

Original Article

Decision-Making in the Context of Life-Limiting Foetal Anomalies: Nursing Students' Knowledge Levels about Prenatal Tests and Foetal Rights

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Abstract

Background: The fact that nurses involved in prenatal care have an adequate level of knowledge about these issues will lead to more effective and positive health outcomes in societies where they serve. There is limited research in Turkey on the knowledge levels and attitudes of nurses and student nurses involved in prenatal care.

Purpose: This study was conducted to determine the knowledge level of nursing students about prenatal tests and foetal rights.

Methods: The sample of this descriptive study consisted of 252 3rd and 4th-grade students studying at a public university. Frequency, arithmetic mean, standard deviation, minimum and maximum values, and Mann-Whitney U and Kruskal-Wallis tests were employed in the analysis of the data.

Results: 47.6% of the students reported that they would reach the delivery decision of a baby with a high risk of an anomaly. A significant difference was found between the test scores of the groups in terms of student gender ($p < 0.05$). The socio-demographic variables of the students were found to not affect their decisions on the delivery of a baby with a high risk of anomalies and their prenatal test knowledge scores ($p > 0.05$).

Conclusions/Implications for Practice: Foetal rights, is recommended to be included in the nursing curriculum to raise the knowledge and awareness levels. Efforts aimed at contributing to facilitative student-patient relationships have a crucial role in shaping students' competency and in promoting high-quality patient care. Thus, in order to improve students' perceptions of prenatal tests and fetal rights, it is thought that students' awareness should be increased on these topics.

Key Words: ethics, foetal rights, nursing students, prenatal tests, termination of a pregnancy

Introduction

Prenatal care (PC) is very important in achieving positive results regarding maternal and infant health. The objectives of PC include risk evaluation, risk reduction, health education and providing psychological support (Dolan et al., 2007; Novick 2009). One of the goals of PC is to identify women whose foetus is at risk for developing congenital and hereditary anomalies. For this reason, genetic evaluation and prenatal screening and diagnostic tests have been recommended for many years in many countries within the scope of PC (Dolan et al., 2007;

Skirton & Barr, 2010; Lewis, 2011). A prenatal care and screening management guide has been designed and published by the Ministry of Health in Turkey (Prenatal Care Management Guide, 2014).

Prenatal testing is a broad field, and all methods have improved significantly over the past few years. Nowadays the most applied method for foetal aneuploidy analysis is non-invasive prenatal test (NIPT). Circulating foetal cell-free DNA (cfDNA) is present in a blood sample from a pregnant woman and can be used for analysis. Detection rates of trisomy 21, 18 and 13 with the

use of NIPT in pregnant women are 99.2%, 96.3% and 91.0%, respectively (Gil et al., 2015). The use of NIPT significantly reduces the need for invasive procedures (chorionic villus biopsy, amniocentesis), which are associated with an approximately 0.1-0.5% risk of miscarriage (Akolekar et al., 2015; Simpson, 2012).

Individuals' use of social services and the availability of accessible genetic counselling units and rehabilitation centres are reported to be likely to affect their attitudes towards prenatal diagnostic tests and termination of pregnancy (Alsulaiman et al., 2012). Religion, culture, tradition, and moral structure in society may hinder the individuals' preference to terminate the pregnancy and even undergoing prenatal diagnostic tests (Wong, George & Tan, 2011; Alsulaiman et al., 2012). For example, fundamentalists tend to be more reluctant to support prenatal diagnoses and abortion for foetal anomalies (Schwartz et al., 2000; Alkuraya & Kilani, 2001; Allum et al., 2014).

Saudi Arabia is a country that recognises Islamic rules which prohibit elective abortion unless deemed necessary. In Saudi Arabia, abortion is allowed only for two reasons: one is where the pregnancy poses a risk for maternal health and the other is the presence of a serious congenital anomaly in the foetus (Olwi, Merdad & Ramadan, 2016).

There is ongoing controversy about whether to terminate or maintain pregnancy due to pathologies or anomalies determined in the foetus during pregnancy. The dispute is based on discussions about whether the foetus should be considered a person. The arguments about the topic have raised questions such as "Is the foetus a person?", "When does human life begin?", "When can the foetus be regarded as a human being or a person?", and "What are the criteria for being human?" As these disputes maintain their actuality, the field of obstetrics and women's health is an area where ethical dilemmas are most intense, and nurses working in this field occasionally come into conflict with moral values (Biçer et al., 2012).

Prenatal genetic screening and diagnostic tests are optional services. For this reason, healthcare professionals should provide women with

information about prenatal screening and diagnostic tests to ensure they make cognisant decisions (Barr & Skirton, 2013). Healthcare workers in general, including especially midwives, who frequently come into contact with pregnant women, and nurses, play an important role in providing information about prenatal screening tests and identifying high-risk pregnancies and individuals who can benefit from genetic counselling services (Seven et al., 2016).

According to the regulations made in the field of nursing in Turkey, women's health nurses have duties and responsibilities such as providing counselling services and assisting families at risk for genetic diseases and guiding them through tests (Official Gazette: 2011/04). Ethical issues related to mother-infant and women's health also include foetal rights. There are various opinions on the rights, right to live, and life quality of fetuses, newborns, and babies with anomalies (Ege & Pasinlioğlu, 2000; Biçer et al., 2012). Healthcare professionals working in the field of obstetrics and gynaecology should be aware of the legal rights of the foetus before deciding whether the termination of a pregnancy is ethical. Healthcare professionals' knowledge and attitudes about foetal rights are the main determinants of the positive experiences of families.

The fact that nurses and student nurses involved in prenatal care have an adequate level of knowledge about these issues will lead to more effective and positive health outcomes in the societies where they serve. There is limited research in Turkey on the knowledge levels and attitudes of nurses and student nurses involved in prenatal care. In order to develop appropriate strategies, it is important to be aware of the views of young people (ie nursing students) who will be counselling about prenatal testing in the future. Therefore, this study was conducted to determine the knowledge level of student nurses studying an undergraduate nursing program about prenatal tests and foetal rights.

Methods

Study Design: The study was carried out in descriptive type to determine the knowledge level of students about prenatal tests and foetal rights who were enrolled in the Nursing Department of Health Sciences Faculty at a state

university and who had already taken the Women's Health and Diseases Nursing course and completed the clinical practice of the same course in the fall semester of the 2018–2019 academic year.

Participants and procedures: The universe of the study consisted of 3rd and 4th grade students (n = 268) who were enrolled in the Nursing Department of Health Sciences Faculty of a university and had already taken Women's Health and Diseases Nursing course and completed the clinical practice of the same course in the fall semester of the 2018–2019 academic year. No sampling procedure was employed in the study; instead, the whole universe was targeted. However, for a number of reasons, 16 students could not be reached (6 refused to participate in the study, and 10 were absent on the day of the application); therefore, the sample consisted of 252 students (participation rate = 94.02%). The students had already taken and completed the hospital training of Obstetrics-Women's Health and Diseases Nursing course in the third grade at the faculty where the study was carried out. Third and fourth grade students were enrolled in the sample as they were thought to have studied prenatal tests and foetal rights within the scope of the mentioned course.

Data Collection and Analysis: Two hundred and fifty-two students, who made up the study sample and agreed to participate, were administered the questionnaire form in the last week of clinical practice. The data collection form consisted of three parts: the first part questioned the demographic characteristics of the students (11 questions); the second part consisted of 25 questions under 3 sub-sections, which intended to determine the knowledge and opinions of the students about screening tests taken during pregnancy (18 multiple-choice items questioning the tests, 5 multiple-choice items collecting general information, and 2 open-ended items questioning the decision on the delivery of a baby with high risk of anomalies); and the third part involved 11 items measuring students' knowledge about foetal rights. At the outset, Ethics Committee approval and permission from the institution had been

obtained. The data were collected using a questionnaire form during the basic courses when the attendance of nursing students was high. The students were informed of the study before the questionnaire was administered, and the students who verbally stated that they volunteered to participate in the study were included in the sample. During the data collection, the forms were handed out to the students and the completed forms were collected by the researchers. It took students approximately 20–30 minutes to fill out the questionnaire form. The data obtained from the students were stored in the SPSS package programme version 20. Data were statistically analysed using frequencies (n), arithmetic mean, standard deviation, minimum and maximum values, and Mann-Whitney U and Kruskal-Wallis tests. $p < 0.05$ was accepted as statistically significant at a 95% confidence interval.

Ethics approval and informed consent: To conduct the study, the ethics committee approval (protocol no: 2018/164), official written permission from the faculty where the study was conducted, written informed consent from the participants. All procedures performed in studies involving human participants were by the ethical standards of the institutional and/or national research committee and the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. All authors of this manuscript declare:

- 1 this material has not been published in whole or in part elsewhere;
- 2 the manuscript is not currently being considered for publication in another journal;
- 3 all authors have been personally and actively involved in substantive work leading to the manuscript and will hold themselves jointly and individually responsible for its content.

Results

Table 1 shows some of the descriptive characteristics of the students. 59.9% of the students were in the 3rd grade, 78.2% were female, 99.2% were single, and 69.4% had three siblings. Overall, 57.1% of the students reported that they had spent most of their lives in a village.

Table 1: Socio-demographic characteristics of the students (n=252)

Chracteristics		Number (n)	Percentage (%)
Grade	3 rd grade	151	59.9
	4 th grade	101	40.1
Gender	Female	197	78.2
	Male	55	21.8
Marital status	Married	2	0.8
	Single	250	99.2
Number of siblings	1	12	4.8
	2	65	25.8
	3	109	43.2
	4 and above	66	26.2
Place of residence	Village	144	57.1
	County	72	28.6
	Province	36	14.3
Geographical location	The Marmara	68	27.0
	The Aegean	15	6.0
	The Mediterranean	19	7.5
	The Central Anatolia	54	21.4
	The Black Sea	65	25.8
	The Eastern Anatolia	14	5.6
	The Southeastern Anatolia	17	6.7

The majority of students were found to live in the Marmara, Central Anatolia, and Black Sea regions (Table 1). Mean student age, although not given in the table, was calculated as 21.74 ± 1.25 years. In addition, the majority of the student parents were found to have middle or elementary school education (72.7% and 57.9% respectively). Moreover, 74.6% of the mothers and 8.3% of the fathers were found to be unemployed.

Table 2 presents student responses to questions about prenatal screening tests. The majority of the students were found to have accurate information about prenatal screening tests other than urine culture (12.7% correct) and Doppler (15.1% correct) tests. In general, the students were determined to have accurate information about prenatal screening tests (Table 2).

Table 2 Students' knowledge about prenatal screening tests

Prenatal Questions	Test	Distribution of the Student Responses					
		Should be administered to every pregnant woman		Should only be administered to risky pregnancies		I have no idea.	
Prenatal screening tests		(n)	(%)	(n)	(%)	(n)	(%)
		Double screening test	225	89.3	16	6.3	11
Triple screening test	149	59.1	94	37.3	9	3.6	
Ultrasound	241	95.6	5	2.0	6	2.4	
Complete blood count	242	96.0	3	1.2	7	2.8	
Blood biochemistry	238	94.4	5	2.0	9	3.6	

Urine test	237	94.0	7	2.8	8	3.2
Urine culture	207	82.1	32	12.7	13	5.2
Hepatitis B, Hepatitis C, AIDS screening	229	90.9	13	5.1	10	4.0
Rubella	197	78.2	31	12.3	24	9.5
Determination of blood group and Rh factor	234	92.8	11	4.4	7	2.8
Oral glucose tolerance test (OGTT)	161	63.9	76	30.1	15	6.0
Herpes viruses	146	57.9	77	30.6	29	11.5
TORCH scan	168	66.7	59	23.4	25	9.9
Bleeding profile	164	65.1	68	27.0	20	7.9
Amniocentesis	67	26.6	170	67.5	15	5.9
NST	227	90.1	19	7.5	6	2.4
Doppler	190	75.4	38	15.1	24	9.5
Measurement of blood pressure	243	96.4	5	2.0	4	1.6
General information about prenatal screening tests	Yes		No		No idea	
	(n)	(%)	(n)	(%)	(n)	(%)
Are screening tests necessary during pregnancy follow-up?	249	98.8	2	0.8	1	0.4
Is the decision on which tests to apply given according to the gestational weeks?	215	85.3	36	14.3	1	0.4
Does a test result indicating high risk mean the baby definitely has anomaly?	24	9.5	223	88.5	5	2.0
Does a test result indicating no high risk at all mean the baby is completely healthy?	8	3.2	239	94.8	5	2.0
Is the pregnant woman advised to re-take these tests at another health center if the test results indicate a high risk?	210	83.3	18	7.2	24	9.5

The opinions of the students on their decision to deliver a foetus with an anomaly are given in Table 3. Only 9.1% of the students stated that they might consider ending a pregnancy with a high risk of an anomaly. In the case of anomaly diagnosis in the foetus, 52.4% of the

students stated they would never terminate the pregnancy, while 34.1% replied that they would terminate if the foetus was diagnosed to have encephalocele/anencephaly. In addition, 34.5% stated that they would also end the pregnancy if the foetus had multiple organ deficiencies (Table 3).

Table 3 Students' opinions about their decisions on the delivery of a fetus with anomalies

Questions	Distribution of the opinions	
	n	%
What would your decision on the delivery of a baby at high risk of anomaly be?		
Terminating the pregnancy	23	9.1
Delivering the baby	120	47.6
Undecided.	109	43.3
What is the diagnosis that would definitely suggest ending the pregnancy?*		
I would never terminate it.	132	52.4
Encephalocele / Anencephaly	86	34.1
Intersex	42	16.7
Down syndrome	29	11.5
Lack of an organ	23	9.1
Lack of multiple organs	87	34.5
Conjoined twins	59	23.4

* Multiple responses were supplied

As is seen in Table 4, the study investigated whether there was a difference between the socio-demographic characteristics of the students and their decisions regarding

delivering a baby with a high risk of an anomaly; as a result, gender was found to have an effect on making these decisions ($X^2 = 19.972$; $p = 0.00$).

Table 4: The relationship between students' socio-demographic characteristics and their knowledge about prenatal diagnostic tests and foetal rights, and their opinions about the delivery of a fetus with anomalies

Socio-Demographic Characteristics		The decision on delivering a foetus with a high risk of an anomaly				Knowledge scores for prenatal diagnostic tests			
		Terminating the pregnancy (n %)		Delivering the baby (n %)		Undecided (n %)		Min- Max	Mean \pm SD
Gender	Female	14	7.1	107	54.3	76	38.6	13-22	17.92 \pm 1.67
	Male	9	16.4	13	23.6	33	60.0	1-23	17.53 \pm 2.64
Test and p value		$X^2=19.972$ $p=0.000$				$Z=-2.915$ $p=0.004$			
Grade	3 rd grade	9	6.0	76	50.3	66	43.7	1-22	17.54 \pm 2.83
	4 th grade	14	13.9	44	43.6	43	42.5	3-23	17.52 \pm 2.63
Test and p value		$X^2=6.280$ $p=0.099$				$Z=-0.883$, $p=0.942$			
Number of siblings	1	1	8.3	7	58.4	4	33.3	16-20	17.92 \pm 1.16
	2	9	13.8	28	43.1	28	43.1	13-22	17.98 \pm 1.87
	3	10	9.2	50	45.9	49	44.9	3-23	17.59 \pm 2.21
	4 and above	3	4.5	35	53.1	28	42.4	1-22	16.92 \pm 3.80
Test and p value		$X^2=4.516$ $p=0.607$				$X^2=2.539$ $p=0.468$			
Place of residence	Village	14	9.7	68	47.2	62	43.1	3-23	17.82 \pm 2.33
	County	4	5.6	36	50.0	32	44.4	13-22	17.44 \pm 1.90
	Province	5	13.9	16	44.4	15	41.7	1-20	16.55 \pm 4.37
Test and p value		$X^2=2.169$ $p=0.705$				$X^2=4.123$ $p=0.127$			

Another aspect analysed in the study was whether there was a difference between the socio-demographic characteristics of the students and their knowledge scores for prenatal diagnostic tests. As a result of the analysis, a difference was found between the groups in terms of gender, but the difference was determined to be significant ($Z = -2.915$; $p = 0.004$). Although not presented in the table, some of the variables such as number of siblings, place of residence, geographical region, mother’s employment status, and student grade did not yield a difference in terms of students’ decisions on delivering a foetus with a high risk of an anomaly and their knowledge scores regarding prenatal diagnostic tests ($p > 0.05$; Table 5). As seen in Table 5, students’ opinions about foetal

rights were questioned, and 44.8% of the students were found to respond "yes" to the statement "A foetus must be born alive and completely proceeded so that it can be considered a person". Some of the other “yes” responses and the rates of the responses were as follows: “Any kind of donation can be made to the child in the womb before it is born”, 38.5%; “An intervention that is not wanted by the mother can be exerted by law if necessary”, 12.3%; and “In the case of anomalies inconsistent with life, termination of pregnancy between 10 and 22 weeks of gestation is appropriate in medical, legal and ethical terms”, 49.2%. These answers indicated that more than half of the students did not have sufficient information about this matter (Table 5).

Table 5 Students’ knowledge about foetal rights

Knowledge about foetal rights	Distribution of the Responses					
	Yes		No		No idea	
	(n)	(%)	(n)	(%)	(n)	(%)
A foetus must be born alive and completely proceeded so that it can be considered a person.	113	44.8	114	45.2	25	9.9
A child benefits from civil rights as of the time of the mother's conception.	196	77.8	36	14.3	20	7.9
As of the time of the mother’s conception, a foetus can be the heir before it is delivered provided that it is born alive.	134	3.2	62	24.6	56	22.2
When a person dies, if a foetus is found among the heirs, the sharing of the inheritance is postponed until its (the fetus) birth.	140	55.6	33	13.1	79	31.3
A woman who becomes pregnant out of wedlock can file a paternity suit against the father before the birth or during the pregnancy.	157	62.3	29	11.5	66	26.2
Even if the woman is not a plaintiff, the court shall immediately appoint a trustee to protect the child's rights when informed about the birth out of wedlock.	154	61.1	23	9.1	75	29.8
Any kind of donation can be made to the child in the womb before it is born.	97	38.5	56	22.2	99	39.3
An intervention that is not wanted by the mother can be exerted by law if necessary.	31	12.3	174	69.0	47	18.7
In pregnancies more than 10 gestational weeks, unless imperative, the person who causes a miscarriage or the mother who has a miscarriage on her own consent is sentenced to 2-5 years imprisonment.	130	51.6	34	13.5	88	34.9
After the 22 nd gestational week, no one has the right to take the rights of a fetus for any reason for live and healthy delivery at the right time and with the right method.	217	86.1	12	4.8	23	9.1
In the case of anomalies inconsistent with life, termination of pregnancy between 10-22 weeks of gestation is appropriate in medical, legal and ethical terms.	124	49.2	61	24.2	67	26.6

Discussion

Prenatal care is highly important in terms of positive outcomes regarding maternal and infant health. In many countries, genetic evaluation, prenatal diagnostic and screening tests are recommended during PC (Dolan et al., 2007; Lewis, 2011; Novick, 2009; Skirton & Barr, 2010). Since prenatal diagnostic and screening tests are optional services, healthcare professionals should provide women with information about prenatal screening and diagnostic tests to help them make informed decisions on these issues (Barr

& Skirton, 2013). In Kou et al. (2015), approximately half of the women were found to not know anything about the applicability of non-invasive prenatal tests to groups at specific risk (Kou et al., 2015).

In a study by Seven et al. (2016), women were found to believe that they did not have sufficient information about screening tests during their pregnancy (Seven et al., 2016). Bilgin et al. (2010) found that 55.5% of the pregnant women who either had a double screening test or a triple screening test, or who had both, defined triple screening test as an "intelligence test for babies" (Bilgin et al., 2010). In a study by Öcal et al. (2016), the majority of women were reported to be unaware of the meaning of quantitative data on Down syndrome risks (Öcal et al., 2016). For these reasons, it is of crucial importance that student nurse candidates who will serve as nurses in the future should graduate with adequate knowledge on this subject.

In our study, the majority of the nursing students were determined to have accurate information about diagnostic tests and prenatal screening tests, except for urine culture (12.7% accurate) and Doppler (15.1% accurate) tests (Table 2). Keng et al. (2013) reported that nursing undergraduate students had adequate information about prenatal genetic screening tests (Keng, Stephen & Yi, 2013). In their study with university students, Olwi, Merdad, and Ramadan (2016) found that 71% of the students had heard of the term "genetic testing", and the majority of answers about genetic diseases were correct, but that students' answers to questions about the characteristics of genetic diseases were incorrect (Olwi, Merdad & Ramadan, 2016). In the study of Sulaiman and Zainuddin (2018), among the participants from different faculties (faculty of medicine, supplementary health services, dentistry, pharmacy, nursing, and faculty of science), students from the faculty of medicine and faculty of nursing were found to obtain higher scores from questionnaires about thalassemia, Down syndrome, and neural tube defect screening tests compared to the scores of students from other faculties (Sulaiman & Zainuddin, 2018).

Overall, 47.6% of the students in our study reported that they would make the delivery decision of a baby with a high risk of an anomaly, while 43.3% reported

that they were not sure about the decision. More than half of the students stated that they would never terminate a pregnancy no matter what foetal anomaly was diagnosed, while 34% said they could terminate a pregnancy if the foetus was diagnosed with encephalocele/anencephaly. In addition, 34.5% stated they could also terminate the pregnancy in case of multiple organ deficiency (Table 3). In the study of Alsulaiman et al. (2012), diagnoses that often caused women to prefer the termination of the pregnancy were listed as anencephaly, trisomy 13 or 18, quadriplegia, Duchenne muscular dystrophy, and severe learning disability (Alsulaiman et al., 2012). A study conducted in the United States found that thereabout one third of women continue a pregnancy diagnosed with trisomy 21 (Natoli et al., 2012). In Austria, 22% of women diagnosed with trisomy 13 or 18 are still pregnant (Lakovscek et al., 2011). Worldwide estimates are that between 37% and 85% of parents continue their pregnancy with a poor prenatal diagnosis (Wool, 2013).

In the study of Olwi, Merdad, and Ramadan (2016), 42% of the students stated that they could decide on abortion in case of a genetic disease in the foetus, while 33% stated that they would not accept it. In the same study, less than half of the participants stated that they would discuss the abortion option with their doctor (Olwi, Merdad, & Ramadan, 2016). In the study of Altan, Rahman and Sırrı (2013), 28.4% of the medical students stated that the decision to terminate the pregnancy belonged to the parents, while 5.3% said that pregnancy could be terminated if the viability of the foetus at birth was low and the anomaly was predicted to affect mental functions of the baby negatively (Altan, Rahman & Sırrı). In Saudi Arabia, approximately ¼ (23% and 25.2%) of couples having a foetus who was genetically affected and/or had incurable genetic problems were reported to accept abortion (Al-Khaldi et al., 2002; Alsulaiman et al., 2014). In the study of Georgsson et al. (2017), although the general knowledge level of the students about the consequences of Down syndrome was found to be low in this study, more than two-thirds of the students stated that having a baby with Down syndrome would be an important problem. Ternby et al. (2015) concluded in their study with 105 pregnant women and 104 partners that the participants had different or low levels of knowledge about medical, cognitive and social consequences of Down syndrome.

The current study investigated whether there was a difference between the socio-demographic characteristics of the students and their knowledge scores about prenatal tests. As a result of the analysis, a significant difference was found between the groups in terms of gender (Table 4). Similar to our study, in the study of Olwi, Merdad and Ramadan (2016), women were determined to have more information

about genetic tests than men (Olwi, Merdad & Ramadan, 2016). These results show that gender and personal contact are important to inform about prenatal testing. Unlike our study, Sulaiman and Zainuddin (2018) reported no difference between male and female participants in terms of their knowledge and perceptions about thalassemia, Down syndrome, and neural tube defect screening tests (Sulaiman & Zainuddin, 2018). In the study of Altan, Rahman, and Sirri (2013), there was no significant difference between female and male medical faculty students in terms of their responses to the question whether the life of a foetus with the risk of anomalies should be ended (Altan, Rahman & Sirri, 2013).

Our study found that socio-demographic characteristics of students, such as the number of siblings, place of residence, geographical region, mother's employment status, and student grade, did not have an effect on their knowledge scores for prenatal screening tests and their decisions regarding delivering a foetus with a high risk of anomalies (Table 4). Melas et al. (2012), no gender differences were detected. In the study by Georgsson et al. (2017) found that a larger percentage of women had a more positive attitude to the ultrasound examination, and a larger percentage reported that they would decide for the prenatal examination themselves. In the study conducted by Van Schendel et al. (2014), those researchers did not find a striking differences between women and men in attitudes towards non-invasive prenatal testing. In contrast to our study, Olwi, Merdad, and Ramadan (2016) found that upper-class students had more information about genetic testing (Olwi, Merdad & Ramadan, 2016). Various factors may influence the termination of pregnancy in individuals. Religion, culture, tradition, and moral values in the society may hinder the choice of ending a pregnancy and even prenatal diagnosis (Wong, George & Tan, 2011; Alsulaiman et al., 2012). Considering that the students making up the sample of our study had cultural features similar to the socio-cultural structure of our country, their decisions to end a pregnancy may have been affected by their socio-cultural structures, regardless of their professional knowledge.

Patient rights advocacy is one of the developing contemporary roles of nurses. Within the scope of an advocacy role, nurses have duties and responsibilities such as defending the legal rights of patients and helping them to seek their rights when necessary (Ardahan, 2003). Student nurse candidates should have adequate knowledge about these roles before graduation. In our study, the examination of students' answers about foetal rights indicated that more than half of the students were determined to not have enough information about this topic (Table 5). Article 582 of the Turkish Civil Code regarding foetal rights states that "a foetus can be the heir provided that it is

born alive." Additionally, according to Article 28, "The right to be a person starts as of the moment the foetus is born alive with a complete expulsion and ends when the person dies. An infant gets all of its civil rights at the time when the mother conceives" (Turkish Civil Code, 2001).

Student nurses should act in accordance with the ethical principles and legal regulations in all interventions during the gestational period of a mother. This is particularly important in terms of providing solutions complying with national and international ethical principles for the benefit of the mother and the foetus.

Limitations: The sample of the study was limited to the 3rd and 4th grade students who had already taken the Women's Health and Diseases Nursing course at the Nursing Department of the Faculty of Health Sciences of a public university. Students who agreed to participate in the study were included in the sample.

Conclusion: In conclusion, the study determined that although the knowledge level of student nurses about prenatal diagnostic tests was high, their knowledge level about foetal rights was low. In addition, nearly half of the students stated that they would decide to deliver a baby with a high risk of an anomaly. In light of these results, prenatal diagnostic tests and foetal rights should be given more comprehensive coverage in the theoretical and clinical teaching syllabus to improve the knowledge and awareness of student nurses, especially with regard to foetal anomalies and foetal rights. The study is suggested to be carried out in different occupational groups and societies with a different socio-cultural structure using a multi-centred approach and large size samples.

Acknowledgements: We are thankful to the nursing students who participated to this study.

Ethical approval / Permissions: Prior to the data collection process, necessary permission was obtained from the educational institutions where the study would be conducted. In addition, the study was approved by Abant İzzet Baysal University, Ethics Committee for Human Research in Social Sciences (protocol no: 2018/164). The participants were made sure that the information collected in the study would be kept confidential and that they would not be asked for their personal information. The research was carried out in accordance with the Helsinki Declaration Principles.

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