothesis which states that there is no significant association between the men's knowledge of infertility and psychological consequences is upheld.

TABLE 5
Men's Knowledge of infertility and Psychological Consequences

	Poor	Good/Excellent	χ^2	P
Yes	4(22.2)	14(77.8)	0.130	0.719
No	12(28.6)	30(71.4)		

Hypothesis two

There is no significant association between the knowledge of respondents and sociological consequences of infertility in men.

Chi-square test was used to test this hypothesis and the result is presented in Table 6. Results in

Table 6 show that the association is not statistically significant ($p > 0.05$), and so the null hypothesis which states that there is no significant association between the sociological consequences of infertility and men's knowledge of infertility is upheld.

TABLE 6
Men's Knowledge of infertility and Sociological Consequences

	Poor	Good/Excellent	χ^2	P
Yes	6(60.0)	4(40.0)	3.409	0.065
NO	10(20.0)	40(80.0)		

DISCUSSION

This study determines the knowledge and psychosocial consequences of infertility on men in a tertiary Health Institution in Benin City. The demographic characteristics of the respondents shows that majority of the respondents have tertiary education, married and living together. Majority of the respondents are either self-employed or salary earners.

Our study reveals that the level of knowledge of the respondents on psychosocial consequences of infertility is high which is contrary to the findings of Fisher & Hammarberg (2017) that reveal that men

aspirers to parenthood but have less knowledge about fertility and the factors that affect it.

This study shows that the psychological consequences of infertility in men is low, which is in line with Nieuwenhuis & Odukogbe (2009) and Ola (2009) who reveal that men are less affected by psychological consequences even when they are the affected partner. Thorn (2010) also observes that men are reserved about displaying their emotions and can adjust more easily to a life without children than women. However, this study reveals prominent psychological consequences like hopelessness and frustration as primary causes.

This is supported by Johnson and Fledderjohann's (2012) observation of low self-esteem and emotional problems (ranging from mood swings to depression) among respondents in their study. This study is in agreement with Ofovwe, Aziken & Madu, (2007) who reveal that emotional problems and depression/mood swings are part of psychological consequences faced by infertile men. Fisher & Hammarberg (2017) also appraise being infertile as hopeless.

This study shows that sociological consequences of infertility in men is negative and this supports Fisher & Hammarberg (2017) who reports that infertility, as well as being a medical condition, has a social dimension; it is a poorly-controlled, chronic stressor with severe long-lasting negative social and psychological consequences. Despite the fact that our study reveals low sociological consequences generally some prominent sociological consequences such as loss of social status, marital disharmony, persistent feelings of bitterness or anger and stigmatization are reported. This, as evidenced by Smith, Walsh, Alan, Shindel, Paul Turek, Holly Wing, Lauri Pasch, Katz, (2009), that infertility may place significant stress on a man's social and marital relationships Thorn (2010) also reports that stigma of male infertility is stronger than that of female. Ola (2009) posits that men may also be stigmatized against. This study is also supported by Okonofua (2011) who reports that the man will likely be encouraged by family members to seek another wife or impregnate another woman outside marriage so as to have a child and prove his fertility. This study is in agreement with Ofovwe, Aziken & Madu, (2007) who observe that stigmatization/labelled a witch, spousal/in-law abuse, abandonment, polygamy, divorce, loss of respect, economic insecurity and social

exclusion are part of sociological consequences faced by infertile men.

CONCLUSION AND RECOMMENDATIONS

Given the foregoing, the study reveals that infertility can be a life crisis that brings along numbers of psychological problems. Preventive measures should be taken on the psychological problems that could affect treatment success when providing healthcare services. Childbearing is regarded as a norm and those who remain childless go through extreme grief and sense of loss. Most Nigerian cultures are based on the number of children a couple has and most cultures highly regard patrilineal descent. The common consequences of infertility observed from the study are emotional problems, stigmatization, polygamy, divorce, depression, loss of respect. Failure of infertility to be recognized as a pressing issue in the health sector further increases the severity of pain and emotions experienced by those affected the psychological aspect of infertility has been pushed to the background even though men often suffer silently during infertility treatment.

The following recommendations are made: reproductive Anatomy and Physiology should be introduced early in the country's educational curriculum so that men will have the full knowledge of the basic requirement for reproduction. Similarly, the support of an educationally informed husband improves the reproductive health of the country. It is recommended that there should be better enlightenment among men on the benefits and the need for their involvement in sexual and reproductive health.

Additionally, service providers should be trained and equipped with appropriate

knowledge and skills to accommodate men in their sexual and reproductive health programmes. Male friendly clinics should be established at all facilities to address men's sexual and reproductive health needs. Governmental organizations including ministry of health and all sectors concerned with reproductive health issues need to work on male participation in health care services. Offering empathetic support is crucial as the stress from the diagnosis and also the pressures from extended family/society contribute to the psychological distress that ensues. There should be room for psychological counselling to help male clients manage their emotions adequately while considering options of treatment or adoption. However, patients should be allowed to make their own decisions as to whether they want to take any action to address their situation. Adoption should be encouraged as a valuable method of resolving childlessness through developing clear and generous national guidelines for the child adoption process and by also enacting a law which supports same. Also, a national health care policy that supports new reproductive technology should be put in place which should also provide subsidized options of assisted reproduction.

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