RESEARCH
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ASSOCIATION BETWEEN PROPHYLACTIC HEALTHY BEHAVIOURS WITH HEALTHY BEHAVIOURS AMONG IRAQI MOTHERS

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Abstract
Background: The most important proximal factors influencing health are healthy behaviors. It raises one's general quality of life, health, and wellbeing. Mothers' health is greatly influenced by a number of factors, including nutrition, exercise, immunizations, and preventive healthy behavior. Aims: The aims of current study were to assess what factors affect healthy behaviour in mothers. Methodology: There was a cross-sectional study conducted in March and June of 2023. a sample of 300 mothers who were not pregnant, did not have any chronic illnesses, and were regular patients at the al Karkh district basic health care center. Information gathered through in-person interviews with a self-structured questionnaire. Results: The total participants are 300 mothers; the study shows that mean age for participants is 30.7, and 66% of them between 28-35 years. Conclusion: only small percentage of them are performing physical activity.so most of mothers are not following the guidelines of the screening tests. also monitoring and promoting vaccination coverage among mothers remains essential to safeguard their health and prevent outbreaks. Fruits and vegetables intake among mothers is significantly low and. And the majority of mothers are not following the guidelines regarding different screening tests.
Keywords: prophylactic healthy behaviours, physical activity, vaccination diet, Iraqi Mothers.

INTRODUCTION:

Healthcare-seeking behaviour is defined as "any action or inaction taken by individuals who perceive themselves to have a health problem or to be ill to find an appropriate treatment"[(1)].It is crucial to identify and comprehend health-seeking behaviour to provide essential healthcare services and construct strategies for increasing women's utilization of health services in the community[(2)].Mothers should be educated about prevalent health problems and improve their access to healthcare services by not only developing health centres but also sensitizing them to identify health-related felt requirements and enhancing health-seeking behaviour.

Eating behaviour is a behaviour significantly associated with weight gain. Nonetheless, these alterations are inconsistent and differ among women, Although correct health behaviours and a healthy lifestyle in reproductive-age females ensure favourable pregnancy outcomes[(3)], there is a high prevalence of harmful behaviours among women in this period[(4)].

Physical activity is, according to the traditional definition, "every body movement required for daily life or as part of a training program." [(5)]. The combination of physical activity and health-promoting nutrition is one of the most fundamental human requirements and a prerequisite for preserving and improving health throughout all stages of life. Physical activity reduces the risk of most chronic diseases, particularly cardiovascular system diseases, obesity, type 2 diabetes, and cancer[(6)].

Hand hygiene (HH) is essential for preventing the transmission of diseases in clinical and community settings. The frequency with which the public washes their hands and its impact on the spread of disease are issues of increasing significance[(7)]. Uncertainty exists as to whether individuals can practice HH correctly. When performing actions that necessitate handwashing, many people disregard the importance of HH. 40% of visitors to petting zoos, for instance, cleanse their hands upon leaving animal contact places[(8)].Handwashing with detergent is the most effective method for eradicating microorganisms from hands and preventing the transmission of infectious diseases[(9)].Certain sociodemographic factors influence HH compliance. Urban residents with a high level of education and adequate knowledge of infectious diseases have a high handwashing adherence rate[(10)].Women are more likely to cleanse their hands than men after controlling for bathroom characteristics and social standard-related grouping effects[(11)].

Vaccination is the most effective method for preventing infectious diseases from claiming lives. Since the second half of the 20th century, vaccination campaigns have contributed to eradicating smallpox and reduced the dread of other fatal infectious diseases, such as polio, measles, and pneumococcal disease[(12)].vaccine hesitancy has also been characterized as "the dynamic and challenging period of indecision around accepting a vaccination"[(13)].Vaccine hesitancy is not a clear-cut issue but represents a spectrum of beliefs and concerns. It is a complicated and context-specific problem that varies across time, location, and vaccine and is influenced by complacency, convenience, and confidence[(14)].

One of the most crucial tests is blood pressure because high blood pressure frequently has no symptoms and cannot be identified without being checked. According to the American Heart Association, high blood pressure greatly increases the possibility of heart disease and stroke. Starting at age 20,

blood pressure should be checked at least once every two years if it is below 120/80 mm Hg. Healthcare providers might want to monitor blood pressure more frequently if it is higher. Dietary changes, medication, and lifestyle adjustments can manage high blood pressure[15] ,therefore the aim of current study was: to determine what factors, affect healthy behaviour in Iraqi mothers.as well as to study the relationship between prophylactic healthy behaviours with healthy behaviours among mothers

Methodology:

A cross-sectional descriptive study carried out during the period (March to June)2023, three days a week. About 300 mother, attending primary health care centres at Al-Karkh directorate were involved in the study on a convenient base, a verbal consent was taken from all the participants to be included in the study.Data collection had been done by direct interview, using a self-structured questionnaire.The questionnaire was divided into 6 sections as follows:

1st section: questions about age of participants;2nd section: questions about healthy diet behaviour;3rd section: questions about physical activity practices;4th section: question a hand washing practice;5th section: questions about vaccination history and 6th section questions about prophylactic healthy behaviour.

Statistical Analysis: The data was analyzed in version 25 of the Statistical Package for Social Sciences (SPSS). A p-value of 0.05 or less was regarded as significant.

RESULTS:

Age groups:

The mean age for participants was 30.7 and standard deviation was 5.5, the youngest mother was 17 years old and the oldest was 52. Table (1) below show the distribution of study sample according to age groups. The majority of participants, 66%, were within 28-35 years age.

Table (1): The distribution of study sample according to basic characteristics

Age groups (years)	Number	Percentage (%)
≤ 27	84	28
28-35	197	66
36-44	12	4
>45	7	2

According to the score, study sample were divided into two groups, the mothers who were practicing healthy behaviour was 84 (28%), and the mothers practicing unhealthy behaviour were 216 (72%). This is illustrated in figure (1).

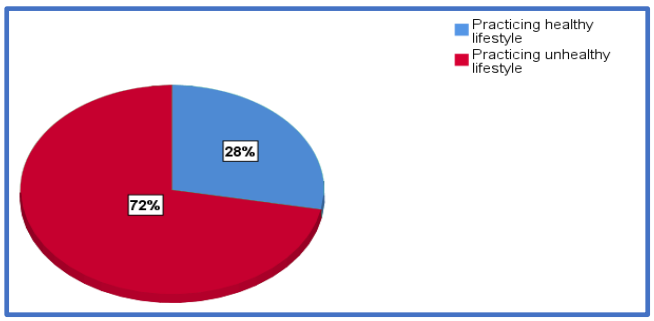

Figure (1): Percentage of mothers practicing healthy and unhealthy behaviour.

Frequency and percentage for responses of healthy diet behaviour and physical activity with healthy behaviours:

Table (2) below shows the frequency and percentage of each response of healthy and unhealthy behaviour groups regarding diet questions and physical activity. The majority of the study sample did not have sufficient fruits and vegetables serving per day (94%). Fortunately, most of the studied mothers gets varied diet and look for information about healthy eating. Twenty-four percent don't have breakfast, and 29% do physical activity.

Table (2): Relationship between some factors (Smoking, healthy diet, and physical activity) and healthy behaviours (α = 0.05, n = 300)

Variable	Sub-category	Healthy behaviour	Unhealthy behaviour	Total	P-value
Current smoker	Yes	5 (13) *	33 (87)	38 (13)	0.02
	No	79 (30)	183 (70)	262 (87)	
Fruits and vegetable servings	Sufficient	10 (56)	8 (44)	18 (6)	0.01**
	Insufficient	74 (26)	208 (74)	**282 (94)**	
Is your diet varied?	Yes	84 (30)	199 (70)	**283 (94)**	0.004**
	No	0 (0)	17 (100)	17 (6)	
Do you look for information about healthy eating?	Yes	79 (36)	140 (64)	**219 (73)**	0.0001
	No	5 (6)	76 (94)	81 (27)	
Do you limit the consumption of sugar?	Yes	67 (36)	117 (64)	184 (61)	0.0001
	No	17 (15)	99 (85)	116 (39)	
Do you eat breakfast?	Yes	73 (32)	154 (68)	227 (76)	0.005
	No	11 (15)	62 (85)	**73 (24)**	
Do you limit the consumption of salt?	Yes	68 (41)	99 (59)	167 (56)	0.0001
	No	16 (12)	117 (88)	133 (44)	
Do you do physical activity	Yes	43 (50)	43 (50)	86 (29)	0.0001
	No	41 (19)	173 (81)	214 (71)	

*Count (percentage), **Fisher's exact test

Frequency and percentage of responses regarding hand washing and vaccination questions:

Regarding hand washing 99% of the study sample was washing their hands before preparing food. But for vaccination only 33% and 20% took flu and tetanus vaccine, respectively. An opposite to that 81% of them took Covid-19 vaccine. Table (3) below illustrates the count and percentage for each response.

Table (3): Association of hand washing and vaccination with healthy behaviours (α = 0.05, n = 300)

Variable	Sub-category	Healthy behaviour	Unhealhty behaviour	Total	P-value
Do you wash your hand before preparing food?	Yes	84 (28) *	214 (72)	**298 (99)**	1.0 **
	No	0 (0)	2 (100)	2 (1)	
Did you take Covid-19 vaccine?	Yes	79 (33)	164 (67)	**243 (81)**	0.0001
	No	5 (9)	52 (91)	57 (19)	
Did you take flu vaccine?	Yes	44 (45)	54 (55)	98 (33)	0.0001
	No	40 (20)	162 (80)	**202 (67)**	
Did you take tetanus vaccine?	Yes	31 (51)	30 (49)	61 (20)	0.0001
	No	53 (22)	186 (78)	**239 (80)**	

*Count (percentage)
**Fisher-exact test

Frequency and percentage of responses regarding prophylactic healthy behaviours questions:

Regarding prophylactic healthy behaviours, high proportion of mothers weren't check their blood sugar and blood pressure regularly. And only 5% were tested for bone density. Also, 70% don't do self-breast examination.

Unfortunately, only 13% perform mammography while 4% perform pap-smear. The count and percentage of these responses are shown in table (4).

Table (4): Association of prophylactic healthy behaviours with healthy behaviours (α = 0.05, n = 300)

Variable	Sub-categ	Healthy behaviour	Unhealthy behaviour	Total	P-valu
Check blood sugar leve	Yes	61 (62)	37 (38)	98 (33)	0.0001
	No	23 (11)	179 (89)	**202 (67**	
Check blood pressure	Yes	47 (53)	42 (47)	89 (30)	0.0001
	No	37 (18)	174 (82)	**211 (70**	
Test for bone density	Yes	12 (75)	4 (25)	16 (5)	0.0001*
	No	72 (25)	212 (75)	**284 (95**	
Perform self-breast examination	Yes	47 (52)	43 (48)	90 (30)	0.0001
	No	37 (18)	173 (82)	210 (70	
Perform mammography	Yes	26 (65)	14 (35)	40 (13)	0.0001
	No	58 (22)	202 (78)	**260 (87**	
Perform Pap-smear	Yes	9 (69)	4 (31)	13 (4)	0.002*
	No	75 (26)	212 (74)	**287 (96**	
Test for lipid profile	Yes	50 (62)	31 (38)	81 (27)	0.0001
	No	34 (16)	185 (84)	219 (73	
Visit dentist regularly	Yes	52 (34)	100 (66)	152 (51	0.04
	No	32 (22)	116 (78)	148 (49	
Use pain relievers	Yes	23 (18)	107 (82)	130 (43	0.001
	No	61 (36)	109 (64)	170 (57	

*Count (percentage) , **Fisher's-exact test

DISCUSSION:

Diet and nutrition are essential and modifiable lifestyle factors that can be targeted in preconception interventions[16]. Appropriate preconception nutrition with weight adjustment and optimal metabolic conditions decreases the likelihood of adverse gestational and foetal complications, such as diabetes[17]and gestational hypertension[18], foetal neural tube defects, macrosomia[19], and adult obesity[20].

Unhealthy dietary practises include not consuming the recommended five or more servings of fruits and vegetables daily, consuming little milk and dairy products, skipping meals, and frequently consuming energy-dense, nutrient-poor, fast- and ready-to-eat foods, which are unfortunately quite prevalent, particularly among young women[21]. Nonetheless, substantial disparities exist between the sexes regarding dietary intake and eating behaviours[22]. Compared to males, women consume more fruits, vegetables, legumes, whole foods, desserts, and cakes. Men tend to consume foods higher in lipids, proteins, and saccharine-carbonated beverages; generally, their dietary habits may promote overweight and obesity. In addition, these data provide interesting evidence regarding the impact of high socioeconomic and cultural levels on food preferences. These may be affected by cultural and advertising pressures that promote, for instance, thinness as a beauty criterion. According to data collected in Italy from adults, more women than men ingest the recommended five servings of fruits and vegetables daily. The motivation to implement healthful eating behaviours is another factor that may influence dietary habits[23]. Women appear to have a heightened awareness of nutrition's impact on human health, making them more likely to adopt a healthier diet. In addition, women are especially concerned with their body image, with which they are generally dissatisfied. Despite this, women have been shown to forsake and abandon the new diet more frequently than males. A possible explanation is that the positive effects of adopting healthier dietary practises are much more pronounced in males than in females, who are more susceptible to discouragement[24].

Physical activity enhances mental health and strengthens the skeletal system. Long-term epidemiological studies carried out in the United States (the Framingham study, Multiple Risk Factor Intervention Trial (MRFIT), Harvard Alumni Study, and the Nurses' Health Study) and a variety of nations, including the United Kingdom and Scandinavia have confirmed the protective effects of physical activity against cardiovascular disease[25].

It is well-established that women of any age benefit from routine physical activity (PA) for disease prevention and maintaining mental and physical well-being[26]. Nevertheless, physical inactivity has become a worldwide epidemic with severe health, economic, environmental, and social consequences[27]. Women were almost 8 per cent less physically active than males globally and have maintained a lower level of PA over the past several decades[28]. Without a change in men's PA, a small increase in women's PA would be sufficient to meet the WHO's global goal of decreasing physical inactivity by 10% by 2025[29]. Therefore, it is necessary to address the gender disparity and increase women's PA levels[30].

According to empirical evidence, handwashing is approximately 85% effective at eradicating microorganisms from hands, and hand drying further reduces transient flora[31]. Insufficiently dried hands are more likely to spread microorganisms than entirely dried palms. Compared to the empirical evidence associated with HH compliance among healthcare professionals[32], information about

the general public's knowledge level and HH behaviour is relatively limited. Numerous studies have determined that HH behaviour emphasizes handwashing compliance while ignoring hand drying[33]. When conducting household duties, most women dry their hands on their waist wear, whereas males dry their hands on their trousers or a handkerchief. Therefore, gender differences in hand drying preferences and compliance with proper hand drying should be investigated[34].

In many countries, pertussis and influenza vaccinations are encouraged and financed throughout pregnancy[35]. Pertussis (whooping cough) is responsible for hospitalizations and fatalities, especially among neonates. A tetanus–diphtheria–acellular–pertussis (Tdap) vaccination protects neonates from severe pertussis during pregnancy[36]. Influenza during pregnancy is associated with increased influenza-associated mortality and hospitalisations and negative foetal outcomes. Hospitalisations of expectant women and infants associated with influenza are associated with reduced maternal vaccination rates against influenza[37,38].

The COVID-19 vaccine has been a critical tool in the global fight against the pandemic caused by the SARS-CoV-2 virus. Vaccination efforts have played a crucial role in reducing the transmission of the virus, severe illnesses, and deaths. Multiple vaccines have been developed and approved for emergency use, utilizing various technologies such as mRNA, viral vector, and protein subunit. These vaccines have undergone rigorous clinical trials to ensure safety and efficacy[39].

For Covid-19 vaccination, 81% of studied mothers took at least 2 doses. This percentage was more than the prevalence in the study that conducted in the United Stated in 2021. In which around 65% of women aged 18 years and older had received COVID-19 vaccine (Lopez et al., 2021) [40]. This may be due to strict regulations taken by the government to encourage vaccination.

Practicing healthy behaviours among mothers includes monitoring key health parameters such as blood pressure, blood sugar, and engaging in regular mammograms and self-breast examinations. Regular monitoring of blood pressure is essential for identifying hypertension, a significant risk factor for cardiovascular disease. Similarly, monitoring blood sugar levels aids in the early detection and management of diabetes and its associated complications[41 &42].

Thirty percents of mothers in our study are checking their blood pressure regulary, which was less than studies that highlighted a significant proportion of mothers engage in regular blood pressure monitoring as a preventive measure. For instance, a study of (Egan *et al.,* 2010) conducted in the United States reported that approximately 45% of women self-monitor their blood pressure at home, demonstrating a growing awareness of the importance of monitoring this vital health parameter[43]. Another survey-based study (Cuspidi *etal.,* 2005) in Italy found that 58% of women regularly monitor their blood pressure, indicating a relatively higher level of engagement in blood pressure monitoring activities[44].

While the effectiveness of breast self-examination (BSE) as a standalone screening tool has been debated, it is still considered a valuable component of breast health awareness. Regular BSE allows women to actively participate in their own breast health, promoting early detection of breast lumps, changes in breast shape or size, or other potential signs of breast conditions, including breast cancer. according to (Asmare *etal.,* 2022) 46% of women in Ethiopia has performed self-breast examination[45],While it was 30% in our study. Which considered a small percentage that may be because of the inefficient ways to promote for this test.

The percentage of women undergoing mammograms as a crucial screening test for breast cancer has demonstrated significant progress in recent years, contributing to early detection and improved outcomes. According to the American Cancer Society's Cancer Statistics report for 2021 (Siegel *et al.,* 2021) [46]. Low-dose X-rays of the breast are used in mammograms. The American Cancer Society advises having a mammogram every two years between the ages of 50 and 74 to detect breast cancer at an early stage.

Osteoporosis, characterized by reduced bone mass that increases the risk of fracture, is a serious medical issue. Osteoporosis is a prevalent condition, but it can sometimes be clinically quiet. Without screening and prevention, the healthcare system will be burdened by the expenses of osteoporotic fracture-related morbidity and mortality. Dual-energy X-ray absorptiometry is the most popular, established method for determining bone mineral density (BMD) and identifying osteoporosis. By age 65, current recommendations call for at least one screening for women[47].

A *lipid panel* is a fasting blood test used to evaluate blood fat levels, such as cholesterol and triglycerides, which can help predict the likelihood of developing heart disease or stroke. The American Heart Association states that the two cholesterol levels, HDL (the better cholesterol) and LDL, together with the 20% triglyceride level, are added to determine total cholesterol. It should be checked at least once every five years between the ages of 20 to 65, more frequently if there is a significant risk of heart disease. People 65 and older should get their cholesterol checked annually[48].

CONCLUSIONS:

- **A.** Physical activity, most mothers are not performing physical activity and are following sedentary lifestyle.
- **B.** Most of mothers are not following the guidelines of the screening tests.
- **C.** Monitoring and promoting vaccination coverage among mothers remains essential to safeguard their health and prevent outbreaks.
- **D.** Importance of empowering mothers to take control of their cardiovascular health through regular blood pressure monitoring, enabling early detection of hypertension and timely intervention to decrease associated risks.

Ethical considerations:

1.Essential official permission was obtained from the Arab board for health specialization for all sectors of health care centres in Baghdad Al-Karkh health directorate.

2.Verbal consent was taken from each mother before enrolment in the study, explaining the aim of the study and reassuring them about the confidentiality of the collected data and clarifying that this data will be used for research purpose only.

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