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The level of awareness among pregnant women in the city of Derna regarding the risks of "methylmercury" in canned tuna and its direct impact on embryo nervous system development

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Keywords
Pregnant woman; Methyl mercury; Derna; Canned tuna; Embryos.

Abstract

This descriptive cross-sectional study aimed to assess the level of awareness among pregnant women in the city of Derna, Libya, regarding the risks of methylmercury in canned tuna, and their understanding of its direct impact on the fetal nervous system, and their knowledge regarding safe types of canned tuna and the recommended weekly consumption limits. Total mercury levels were analyzed in the laboratory for three brands of commercially available "Skipjack" canned tuna to compare them with the safe consumption limits established by (FDA) and (FAO) for pregnant women. A research questionnaire was developed as the primary data collection tool and was distributed in two complementary formats printed and electronic. This study had a sample of 166 participants, the results showed an 82% of the pregnant women in the sample had a higher education, 58% of them were not aware that tuna contains methylmercury, 59% were not aware of its harmful effects on embryonic neurodevelopment, 82% were not aware of safe weekly consumption limits. 40% of pregnant women regularly eat tuna more than two times per week, 75.3% are ignorant about methylmercury contenting other types of canned tuna. Although laboratory analysis of three brands of canned "Skipjack" produced encouraging results confirming that they are safe for pregnant women to consume within recommended weekly. This study strongly recommends adopting the "strategic educational proposal "It was put forward in this research. outlined herein and integrating it into primary healthcare programs throughout the city to bridge this critical knowledge gap.

مستوى الوعي لدى النساء الحوامل في مدينة درنة بشأن مخاطر "ميثيل الزئبق" الموجود في التونة المعلبة وتأثيره المباشر على نمو الجهاز العصبي للجنين

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الكلمات المفتاحية
المرأة الحامل؛ ميثيل الزئبق؛ درنة؛ التونة المعلبة؛ الاجنة

الملخص

هدفت هذه الدراسة الوصفية المقطعية إلى تقييم مستوى الوعي لدى النساء الحوامل في مدينة درنة، ليبيا، بشأن مخاطر ميثيل الزئبق الموجود في التونة المعلبة، ومدى فهمهن لتأثيره المباشر على الجهاز العصبي للجنين، ومعرفتهن بأنواع التونة المعلبة الآمنة والحدود الموصى بها للاستهلاك الأسبوعي. تم تحليل مستويات الزئبق الكلي في ثلاث علامات تجارية متوفرة تجارياً من تونة "السكيب جاك" (Skipjack)مخبرياً لمقارنتها بحدود المعلبة، وذلك لمقارنتها بحدود الآمن التي حددتها إدارة الغذاء والدواء (FDAالاستهلاك الأسبوعي) ومنظمة الأغذية والزراعة(FAO)) للنساء الحوامل. أُعدت استبانة بحثية لتكون الأداة الرئيسية لجمع البيانات، ووُزعت بصيغتين متكاملتين: المطبوعة والإلكترونية. شملت الدراسة عينة مكونة من 166 مشاركة؛ وأظهرت النتائج أن 82% من النساء الحوامل في العينة حاصلات على تعليم عالٍ، إلا أن 58% منهن لم يكنّ على دراية بأن التونة تحتوي على ميثيل الزئبق، و59% لم يكنّ على علم بآثاره الضارة على النمو العصبي للجنين، و82% لم يكنّ على دراية بحدود الاستهلاك الأسبوعي الآمن. كما تبين أن 40% من النساء الحوامل يتناولن التونة بانتظام بمعدل يزيد عن مرتين أسبوعياً، وأن 75.3% يفتقرن إلى المعرفة بشأن احتواء أنواع أخرى من التونة المعلبة على ميثيل الزئبق. ورغم أن التحليل المخبري لثلاث علامات تجارية من تونة "السكيب جاك" المعلبة أظهر نتائج مشجعة تؤكد سلامة استهلاكها من قبل النساء الحوامل ضمن الحدود الأسبوعية الموصى بها، فإن الدراسة توصي بشدة بتبني "المقترح التعليمي الاستراتيجي" الذي طُرح في هذا البحث ودمجه في برامج الرعاية الصحية الأولية في جميع أنحاء المدينة لسد هذه الفجوة المعرفية الحرجة.

1. INTRODUCTION

The canned tuna Due to its price, flavor, convenience, and health advantages, it is regarded as a significant part of the global diet (Rock et al., 2025). Fish in general is an important part of a healthy diet in modern society, and is a major source of healthy long-chain omega-3 fatty acids (3FAs), mainly (EPA) and (DHA) (Chen & Dong, 2020). Eating tuna can have adverse effects on health despite its great nutritional value. Fresh and canned fish samples from all over the world have been discovered to contain low to **extremely** high quantities of methylmercury(CH_3Hg^+), exceeding the recommended limits (Kumar, 2018). Research has shown connections between daily regular eating of canned tuna, elevated exposure to methylmercury, and negative consequences, particularly for embryos (Rock.et al., 2025). The formation of the central nervous system is one of the most critical developmental processes occurring between the third and eighth weeks of pregnancy; consequently, any disruption to these intricate processes during early embryonic stages can result in profound, lasting effects on brain shape and size (Rice and Baron, 2000).Research has shown connections between daily regular eating of canned tuna, elevated exposure to “methyl mercury”, and negative consequences, particularly for embryos (Rock et al., 2025).Methylmercury can readily cross the placental barrier via neutral amino acid transporters through molecular mimicry and accumulate in fetal blood at levels that may exceed those found in maternal blood. Methylmercury crosses the blood-brain barrier (BBB) using this same mechanism of molecular mimicry (Oken & Bellinger. 2008). The toxicity of methylmercury affecting the fetal brain manifests through the disruption of proper neuronal cytoskeleton formation, leading to the failure or aberration of neuronal migration and differentiation. This structural defect in the developing brain results in permanent damage that subsequently manifests as behavioral, cognitive, and motor disorders (Bjørklund et al., 2022). Stricter regulation of the canned tuna sector is required to protect vulnerable populations, including children, pregnant women, and babies (Goldman &Wiley, 2022).

According to the latest recommendations from (FDA) and (EPA) pregnant women should consume two servings per week of a variety of fish fresh or canned (cooked) while selecting species less prone to accumulating "methylmercury" in their tissues (FDA. 2022). A single session is equivalent to equivalent to one to one-and-a-half standard cans of tuna available on the market; these cans typically weigh between (160-185) grams before draining, yielding between (120-130) grams of drained fish meat. (JECFA) has established a (PTWI) for methylmercury of 1.6 µg/kg. of body weight per week.

Canned skipjack tuna, often known as light canned tuna, is one of the finest options for expectant mothers, because it contains a lower percentage of methylmercury (EFSA, Bearth et al., 2012). The research problem stems from a lack of knowledge and preventive awareness among pregnant women in the city of Derna regarding the risks of methylmercury associated with excessive consumption of canned tuna. This includes a lack of familiarity with the varieties available on the market and ignorance of the recommended safe weekly consumption limits for pregnant women. Furthermore, the absence of local statistical data to assess the scale of this phenomenon hinders the development of effective local awareness strategies aimed at protecting fetuses from future neurological and behavioral disorders, Therefore, the objectives of the study were: (i) Assessing the level of awareness and knowledge among pregnant women in the city of Derna regarding the risks of excessive canned tuna consumption and methylmercury exposure; and (ii) Conducting laboratory analysis of total mercury levels in three brands of "skipjack" canned tuna available in the local market (Conatuna/Costadorora/Wadi Al-Kouf), and comparing the results against safety thresholds established by global health authorities and organizations for pregnant women; and (iii) Developing a proposed awareness strategy and recommendations targeting pregnant women and medical personnel in Derna, aimed at promoting safe nutrition practices and protecting fetuses from potential future neurological or behavioral disorders.

2. MATERIALS AND METHODS

Design of the Study: This study adopted a descriptive research design, aiming to accurately monitor and describe the current levels of awareness among the target population. A research questionnaire was developed as the primary data collection tool and was distributed in two complementary formats printed (via face-to-face interviews) and electronic (to ensure a wider reach). The questionnaire was structured into three main sections: 1-Demographic data (age, educational level, and current stage of pregnancy), 2-Consumption patterns of canned tuna (frequency, favorite type, consumed quantity), 3-Knowledge and awareness: Specific questions relating to the toxicity of methylmercury and its effects on embryonic neurodevelopment. The study population consisted of pregnant women residing in the city of Derna. The study sample was selected using a simple random sampling method from the target population. The study was conducted in the city of Derna, Libya, and data collection relied on field visits to the "Mahmoud Al-Huraish Group Clinics" in Derna. To ensure the required sample size was achieved, the questionnaire was distributed via social media platforms relevant to the study's target demographic. Following the data collection phase, the data were processed and analyzed using Microsoft Excel. Descriptive statistics specifically the calculation of frequencies and percentages were employed to present the results accurately.

3. RESULTS

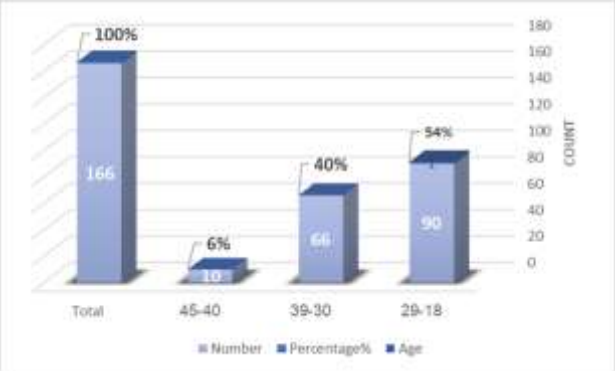
This study was conducted over two consecutive months (March and April 2026), with a sample of 166 participants. Their opinions were surveyed through two parts: 102 participants responded electronically, while 64 responded in person using paper forms. The study results are presented below, showing the frequencies and percentages for each question:

(1)-Study Questionnaire Results

I-the demographic variables:

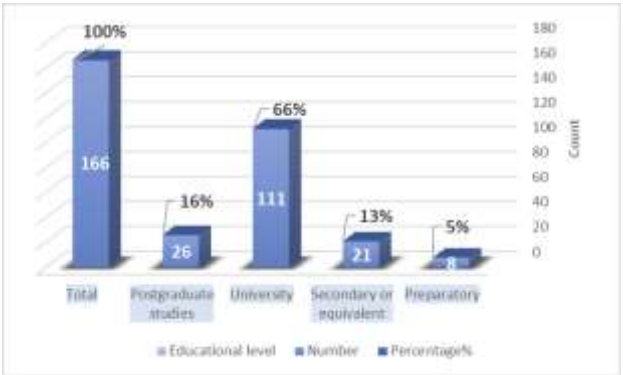
In figure1 shows distribution of the study sample according to the age variable, where it is clear that the age group from (18-29) years came in first place with a number of (90) individuals and a percentage of (54%) of the total sample, followed by the age group from (30-39) years with a number of (66) individuals and a percentage of (40%), the age group from (40-45) years came in last place with a number of (10) individuals and a percentage of (6%).

Figure1: Relative distribution of the study sample according to the age variable.



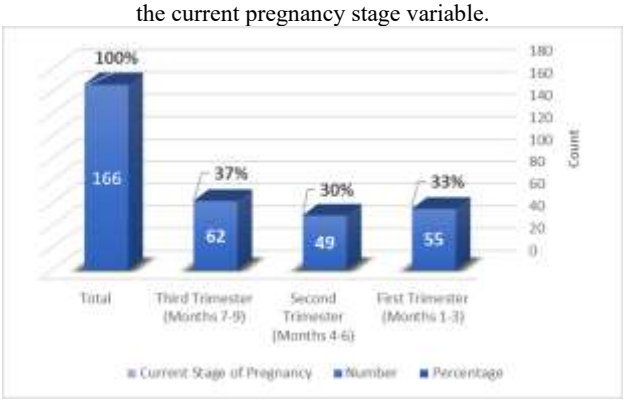
In figure2 shows the distribution of the study sample according to the educational level variable. It was found that the most frequent category in this study was the "university" category, with (111) individuals, representing (66%), followed by the postgraduate category with (26) individuals, representing (16%), while the secondary or equivalent category came in with (21) individuals, representing (13%), and finally the preparatory category, with (8) individuals, representing (5%).

Figure2: Relative distribution of the study sample according to the educational level variable.



. In figure3 shows the distribution of the study sample according to the variable of the current stage of pregnancy, where it is clear that most of the pregnant women participating are in the third trimester of pregnancy, with a number of (62) and a percentage of (37%), of the total sample, followed by pregnant women in the second trimester of pregnancy, with a number of (49) and a percentage of (30%), while pregnant women in the first trimester of the last pregnancy came with a number of (55) and a percentage of (33%).

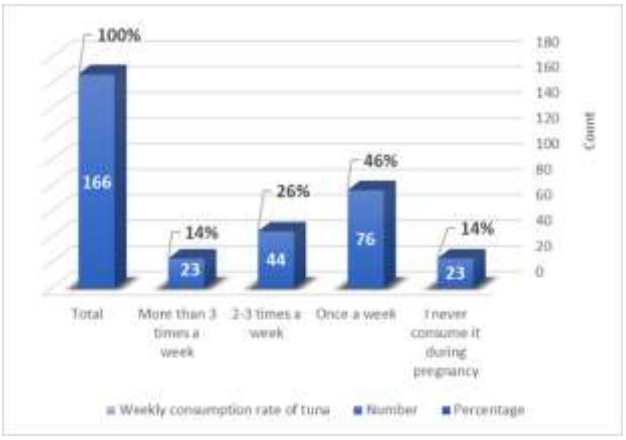
Figure3: Relative distribution of the study sample according to the current pregnancy stage variable.



II- variables of consumer patterns and purchasing preferences for canned tuna.

In figure4 shows the distribution of the study sample according to the amount of canned tuna consumed weekly. It shows that most of the pregnant women in the total sample eat tuna once a week, numbering (76) and percentage (46%), followed by pregnant women who eat canned tuna 2-3 times a week, numbering (44) and percentage (26%), then pregnant women who eat canned tuna more than 3 times during the week, numbering (23) and percentage (14%), as well as those who do not eat canned tuna at all during pregnancy, with the same frequency as (23) and percentage (14%).

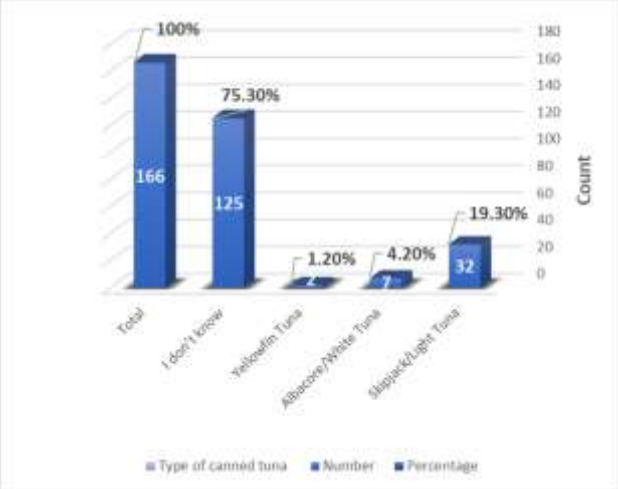
Figure4: Relative distribution of the study sample according to the amount of canned tuna consumed weekly



In figure5 shows the distribution of the study sample according to the preference for the type of canned tuna consumed. We note that the majority of the sample participating in the study do not know the difference between the types when they eat canned tuna, with a

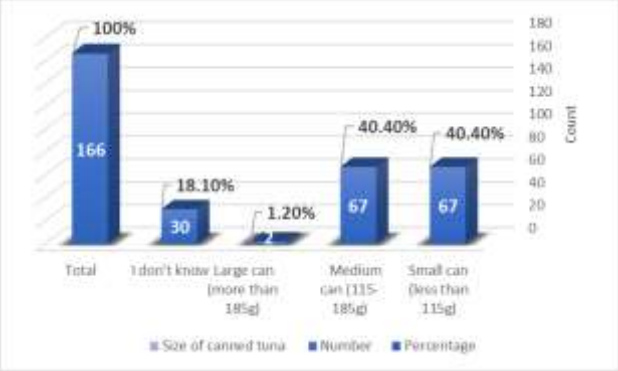
number of (125) and a percentage of (75.3%), while those who eat light Skipjack tuna numbered (32) and a percentage of (19.3%), while those who eat white albacore tuna numbered (7) and a percentage of (4.2%), then those who eat Yellowfin tuna numbered (2) and a percentage of (1.2%).

Figure5: Relative distribution of the study sample according to the type of canned tuna consumed



In figure6 shows the distribution of the study sample according to the preference for the quantity of canned tuna consumed. It was found that most of the pregnant women in the total sample consumed a can of tuna of a small size (less than 115 grams) and a medium size (115-185 grams) with the same number (67) and the same percentage (40.4%), followed by pregnant women who did not know the size of a can of tuna with the number (30) and the percentage (18.1%), then pregnant women who consumed a large can (more than 185 grams) with the number (2) and the percentage (1.2%).

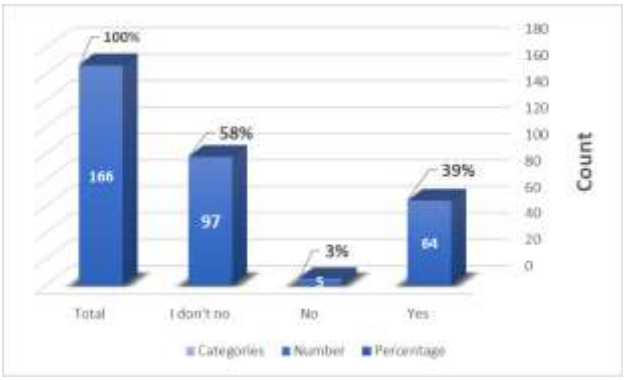
Figure6: Relative distribution of the study sample according to the size of canned tuna consumed.



III-Measuring awareness of the dangers of methylmercury in canned tuna

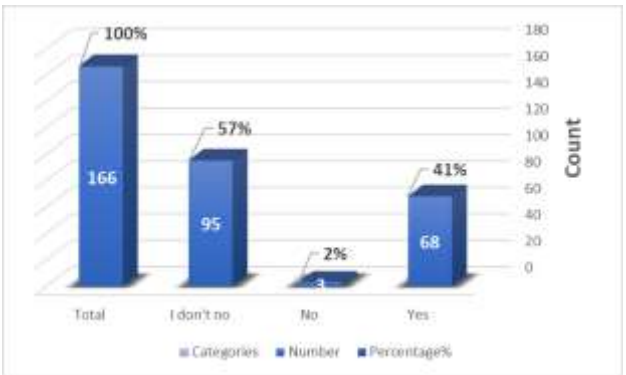
In figure7 shows the distribution of the study sample according to the participants' knowledge of whether canned tuna contains methylmercury. It is clear that most of the pregnant women in the study sample do not know whether canned fish contains organic mercury, with a number of (97) and a percentage of (58%), while the number of those who answered "Yes" was (64) and a percentage of (39%), and then those who answered "No" was (5) and a percentage of (3%).

Figure7: Relative distribution of the study sample according to the awareness of "methylmercury" in canned tuna



In figure8 shows the distribution of the study sample members according to their awareness of the transfer of "MeHg" from the mother to the fetus via the placenta. It is clear that most of the study sample members, who are pregnant women, do not know if it is possible for "MeHg" to be transferred from the mother to the fetus via the placenta, with a number of (95) and a percentage of (57%), while the number of those who answered" Yes" was (68) and a percentage of (41%), and then those who answered "No", with a number of (3) and a percentage of (2%).

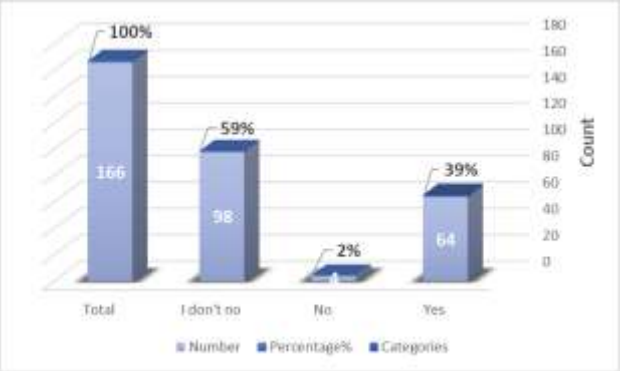
Figure8: Relative distribution of the study sample according to the awareness of the transfer of "MeHg" from the mother to the embryos via the placenta



In figure9 shows the distribution of the study sample according to their knowledge about excessive exposure to "MeHg", which primarily affects the development of the nervous system and the embryo brain. It is clear that most of the pregnant women in the study sample do not know whether methylmercury has any effect on the development of the nervous system and the fetal brain, as the number reached (98) and the percentage of (59%), while the number of those who answered "Yes" reached (64) and the

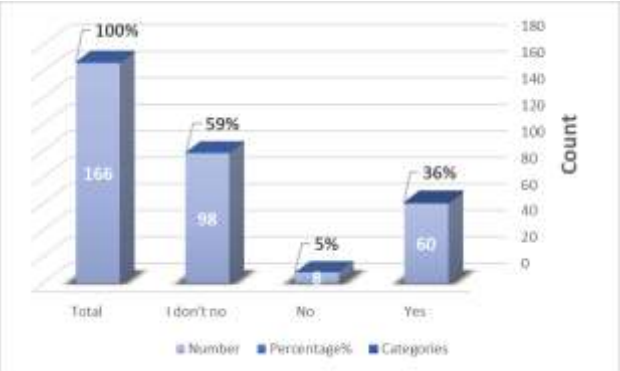
percentage of (39%), and then those who answered "No" reached (4) and the percentage of (2%).

Figure9: Relative distribution of the study sample according to awareness of the risks of "MeHg" and its effect on the embryonic nervous development



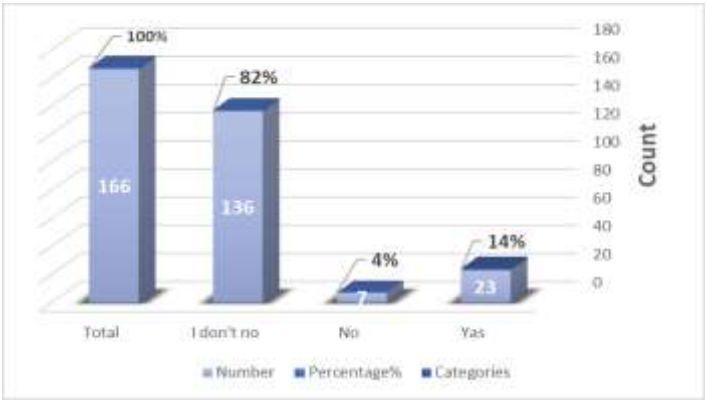
In figure10 shows the distribution of the study sample according to their belief that consuming high amounts of "MeHg" leads to mental and behavioral disorders in embryos after birth, such as delayed academic comprehension, low IQ, and ADHD. It is clear that most of the study sample do not know whether consuming high amounts of methylmercury leads to problems, with a number of (98) at a percentage of (59%), while the number of those who answered "Yes" was (60) at a percentage of (36%), and then those who answered "No" were (8) at a percentage of (5%).

Figure10: Relative distribution of the study sample their believe that excessive consumption of methylmercury leads to mental and behavioral problems in embryos after birth.



In figure11 shows the distribution of the study sample according to the extent of knowledge of the maximum recommended weekly consumption of canned tuna for pregnant women. It is clear that most of the study sample did not know if there was a maximum recommended weekly consumption of canned tuna, with a number of (136) and a percentage of (82%), while the number of those who answered "Yes" were (23) and a percentage of (14%), and then those who answered "No" were (7) and a percentage of (4%).

Figure11: Relative distribution of the study sample according to pregnant women's knowledge of the recommended weekly limit for canned tuna consumption



2- Quantitative assessment of total mercury concentrations in selected commercial canned tuna samples available from a stores of Derna city

A chemical analysis by "Libya's First Summit Company" for Laboratory Outfitting, Consultancy, and Biochemical Analysis – Al-Bayda, was conducted to evaluate mercury (Hg) concentration levels in three commercial brands of skipjack tuna available in the local market, which are commonly chosen by consumers: "Conatuna", "Costadorora", and "Wadi Al-Kouf". The analysis was performed using "Inductively Coupled Plasma Optical Emission Spectrometry" (ICP-OES) in accordance with established international standards (US EPA Method 200.7, 200.2, and EN ISO 11885, 2007).

The laboratory results, as detailed in (Table 1), indicated that mercury levels in all tested samples were below the Limit of Detection (LOD) of 0.001, classifying them as 'non-detectable' within the sensitivity range of the instrument used.

Table 1: The concentrations (Hg) in different types of the tuna cans samples

Sample code	Hg(ppm)	LOD	R^2
Contadora	Non detectable	0.001	0.999
Conatuna	Non detectable		
Wadi AL-Kouf	Non detectable		

4. DISCUSSION

4.1 Demographic Characteristics and Their Relationship to Health Awareness

The study results indicated that the majority of the sample (82%) holders of higher education qualifications (figure1), revealed that the young age group (18–29 years) was the most represented, accounting for 54% of the sample(figure2). Interpretations of this result regarding the optimal childbearing age and its link to high educational attainment suggest a positive correlation with increased health awareness and the ability to assess dietary risks. However, this level of education does not guarantee a comprehensive understanding of environmental contaminants, such as methylmercury found in seafood in general, and in canned (cooked) tuna in particular, this

finding aligns with a study conducted in Tripoli, Libya, which found that pregnant women with higher levels of education tend to be more concerned with eating healthy

4.2 Canned Tuna Consumption Patterns and the Awareness Gap Regarding Species:

According to the results in (figure 4); 46% of pregnant women consume tuna once a week, while 26% consume it two or three times a week, and 14% consume it more than three times a week. Combined, these figures show that 40% of pregnant women consume tuna at least twice a week. These high consumption rates are consistent with the findings of another local study conducted in Libya, which showed that 93% of Libyan women prefer canned tuna and consume it three to six times a week due to its easy availability and low cost (Abuhlega,2020). Both the Food and Drug Administration (FDA) and the U.S. Environmental Protection Agency (EPA) recommend that pregnant women not exceed two per week of fish with low methylmercury concentrations, such as skipjack tuna, while limiting the consumption of fish with high levels of methylmercury, such as albacore tuna (FDA, 2020). Analysis of the data on "Tuna Types Consumed" (figure5); reveals a significant knowledge gap; 75.3% of pregnant women were unaware of the differences between various tuna types (such as skipjack and albacore). International research supports this finding, showing that the majority of consumers lack the knowledge to distinguish between different types of canned tuna when purchasing. This is particularly concerning because canned albacore can contain levels of methylmercury three times higher than those found in canned skipjack (European Food Safety Authority, Perth et al., 2012).According to (figure 6) ; (40.4%) of pregnant women consumed small cans (less than 115 g) and (40.4%)consumed medium-sized cans (115–185 g), while (18.1%) said they had no idea what the can size was. From a practical and analytical standpoint, pregnant women's choice of small and medium cans does not indicate past knowledge or a conscious effort to reduce methyimercury intake; rather, it is a random consumption behavior or one motivated by commercial factors because the participants did not fully comprehend the sizes and weights of tuna cans and the implications of these numbers for determining the intake dose.

4.3 Assessing the level of awareness among pregnant women regarding the risks of methylmercury and its impact on the embryos nervous system

The study (figure7); revealed a significant lack of awareness regarding the risks of methylmercury (MeHg). 58% of pregnant women reported being unaware of its presence in canned tuna. Even more concerning, as shown in (figure8), 57% of participants were unaware of Methylmercury's ability to cross the placenta from mother to embryos. According to scientific research, Methylmercury readily crosses the placental barrier through molecular mimicry and accumulates in embryo tissues in quantities that may exceed those found in maternal blood (Sakamoto et al., 2004) The results (figure9); regarding awareness of the neurological and behavioral effects of Methylmercury on embryos indicate that 59% of pregnant women are unaware that Methylmercury directly affects the development of the embryos nervous system and brain. The results also (figure10); showed that 59% of participants were unaware of the link between excessive methylmercury exposure and postnatal cognitive and behavioral problems in embryos, including attention deficit hyperactivity disorder (ADHD) and lower IQ. These findings are consistent with international longitudinal studies (such as those in the Faroe Islands and Seychelles) that have demonstrated a strong association between behavioral disorders, delayed academic achievement, and prenatal exposure to high levels of mercury (Sagev et al., 2012). This study also confirms that a loss of (IQ) points is one of the most well-established effects of prenatal exposure to methylmercury (Bellinger et al.,2019).

4.4 Knowledge of safe consumption limits and distinguishing between types

In (figure 11); the study found that 82% of pregnant participants were unaware of the recommended weekly maximum intake of canned tuna, indicating a significant knowledge gap regarding global consumption recommendations. The U.S. Environmental Protection Agency (EPA) and the U.S. Food and Drug Administration (FDA) advise pregnant women to consume two servings per week of canned fish with low methylmercury content (FDA, 2022).

4.5 Assessment of mercury levels in local brands

The three targeted brands of skipjack tuna in the city of Derna had very low total mercury values, staying below (0.001 ppm), according to laboratory analysis. with the strict guidelines set by the World Health Organization (WHO) and the Food and Agriculture Organization (FAO), which set the absolute maximum allowable limit for mercury in the wet flesh of commercially canned tuna at (0.001ppm) to guarantee product safety and stop the distribution of contaminated samples. When compared to local studies, these findings are consistent with the general indicators of a 2023 study carried out by Bushanati in the city of Derna; however, the present samples showed much lower levels of contamination than the concentrations found in that study for Skipjack tuna, which varied from (0.192 - 0.387 µg/g) (Thai produced). The quality and purity of the current laboratory samples are credited with this decrease, and it is noted that the results of both investigations securely fall below the limits that are acceptable for consumption from an environmental and health standpoint, in compliance with international regulations. These findings show complete adherence by Libya's National Center for Standards and Metrology, underscoring the dedication of regulatory and health authorities to ensuring the quality of imported food products in order to protect consumer health.

5. CONCLUSION AND RECOMMENDATION

Based on the findings of this study, and to protect fetuses from the risks of silent methylmercury poisoning, it is

strongly recommended that the following steps be taken and implemented to enhance health and community awareness among pregnant women and those planning a pregnancy in the city of Derna: (i) Activating the awareness-raising initiative (brochures) which was included as a proposal in this study as a primary intervention tool, and ensuring their permanent availability in clinics and pharmacies (Appendix-1). (ii) Incorporating a nutritional guidance program into the routine prenatal care process and mandating that medical staff provide verbal advice regarding the list of "safe and unsafe canned tuna" while simultaneously distributing an educational leaflet to reinforce understanding. (iii) Conducting community education by involving medical personnel in local radio programs and small-scale awareness sessions within obstetrics and gynecology clinics, ensuring the message reaches the widest possible audience of pregnant women and those planning a pregnancy

6. REFERENCES

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7. APPENDIX

Proposed Awareness-Raising Strategy:

"Towards Safe Consumption of Canned Tuna During Pregnancy"

1. Strategy Objectives

(i) Close the existing methylmercury (MeHg) knowledge gap among
pregnant women in Derna.

(ii) Give expectant pregnant women the ability to differentiate between
the types of canned tuna that are offered in the neighborhood market
when making purchases.

(iii) To safeguard the embryonic neurological system, regulate and specify
safe weekly ingestion amounts and portions.

2.Implementation and Dissemination Mechanism

(i) Physical Format: A high-quality, visually structured, tri-fold
educational brochure.

(ii) Distribution Points in Derna: Obstetrics and gynecology clinics, and
major community pharmacies.

3. Scientific and Textual Content of the "Tri-Fold Brochure"

Dividing the content and distributing it across the brochure's five panels
(inner and outer):


جامعة درنة
كلية العلوم
قسم علم الحيوان
دليل العامل للاستهلاك الآمن للتونة المعلبة في مدينة درنة
نحو نمو عصبي سليم ودماغ ذكي لجنينك
"الأسماك مفيدة جداً لك ولجنينك. ولكن الاختيار الواعي يحميه من الملوثات الخفية."
ما هو ميثيل الزئبق وكيف نتعرض له؟
ميثيل الزئبق MeHg هو مركب كيميائي سام يتراكم في أجسام الأسماك الكبيرة عبر البيئة البحرية سواء كانت هذه الأسماك طازجة أو معلبة
MeHg
الخطر الحقيقي عند تناول التونة المعلبة بكميات كبيرة، فإن ميثيل الزئبق يتراكم في دم الأم و يخترق "الحاجز المشيمي" ويصل لدماغ الجنين مباشرة
تأثيره على الجنين يؤثر سلباً على نمو الجهاز العصبي المركزي، حيث يؤدي بعد الولادة إلى اضطرابات نفسية وسلوكية مثل اضطراب فرط الحركة وتشتت الانتباه، انخفاض معدل الذكاء IQ، نقص معدل الاستيعاب الدراسي، تأخر الكلام والمشي، وكذلك تأخر في النطق في مراحل النمو المبكرة للطفل
الصوت الأخضر: الأكثر أماناً
تونة سكيب جاك (Skipjack Light Tuna)
تحتوي على أقل نسبة زئبق، المثلى للحوامل والأطفال، تعتبر الخيار الأكثر أماناً للاستهلاك المتكرر، يمكنكم تناول علبة واحدة منها أسبوعياً بأمان
الصوت الأصفر: بحذر شديد
تونة "يلوفن" (Yellowfin)
تحتوي على مستويات متوسطة، تناول منها مرة أو مرتين شهرياً وبحد أقصى
الصوت الأحمر: الممنوعة أثناء الحمل
الألبكور الأبيض (Albacore White tuna)
التونة البيضاء، تحتوي على تركيزات عالية جداً من ميثيل الزئبق بسبب كبر حجم السمكة وعمرها الطويل


معادلة الاستهلاك الآمن
(الكمية والحصص)
الحد الأقصى الموصى به عالمياً WHO/FDA لا تتجاوزي حصتين أسبوعياً من التونة الخفيفة (skipjack) سكيب جاك
ما هي الحصة الواحدة؟
تعادل علبة متوسطة (حجمها في حدود 120 جم بعد التصفية)
تنبيه هام: تكرار الاستهلاك لأكثر من 3 مرات أسبوعياً (حتى وإن كانت العلب صغيرة) يؤدي إلى تراكم المادة السمية ميثيل الزئبق في جسمك ودماغ جنينك
رسالة خاصة
وعيك اليوم.. هو صحة وذكاء طفلك غداً

.