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Level of Knowledge of Mothers on the Effects of Teratogens: A Basis for Pre-Natal Health Information Program

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Abstract

The setting will affect the child in several well-documented ways. There are a lot of babies that are born defective as a result of events before and during the course of their pregnancy, and such circumstances are classified as teratogens. Teratogens are environmental agents that will disturb conventional fetal development once the mother is exposed to them, leading to prenatal maldevelopment or death. This study contributed to developing targeted educational initiatives that provide accurate information on the risks and consequences associated with teratogenic exposure during pregnancy. This study used a descriptive survey design as a method of research. A descriptive design is a type of quantitative research. The main source of data for this study was the pregnant mothers who were having their pre-natal consultation, which includes all primigravida, multigravida, first-trimester, second-trimester, and third-trimester patients of Gov. Faustino N. Dy Sr. Memorial Hospital. The study excludes those who are not patients of the said institution and are unwilling to participate in the survey. The research findings highlight the need for a comprehensive health education program to address knowledge gaps and improve awareness among pregnant women. It is crucial to develop targeted educational initiatives that provide accurate information on the risks and consequences associated with teratogenic exposure during pregnancy. Collaborating with healthcare professionals and integrating teratogenic risk assessment and counseling into routine prenatal care can further enhance knowledge dissemination and informed decision-making.

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1. Introduction

Nothing will cause a mother more worry than the prospect of her unborn child having a health defect. Undeniably, there are some external and internal influences that can seriously affect the health of an unborn child. The unborn child, though it appears to live in a protected, confined environment, isn't wholly protected from the larger world encompassing the mother (Romanis, 2022). The setting will have an effect on the child in several well-documented ways. There are a lot of babies that are born defective as a result of events before and during the course of their pregnancy, and such circumstances are classified as teratogens (Finnell et al., 2021).

Teratogens are environmental agents that will disturb conventional fetal development once the mother is exposed to them, leading to prenatal maldevelopment or death (Kaleelullah & Garugula, 2021). Previously, it was believed that noninheritable anomalies were solely genetic until Murphy discovered that environmental agents may cause congenital defects (Tawfik & Dutton, 2022). Recently, it's identified that a majority of congenital anomalies have a complex pathogenesis, implicating each genetic and environmental basis. It is estimated that just about 15% of all congenital malformations are because of environmental teratogens that embody metabolic conditions and physical, chemical, and infectious agents (Cerrizuela et al., 2020). As most of those are often thought of as modifiable exposures, increasing awareness relating to agent risks among women is crucial, as it will scale back the prevalence of noninheritable defects (Hossain et al., 2022). A number of the comorbidities that create a teratogenic risk embody the physiological condition like diabetes mellitus, which is related to a higher risk of congenital malformations, thyroid-related diseases and its medications, and medications used for the treatment of neurologic and psychiatric disorders (Biondi et al., 2019).

Prenatal care is extremely important for the healthcare provided to a woman throughout her pregnancy (Wilson et al., 2021). It consists of a series of clinical visits and auxiliary services designed to manifest the health and well-being of the mother, fetus, and family as a whole. Its major parts embrace early and continued risk assessment, health promotion, and medical and psychosocial interventions and follow-up. Risk assessment includes a comprehensive analysis of the woman's or couple's reproductive history, medical risks, medication use, case history, genetic risks, psychosocial factors, biological processes, behavioral risks, and laboratory testing. Pre-natal consultations include assessing early signs and symptoms of complications during pregnancy, providing lifestyle advice, promoting healthy nutrition, reducing environmental exposures, breastfeeding, birth, and family planning (Ertmann et al., 2023).

Medical and psychosocial interventions address known medical and psychosocial risks. Ideally, prenatal care should begin before the physiological state (preconception care) and continue when (postpartum care) and between pregnancies (antenatal care), as a part of a long-term and contextually integrated strategy to manifest optimum development of women's reproductive health, not solely throughout her pregnancy but over the life course (Joseph et al., 2022).

Somehow, healthcare providers who give obstetrical care might not discuss everything with pregnant women concerning all the dangers throughout their pregnancy (Altman et al., 2020). The healthcare providers don't conjointly do a complete health history assessment of pregnant women during prenatal check-ups, which might be an important basis for knowing the attainable risk during her pregnancy (Gómez et al., 2019). History-taking identifies different health risk such as unhealthy lifestyle, smoking, drinking alcohol, exposure to infectious agents/diseases, and the presence of comorbidities and practices of self-medication without the advice of healthcare professionals that poses a risk of exposure to teratogenic agents (Niriayo et al., 2021).

A good relationship with health professionals is essential to promote a healthy pregnancy and birth. Obtaining early and regular prenatal care improves the probability of a healthy pregnancy. This care will begin even before pregnancy with a pre-pregnancy visit to a healthcare provider (Krukowski et al., 2022). Moreover, there is a need to advocate for the welfare of mothers and child, which aims to impart adequate health teaching to women to make sure that they gain enough knowledge on teratogens. Advising women regarding teratogens early in pregnancy may forestall knowledge in preventing unreasonable exposure that may lead to possible teratogenic-related complications (De Groot et al., 2022).

The researchers are propelled to conduct this study with the primary aim of assessing the level of knowledge of mothers on different teratogenic agents in which the results will be used as a basis for crafting and designing a health information drive or program.

2. Method

This study used a descriptive survey design as a method of research. A descriptive design is a type of quantitative research. The main source of data for this study was the pregnant mothers who were having their pre-natal consultation, which includes all primigravida, multigravida, first-trimester, second-trimester, and third-trimester patients of Gov. Faustino N. Dy Sr. Memorial Hospital. The study excludes those who are not patients of the said institution and are unwilling to participate in the survey (Sellars et al., 2021).

After gaining a reliable score of Cronbach alpha and Scale – Content Validity index, which is above 0.7, which preluded the distribution of the questionnaire, both descriptive and inferential statistics were used to treat the data for this study.

3. Results and Discussion

The results indicate that the knowledge of the respondents on the effects of teratogens along metabolic or hormonal agents is independent of their age, civil status, educational attainment, religion, no. of pregnancy, occupation, no. of deliveries, no. of full-term deliveries, no. of living children, abortion, and, no. of pre-term deliveries (Table 1).

Hence, the age, civil status, educational attainment, religion, no. of pregnancy, occupation, no. of deliveries, no. of full-term deliveries, no. of living children, abortion, and no. of pre-term deliveries are variables that did not influence the knowledge of the respondents on the effects of teratogens along metabolic or hormonal agents (Ahmad & Yahya, 2020).

In practical terms, this suggests that these profile variables do not appear to influence or predict respondents' knowledge about teratogens and metabolic or hormonal agents, highlighting the independence of knowledge from these demographic factors. This information can be valuable for designing targeted educational interventions or public health programs in this domain (Fogolin et al., 2022).

Table 1. Significant Relationship on the Knowledge of the Respondents on the Effects of Metabolic or Hormonal Agents and Their Profile

Profile	Probability	Decision	Remarks
Age	.988	Ho is Accepted	There is no significant Relationship
Civil Status	.971	Ho is Accepted	There is no significant Relationship
Educational Attainment	.860	Ho is Accepted	There is no significant Relationship
Religion	.971	Ho is Accepted	There is no significant Relationship
No. of Pregnancy	.995	Ho is Accepted	There is no significant Relationship
Occupation	.886	Ho is Accepted	There is no significant Relationship
No. of deliveries	.956	Ho is Accepted	There is no significant Relationship
No. of full-term deliveries	.999	Ho is Accepted	There is no significant Relationship
No. of Living Children	.984	Ho is Accepted	There is no significant Relationship
Abortion	.807	Ho is Accepted	There is no significant Relationship
No. of Pre-term Deliveries	.955	Ho is Accepted	There is no significant Relationship

Table 2. Significant Relationship on the Knowledge of the Respondents on the Effects of Infectious Agents and Their Profile

Profile	Probability	Decision	Remark
Age	.984	Ho is Accepted	There is no significant Relationship
Civil Status	.999	Ho is Accepted	There is no significant Relationship
Educational Attainment	.938	Ho is Accepted	There is no significant Relationship
Religion	.682	Ho is Accepted	There is no significant Relationship
No. of Pregnancy	.862	Ho is Accepted	There is no significant Relationship
Occupation	.983	Ho is Accepted	There is no significant Relationship
No. of deliveries	.805	Ho is Accepted	There is no significant Relationship
No. of full-term deliveries	.950	Ho is Accepted	There is no significant Relationship
No. of Living Children	.642	Ho is Accepted	There is no significant Relationship
Abortion	.179	Ho is Accepted	There is no significant Relationship
No. of Pre-term Deliveries	.153	Ho is Accepted	There is no significant Relationship

The results indicate that the knowledge of the respondents on the effects of teratogens along infectious agents is independent of their age, civil status, educational attainment, religion, no. of pregnancy, occupation, no. of deliveries, no. of full-term deliveries, no. of living children, abortion, and, no. of pre-term deliveries (Table 2).

Hence, the age, civil status, educational attainment, religion, no. of pregnancy, occupation, no. of deliveries, no. of full-term deliveries, no. of living children, abortion, and no. of pre-term deliveries are variables that did not influence the knowledge of the respondents on the effects of teratogens along infectious agents (Wang & Fang, 2020).

In essence, these demographic variables do not appear to play a significant role in shaping respondents' knowledge of teratogenic effects associated with infectious agents. This information can guide the development of targeted educational initiatives or public health strategies in this context (Jones et al., 2019).

Table 3. Significant Relationship on the Knowledge of the Respondents on the Physical/Chemical Agents and Their Profile

Profile	Probability	Decision	Remark
Age	.998	Ho is Accepted	There is no significant Relationship
Civil Status	.989	Ho is Accepted	There is no significant Relationship
Educational Attainment	.979	Ho is Accepted	There is no significant Relationship
Religion	.904	Ho is Accepted	There is no significant Relationship
No. of Pregnancy	.960	Ho is Accepted	There is no significant Relationship
Occupation	.840	Ho is Accepted	There is no significant Relationship
No. of deliveries	.946	Ho is Accepted	There is no significant Relationship
No. of full-term deliveries	.989	Ho is Accepted	There is no significant Relationship
No. of Living Children	.875	Ho is Accepted	There is no significant Relationship
Abortion	.511	Ho is Accepted	There is no significant Relationship
No. of Pre-term Deliveries	.458	Ho is Accepted	There is no significant Relationship

The results indicate that the knowledge of the respondents on the effects of teratogens along physical/chemical agents is independent of their age, civil status, educational attainment, religion, no. of

pregnancy, occupation, no. of deliveries, no. of full-term deliveries, no. of living children, abortion, and, no. of pre-term deliveries (Table 3).

Hence, the age, civil status, educational attainment, religion, no. of pregnancy, occupation, no. of deliveries, no. of full-term deliveries, no. of living children, abortion, and no. of pre-term deliveries are variables that did not influence the knowledge of the respondents on the effects of teratogens along physical/chemical agents.

4. Conclusions

In light of the aforementioned findings, the following conclusions were drawn. It was noted that the (3) dimensions, such as metabolic, hormonal, and physical, revealed that they had not met the highest rate, which is very knowledgeable. Hence, this may indicate a lack of information and a further intervention such as a health information campaign. It is not taken that the knowledge of the respondents on the effects of teratogenic agents varied across different profiles, such as age, civil status, educational attainment, religion, number of pregnancies, occupation, number of deliveries, number of full-term deliveries, number of living children, abortion, and number of pre-term deliveries. This may imply that their profile has no direct association.

5. Recommendations

In relation to the foregoing conclusions, the following recommendations were drawn and may be considered for implementation;

1. **Pregnant Mother:** Mothers with higher levels of education may have a better understanding of teratogens and their potential effects on fetal development. They may have access to more information and resources, including healthcare professionals who can provide guidance. In contrast, mothers who are slightly knowledgeable may consider updating or seeking vital information in a reliable and trusted source of information such as DOH websites and other health-related platforms.
2. **Department of Health.** The proponents may suggest that the Department of Health consider implementing educational initiatives and programs that will provide comprehensive information on the potential risks and consequences associated with teratogenic exposure during pregnancy. These programs should focus on improving knowledge and awareness among pregnant women and healthcare professionals.
3. **College of Nursing:** The ISU-College of Nursing may consider identifying other specific areas or variables, such as the effects of specific teratogenic agents, and design targeted educational materials and interventions to address these gaps.
4. **Collaboration with Healthcare Professionals**: Proponents suggest collaboration with other healthcare professionals, including obstetricians, gynecologists, and general practitioners, to integrate teratogenic risk assessment and counseling into routine prenatal care. This may help ensure that pregnant women receive accurate information and guidance regarding the potential risks of medication use and exposure to teratogenic agents.
5. **Provincial Health Office:** The said government agency may consider empowering individuals to make informed decisions. Promote shared decision-making between healthcare professionals and pregnant women, empowering them to make informed choices about medication use and exposure to teratogenic agents. They may consider providing resources, such as decision aids and informational materials that present the risks and benefits of different treatment options during pregnancy.
6. **Future researchers:** The proponents encourage further research in the field of teratology to update knowledge and understanding of teratogenic effects continuously. This research should focus on both the short-term and long-term effects of teratogenic exposures, including the development of new teratogenic agents and emerging risks. By implementing these suggested recommendations, it is possible to enhance knowledge and awareness, improve decision-making, and ultimately promote the health and well-being of pregnant women and their unborn children.

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