The relationships between sociodemographic characteristics and attitudes to induced abortion following detected fetal anomaly

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Background: Induced or artificial abortion is an elective termination of pregnancy for reasons such as unwanted pregnancy or detected birth defects in the fetus. Abortions and the related moral dilemmas are as old as time, and are common worldwide. This issue has medical, psychological, social, moral, political, legal and religious aspects, but it is still unclear which factors affect the public’s attitudes to abortion following anomalies detected in the fetus. This study aimed to examine the attitudes of the general population in Israel to abortions related to detected fetal anomalies and diseases. Methods: A questionnaire composed for the research purposes, and which related to induced abortion following anomalies detected in the fetus, was distributed to 161 participants from the general population aged 18–65 using a virtual snowball method. Results: Results showed that the more religious respondents were, the more negative their attitude to induced abortions was. Economic status also affected attitudes, so that people with a higher than average income had a more favorable attitude than people with a lower income. No differences were found between Jews and non-Jews, or various levels of education. Discussion: The findings suggest a correlation between the degree of religiosity and attitudes towards abortion following anomalies detected in the fetus, so that the more religious one is, the more negative his or her attitude to abortion is. Religion and abortion are closely connected in social and religious discourse in Israel.

Keywords
Abortion, Fetal anomaly, Fetus, Religion, Informed decision-making

1. Introduction

In Israel, a nation with a forceful religious lobby, about 4000 women terminate their pregnancy every year due to detection of fetal anomalies [1]. Analysis of the reasons for induced abortions and the people’s family status indicates that most terminations following detected fetal anomalies were among married people.

Few data are available regarding the distribution of fetal anomaly, which means that the definition of abortion following fetal anomaly detected in the fetus is wide. In practice, the general term ‘fetal defect’ includes a wide variety of anomalies that can range from mild to severe, physical or mental, and fetal death. The essence of the fetal defect is essential in the perception of pregnancy termination and forming the experience of abortion [2, 3]. There is an enormous difference between the experience of a woman, who decides to end her pregnancy because of a mild defect, the experience of a woman whose fetus has a high chance of being born with a severe mental or physical disability, and the experience of fetal death, which refers to the spontaneous intrauterine death of a fetus. Many people describe the enormous difficulty of terminating a live fetus, especially after they have felt its movements [4, 5]. There are also differences between attitudes to mental retardation and fetal anomalies that might lead to severe physical disability according to the child’s future suffering; namely, that a child with a mental disability is not destined to experience prolonged physical suffering or early death [6–9].

The decision to choose induced abortion following the detection of a fetal anomaly is a difficult decision, which most couples or individuals must make under time pressure [3]. The further along the pregnancy is, the tougher the mental and physical process of abortion is. If a cognitive defect was detected, people’s main consideration whether to keep the pregnancy and raise the child concerns the child’s quality of life, acceptance by the environment, and uncertainty as to the child’s future when the parents are no longer able to provide care. Another consideration of induced abortion when it is clear that the child will be born ill or retarded is the financial and mental ability to care for the child [10]. When there are other children, many parents feel that it is unfair to them and the family as a unit to have a special needs child, especially if they have the opportunity to terminate the pregnancy [11, 12]. Feelings of difficulty about abortion should be specified in relation to ending a planned, wanted pregnancy due to a detected anomaly. Across all abortions, internationally, more than 95% of people report feeling relief, and when the feeling is other than relief, this is most often due to having experienced harassment by anti-abortion protesters or having to navigate legal restrictions. Difficulty related to anomalies in wanted pregnancies represent an extremely small proportion of all terminated pregnancies, worldwide [13, 14].
Although abortion is conceptualized as being divided into pro-life vs. pro-choice, this may not be an accurate representation of people’s opinions. There may be many factors that influence a decision to have an abortion, some of which may be related to the circumstance under which the pregnancy occurred, personal beliefs, environmental factors and other factors. Various populations with diverse sociodemographic features could obviously have varied attitudes to induced abortion following the detection of a fetal anomaly [12, 15]. Previous research has focused on demographic correlations associated with identification as pro-choice or pro-life. This includes research on gender, race/ethnicity, political views, and religion, in order to better understand patterns of people’s attitudes to abortion. Other studies examined socio-demographic characteristics such as age, education and income and their relationship with abortions. For example, in a study done in Finland, women with basic education had a higher likelihood of abortion than others [16]. Across the UK, abortion rates and experiences differ by region and socio-economic status, reflecting health inequalities [17]. In a study done in the United States, Liliana et al. [18] found that socio-demographic characteristics identified pregnancy intentions in susceptible populations. Women who were more abortion-minded were women with an income level under $10,000 and were younger. Yet, the correlation between the sociodemographic characteristics of people’s attitudes towards abortion was not examined in depth in Israel, in which about 80% of the population is Jewish.

The traditional Jewish view on abortion does not fit conveniently into any of the major "camps" in the current American abortion debate—Judaism neither bans abortion completely nor does it allow indiscriminate abortion [19]. According to the law, abortion and attempted abortion were prohibited in the Criminal Law Ordinance of 1936 (based on British law), on pain of imprisonment. An amendment in 1966 to the above ordinance relieved the mother of criminal responsibility for a self-inflicted abortion, formerly also punishable. An abortion performed in good faith and in order to save the mother’s life, or to prevent her suffering serious physical or mental injury, was not a punishable offense. Terms such as "endangerment of life" and "grievous harm or injury" were given a wide and liberal interpretation, even by the prosecution in considering whether or not to put offenders on trial. Nowadays, induced termination of pregnancy (abortion) of a viable fetus is performed in Israel in accordance with the relevant law, and it requires the consent of the Termination of Pregnancy Committee [20]. To gain a clear understanding of when abortion is sanctioned, or even required, and when it is forbidden, requires an appreciation of certain nuances of halakha (Jewish law), which govern the status of the fetus, but this issue is subtle and complex [19, 21].

Relating to the Jewish religion, on one hand, contemporary Jewish halakhic authorities adopted a strict approach towards the problem of abortion and defined the abortion of a fetus as “tantamount to murder” [22]. On the other hand, other halakhic authorities continued the line of the accepted halakhic position, whereby the killing of a fetus did not constitute homicide if it was certain to be born suffering, and in order to alleviate pain and distress for the child and its parents. In recent years, the question of the permissibility of an abortion has also been raised in cases where there is fear that the child would suffer from a mental or physical defect because of an illness, such as rubeola or measles, contracted by the mother, or due to the aftereffects of drugs, such as thalidomide, taken by her. The general tendency is to uphold the prohibition against abortion in such cases, unless justified in the interests of the mother’s health, which factor has, however, been deemed to extend to profound emotional or mental disturbance [19, 23]. Fertility and birth are still central values in the Israeli society, and there are a variety of opinions and perceptions of the population on this issue that are important for society and the caring medical teams to understand.

Hence, the goal of this study was to examine the relationship between sociodemographic data such as age, nationality, education, economic status and religion, and attitudes to induced abortion following detected fetal anomalies.

2. Hypotheses

H1: A difference will be found between the mean attitude to induced abortion following detected fetal anomalies between Jews and non-Jews, so that Jews will be more opposed to abortions than non-Jews.

H2: A correlation will be found between age and the mean attitude to induced abortion following detected fetal anomalies, so that the older the person is, the more favorable his or her attitude to induced abortion is.

H3: A difference will be found between the mean attitude to induced abortion following detected fetal anomalies between people with different education levels, so that the more educated a person is, the more favorable his or her attitude to induced abortion is.

H4: A correlation will be found between degree of religiosity and attitudes to induced abortion following detected fetal anomalies, so that the less religious a person is, the more favorable his or her attitude to induced abortion is.

H5: A difference will be found between mean attitudes to induced abortion following detected fetal anomalies between people with different income levels, so that people with a higher-than-average income will have a more favorable attitude to abortions than people with lower-than-average incomes.

3. Methods

The research was approved by the Ruppin Academic Center ethics committee. The aim of the study was explained to the participants, and they were assured of anonymity. Each participant signed an informed consent form to participate in the study. A questionnaire composed for the research
purposes, and which related to induced abortion following anomalies detected in the fetus, was distributed to 161 participants from the general population aged 18–65 using a virtual snowball method. Initially, ten subjects were recruited from among colleagues at the college—five who defined themselves as religious, and five who defined themselves as non-religious—to serve as a pilot group. These respondents were then asked to recruit other participants, eventually forming the snowball sample. The data for this study were collected online using Qualtrics Survey Software, and filling out the questionnaire took about 10 minutes. The questionnaire consisted of two parts, and included 35 items, the first part included 15 sociodemographic characteristics data (such as age, nationality, education, economic status and religion, history of genetic diseases, etc.) and the second part included 20-item scale that was developed to assess abortion attitudes and perception regarding induced abortion following detected fetal anomaly, as construed on a pro-life to pro-choice continuum. The item content reflected the degree to which respondents believed induced abortion following detected fetal anomaly was acceptable. Responses to the items on a five-point Likert scale ranged from 1—“completely disagree” to 5—“completely agree”. Reliability analyses indicated high internal consistency among scale items (Cronbach’s alpha 0.897). Sample questions are: “I will terminate the pregnancy when I learn that my fetus may be suffering from muscular dystrophy” or “I will terminate the pregnancy when I learn that my fetus may have a congenital heart defect” or “I will terminate the pregnancy when I am informed that my fetus may be born with a lack of limb”. The range of possible scores was from 20 to 100, with low scores indicative of more conservative, pro-life attitudes toward abortion.

### 4. Data analysis

The data analysis was performed on SPSS version 24 software. The initial analysis included descriptive analysis of the sociodemographic data (means, standard deviations, and frequency distribution). The second stage examined the research hypotheses using various statistical analyses according to the demographic variable (t-tests for independent variables, Pearson correlations, and ANOVA) and the mean attitude to induced abortion following anomalies detected in the fetus.

### 5. Results

The research population included 161 respondents; their average age was 33.1. 51.6% of the respondents had children. 91.9% of the respondents did not have anyone in their nuclear family who had suffered from a genetic disease. The distribution of the sample participants by sociodemographic variables is presented in Table 1.

Almost half of the research population was in general supportive of abortion, whereas the others were either opposed or neutral. Results are presented in Fig. 1.

A t-test for independent samples was conducted to examine the hypothesis that a difference would be found between the mean attitude to induced abortion following detected fetal anomalies between Jews and non-Jews. A significant difference was not found (see Table 2; $p > 0.05$). Hence, hypothesis H1 was not supported.

To examine the correlation between age and the mean attitude to induced abortion following anomalies detected in the fetus, a Pearson test was conducted. A weak positive relationship ($r = 0.19; p < 0.05$) was found, so that the older the respondent was—the more favorable he or her attitude to induced abortion following detected fetal anomalies was.

### Table 1. Distribution of participants by sociodemographic variables (N = 161).

<table>
<thead>
<tr>
<th>Sociodemographic variable</th>
<th>Categories</th>
<th>Number of respondents</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital status</td>
<td>Single</td>
<td>64</td>
<td>58.4</td>
</tr>
<tr>
<td></td>
<td>Married</td>
<td>90</td>
<td>39.8</td>
</tr>
<tr>
<td>Religion</td>
<td>Jewish</td>
<td>142</td>
<td>88.2</td>
</tr>
<tr>
<td></td>
<td>Other (Muslim, Christian, Druze)</td>
<td>19</td>
<td>11.8</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Sephardic (Arab, mixed)</td>
<td>74</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>Ashkenazi</td>
<td>87</td>
<td>54</td>
</tr>
<tr>
<td>Residence</td>
<td>Rural</td>
<td>57</td>
<td>35.4</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>104</td>
<td>64.6</td>
</tr>
<tr>
<td>Religiosity</td>
<td>Orthodox</td>
<td>2</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td>Religious</td>
<td>5</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td>Traditional</td>
<td>38</td>
<td>23.6</td>
</tr>
<tr>
<td></td>
<td>Secular</td>
<td>96</td>
<td>59.6</td>
</tr>
<tr>
<td></td>
<td>Atheist</td>
<td>18</td>
<td>11.2</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>2</td>
<td>1.2</td>
</tr>
<tr>
<td>Average income</td>
<td>10,000 NIS and above</td>
<td>64</td>
<td>39.8</td>
</tr>
<tr>
<td></td>
<td>Below 10,000 NIS</td>
<td>97</td>
<td>60.2</td>
</tr>
<tr>
<td>Education</td>
<td>Tertiary</td>
<td>24</td>
<td>14.9</td>
</tr>
<tr>
<td></td>
<td>Academic</td>
<td>113</td>
<td>70.2</td>
</tr>
</tbody>
</table>
Fig. 1. The figure represents an answer to the question regarding general attitudes to abortion: “Please rate in general whether you are in favor, opposed or neutral regarding initiated abortions” (1-opposed, 2-neutral, 3-in favor).

Table 2. Means and standard deviation of attitudes to induced abortion following detection of fetal defects by ethnicity.

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other</td>
<td>2.7</td>
<td>0.9</td>
</tr>
<tr>
<td>Jewish</td>
<td>2.9</td>
<td>0.8</td>
</tr>
</tbody>
</table>

To examine the hypothesis that a difference would be found between the mean attitude to induced abortion following detected fetal anomalies between people with different education levels, an ANOVA test was conducted. No difference in abortion attitudes was found between participants with various levels of education (high school/tertiary/academic) at a 5% significance level, contrary to H3 ($p > 0.05$).

A Pearson test was conducted to examine the correlation between degrees of religiosity and the mean attitude to induced abortion following detected fetal anomalies. Assuming that the six religiosity categories in Table 1 are equally spaced, a positive correlation ($r = 0.44, p = 0.01$) was found; namely, the less religious a person is, the more favorable his or her attitude to induced abortion is. Hypothesis H4 was corroborated.

To examine the hypothesis that differences would be found between mean attitudes to induced abortion following anomalies detected in the fetus between people with different income levels—10,000 NIS and above, or below 10,000 NIS—a t-test for independent samples was performed. Hypothesis H5 was supported ($t(159) = 2.72; p < 0.05$), and it can be said that people with a higher income have a more favorable attitude to induced abortions than people with lower incomes do. Table 3 presents the means and standard deviations of the attitude to induced abortion following detected fetal anomalies by income.

6. Discussion

This study investigated the public attitude to voluntary induced abortion following anomalies detected in the fetus. Theoretical understanding of influences on abortion attitudes following detected fetal anomalies may assist researchers in determining contributors of the attribution. Sociodemographic variables such as age, income, education, degree of religiosity, etc., were examined as linked and/or affecting the attitude to induced abortion. Very few studies have examined this issue, and the importance of the general assessment is to define the scope of the phenomenon in Israeli society, and to deduce public attitudes to abortions in general [24].

The main findings indicated that there is a correlation between one’s degree of religiosity and support of induced abortion following anomalies detected in the fetus, so that the more religious one is, the more negative his or her attitude to abortion is. The abortion laws in Israel are very strict, subject to halakhic (religious-Jewish) laws. According to the 1977 Penal Code and the 1978 Penal Statute (Termination of Pregnancy), termination of pregnancy is allowed only if one of the following conditions exists: the woman is younger than marriage age [17]; the woman is over 40; the pregnancy is the result of a forbidden relationship or incest or not within marriage; continuing the pregnancy could endanger the woman’s life or cause her physical harm; continuing the pregnancy could cause the woman mental harm; the newborn could have a physical or mental defect [25]. Siegal [26] argued that any other option that is not life threatening, for instance, if the fetus threatens the woman’s health but not her life, or if it endangers one of her organs, is not sufficient cause for abortion. Some contradictory opinions in Israel claim that with the present medical and technological developments, the fetus’ health status can be evaluated, which raises the question if and when pregnancy should be terminated. This could be explained by the religious leadership in Israel, which typically elects to toe the line of the strictest attitudes that forbid abortion even if anomalies are detected in the fetus, so that if the child is not healthy or could be born...
that way, according to the halakha, as long as the mother's life is not in danger, she has no right to abort [22, 26]. While personal religious beliefs are often seen as having a significant role in shaping attitudes, economic development and political stability are also seen to be important predictors of attitudes about sexual morality and gender equality [27, 28].

We found that economic status was related to attitudes to induced abortion, so that the higher one's income is, the more favorable one's attitude is to abortion. This finding is in line with previous work that found more favorable attitudes to abortion among academic women whose income was above average [29, 30]. On the other hand, Rosenberg-Freidman [31] claimed in her book that low economic status actually produces more favorable attitude to abortion.

A relationship was also found between age and the mean attitudes to induced abortion following detection of fetal anomaly, so that the older one is, the more favorable one's attitude is. It could be that younger people believe they have the ability to cope with a disabled child, whereas older people see the difficulty of this. Also, younger people may rely on their parents for help in their everyday coping with a sick child, whereas older people may feel they would have to cope on their own [23, 32].

No differences were found between either level of education or nationality (Jews and non-Jews) and the mean attitudes to induced abortion following detection of fetal anomalies, and both these hypotheses were refuted. It may be that no difference between Jews and non-Jews was found because of the size of the sample, which included mostly respondents from the Jewish population. It is known that among Jews, religious involvement appears to have a greater effect on attitudes about abortion. Abortion is a challenging subject for every religion. Jewish people believe in the sanctity of life, but accept they must balance individual circumstances with God's command to populate the Earth. However, within Judaism, views may differ. Abortion is acceptable for some Jews, in some circumstances. In Orthodox Judaism, abortion is only permitted for serious reasons, e.g., the mother's life being in danger. The decision must be taken after consultation with a Rabbi, who would give advice on the subject. Many Reform Jews neither oppose abortion completely nor accept abortion 'on demand'. They would accept abortion if the pregnancy was the result of rape or incest, or the child would be born severely disabled. Among Jews, too, there may be differences in attitudes due to the diversity within this group [33]. Studies suggested that Muslim affiliates appear to have more disapproving attitudes of abortion than Catholic, Christian Orthodox, Jewish, and Buddhist affiliates, people coded as having another religion, and people who did not claim a religion [27, 28]. There may be similarities between Islam and Judaism, as these religions expect every case to be considered on its own merits, but in Judaism, a decision can be taken after consultation with a rabbi competent to give advice on such matters.

The hypothesis concerning level of education and attitude to abortion was not supported, possibly because of the population variance in this variable; namely, fertility is a core value of Israeli society in general, so this measure may not be representative. Also, about 70% of the sample had an academic education, and this fact may also have some bearing on the findings.

In Israel today, a person or a couple who find themselves in the situation of wanting to undergo an abortion, and do not meet the strict legal criteria, must cope with a very difficult mental situation. The awareness of the medical staff must be raised, so they can provide the support required in such situations, which have an enormous effect on the parents' subsequent quality of life.

The issue of abortions is in direct correlation with performing genetic testing and detecting fetal anomalies [3]. Some populations do not perform genetic testing, and even if they do, they choose not to terminate the pregnancy because of religious considerations. We believe that the community nurse should be able to identify these populations, provide them with maximum information on the importance of these tests and about various birth anomalies, and naturally explain the implications of these diseases on the entire family's future quality of life.

Having found that certain groups of sociodemographic characteristics supported induced abortions following the detection of fetal anomalies, we argue that it is extremely important to first inform professionals concerning this very delicate issue, so that they know the various sociodemographic groups, and how each group copes with the issue [34].

7. Limitations

The sample of this study was small and the subjects’ responses were based on subjective reporting, so it is possible that it did not represent the general adult population in Israel, and that the results would be different if there was a larger group of subjects. The study was theoretical, and could not provide information on what the participants would actually do in a real-life situation. Furthermore, the questionnaire was composed of closed questions with a limited number of possible answers, which could have biased the responses.

8. Conclusions

The findings suggest a correlation between the degree of religiosity and attitudes towards abortion following anomalies detected in the fetus, so that the more religious one is, the more negative his or her attitude to abortion is. Religion and abortion are closely connected in social and religious discourse in Israel. More in-depth, research should be performed to help professionals and medical teams, and provide them with the appropriate tools in order to better understand and cope with induced abortions. Also, in light of the literature on induced abortions and the present study, there is a need to conduct additional wider research to investigate the issue of induced abortions following the detection of fetal anomalies. Professionals should be given various ways to deal
with this issue such as approaching the patient, increasing awareness of fetal anomalies and their implications, opening support centers for couples, women, transgender men and nonbinary people, and increasing awareness of the sensitivity and difficulty of making these painful decisions. Although causal relationships were not directly explored, theoretical explanations and support provide for a thorough understanding of potential factors of abortion attitude following anomalies detected in the fetus, and future implications should be discussed. One important direction for future research would be to investigate how the larger cultural context shapes behaviors such as attitudes towards abortion following the detection of fetal anomalies.

Author contributions
KG contributed to the design and implementation of the research, to the analysis of the results and to the writing of the manuscript. KG have read and approved the final manuscript.

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Conflict of interest
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