Original Article

Women's Knowledge, Attitudes, and Practices Toward Hepatitis A infection in the Era of Conflicts

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Abstract

Background: Hepatitis A is a significant public health concern, especially in regions with conflicts which are characterized by limited access to clean water and proper sanitation as the case of Gaza strip. This study aims to assess women's knowledge, attitudes, and practices toward Hepatitis A infection in the Gaza strip.

Methods: A cross-sectional study was conducted using a convenience sampling. The study was carried out at Shohadaa Al Daraj primary health center, where a total of 384 women were approached, however, 202 responded, yielding a response rate of 52.6%. Data were collected through self-developed semi-structured questionnaire using face to face interview approach. Validity and reliability were verified and descriptive analysis was applied with the SPSS software program.

Results: Majority of the women were aged between 18 and 30 years (56.2%), and most were married (99.5%). Regarding knowledge about hepatitis A, 72.5% of the participants demonstrated adequate knowledge. Attitudes toward the disease were generally positive, with 75.6% of participants scoring above the 60% threshold for a positive attitude. In terms of preventive practices, the results showed good adherence, with 90.3% of participants engaging in effective preventive behaviors.

Conclusion: Participants possessed a generally good knowledge, positive attitudes, and adherence to preventive behaviors. The study highlights the importance of addressing misconceptions and enhancing awareness about the severity of hepatitis A and appropriate care practices. Targeted health education programs are recommended to correct misconceptions

Keywords: Knowledge, Attitude, Practice, Hepatitis A, Prevention.

Introduction

Hepatitis A virus (HAV) is the most common cause of viral hepatitis worldwide. It is transmitted primarily via the faecal/oral route by ingestion of contaminated food or water, or through direct contact with an infectious person. Infection does not result in chronic liver disease, but can cause debilitating symptoms and lead to acute liver failure, which is associated with high mortality (Lavanchy, 2012). In low-income countries, HAV remains highly endemic, but improvements in water and sanitation systems

are reducing transmission rates. Hepatitis A infections are usually asymptomatic, though this is more common in early childhood. Symptomatic presentations could include nausea, vomiting, fatigue, or fever; symptoms that can easily be misattributed to the common cold, leading to underreporting of HAV infections (Lin et al., 2017).

Globally, there are about 1.5 million cases of HAV each year (Matheny & Kingery, 2012). According to the Centers for Disease Control and Prevention (CDC), there were 13,829 reported cases of Hepatitis A in the United States. However, the actual number of cases is estimated to be much higher, with projections suggesting as many as 31,607 cases, as many infections may go undiagnosed or unreported (CDC, 2021). Dardona et al. (2023) revealed that the global prevalence of HAV has significantly decreased over time, primarily due to advancements in sanitation, improved hygiene practices, and increased access to clean water in many regions.

The prevalence of hepatitis A infection in Gaza has been exacerbated by ongoing conflict, overcrowded living conditions, and the collapse of essential infrastructure. Epidemiological data on hepatitis A in Gaza remains limited, but available studies suggest a high seroprevalence. A study involving 396 schoolchildren, during the recent conflict, in Gaza reported that over 93% of participants tested positive for hepatitis A antibodies, indicating widespread exposure to the virus. Additionally, the Palestinian Ministry of Health documented over 8,000 confirmed cases of hepatitis A, primarily due to the unsanitary conditions in shelters and displacement camps (Dardona et al., 2023). The United Nations Relief and Works Agency (UNRWA) reported a rise in the number of cases from 85 before the war to nearly 40,000 since the war began (UNRWA, 2024).

Studying knowledge, attitudes and practices related to Hepatitis A is essential for guiding public health actions, enhancing disease prevention efforts, and ultimately reducing the incidence and impact of the disease. It ensures that health education and interventions are evidence-based, culturally sensitive, and effectively targeted. Evidence shows a remarkable gap in knowledge and practices toward HAV infections (Samara et al., 2021; Cruz et al., 2018). However, the attitudes were positive (Rachiotis et al., 2012; Samara et al., 2021). Information the from Gaza strip is limited and thus this study aimed to explore the knowledge, attitudes and practices regarding hepatitis A infection among women attending primary health facilities as they are primary caregivers for children and responsible for household hygiene.

Materials & Method

Study Design*:* This study is a descriptive cross-sectional study. The design was chosen because it effectively captures data at a specific point in time, making it suitable for understanding current practices and beliefs.

Study Setting*:* The study was conducted at Shohadaa AL Daraj primary health center in Gaza city. The center provides access to a diverse group of women from different socioeconomic backgrounds.

Study Period*:* Data collection took place between April to May 2025 ensuring sufficient time for participant recruitment, data gathering, and preliminary analysis**.**

Study Population, sample size and sampling*:* The study population consisted of women attending Shohadaa Al-Daraj primary health center. Approximately 5,000 women visit the center each month. As the prevalence of Hepatitis A and the level of awareness among mothers in Gaza is unknown, we assumed that 50% of the population have adequate knowledge about Hepatitis A. Based on this assumption, the sample size was calculated using the formula: $(Z1-\alpha)^2 * P (1-P) / d^2$ with confidence interval is 95% and 5% error. Accordingly, the required sample size is $(1.96)^2 * (0.5) * (0.5) / (0.05)^2 = 384$ participants. Participants were selected based on the following inclusion and exclusion criteria:

Inclusion Criteria: 1.Should be married and have at least one child, 2. Women aged 18 years and older. 3. Residents of the selected study area. 4.Willing to participate and provide informed consent.

Exclusion Criteria:1. Women previously diagnosed with Hepatitis A. 2. Individuals unable to respond due to cognitive or communication barriers.

Ethical Consideration: Ethical approval was obtained from the research department at the ministry of health (No: 2545582). Participants were informed about the study's objectives, and their right to withdraw at any stage without consequences. Written informed consent was obtained before data collection. Confidentiality and data security protocols were strictly followed.

Data Collection: Data were collected using a semi-structured questionnaire designed to assess participants' knowledge, attitudes, and

practices regarding Hepatitis A infection. The questionnaire was developed based on existing literature and expert consultation. It included the following sections; 1) Socio-demographic Information (age, education, occupation, etc.), 2) Knowledge Assessment (8 questions answered on yes, no and don't know), 3) Attitudes Assessment (11 questions answered on 5 point Likert scale from strongly disagree to strongly agree), and Practices Assessment (8 questions answered on 4 point Likert scale: always, sometimes, rarely and never). The instrument was checked for reliability and validity. With regard to reliability, alpha Cronbach was 0.79, 0.81 and 0.85 for the knowledge, attitudes and practices, respectively. In addition, it was 0.8 for the whole questionnaire. Test re-test reliability was applied to 25 participants with two weeks period, and the intra class correlation (ICC) was 0.92. Nine experts rated the content validity of the instrument and validity was measured using content validity index (CVI) including item (I-CVI) and scale content validity index (S-CVI). I-CVI ranged between 0.90 and 0.96 and S-CVI was 0.92, 0.95 and 0.92 for knowledge, attitudes and practices, respectively.

Data Analysis: The Statistical Package for Social Sciences (SPSS) version 22 (IBM Corp, Armonk, NY, USA) was used in data analysis, and the data were checked for outliers and errors during data entry phase. Descriptive statistics included percentages and frequencies were calculated for categorical variables, while mean and SD for continuous variables. Knowledge, attitudes and practices were considered as adequate, positive and good if the mean percentage score is 60% or above, respectively.

Results

Characteristics of participated women

Table 1 shows that 202 participants were included in the study with response rate at 52.6%. More than half are aged between 18-30 years (56.2%). Regarding marital status, 99.5% were married. The mean family size was 4.94 (2.28) members, and 65.8% of participants had a family size between 1-5 members. Most participants (92.6%) are non-medical staff. Regarding educational level, 35.6% had a university degree. The majority of participants (89.6%) reported a monthly income of 0-1000 ILS.

Awareness toward hepatitis A infection Table 2 shows that the knowledge regarding hepatitis "A" infection was generally good, with an overall correct response rate of 72.5% and a mean score of 17.41 ± 2.58. The majority of participants (76.7%) understood that hepatitis "A" is a contagious disease, and 82.2% correctly recognized that it is transmitted through contaminated food or water. However, only 42.1% believed that hepatitis "A" could be transmitted through blood. A large proportion of participants (94.1%) correctly identified yellowing of the face and eyes (jaundice) as a symptom of hepatitis "A". Furthermore, 75.2% believed that hepatitis "A" patient should consume sugars as part of their nutritional care.

Attitudes toward hepatitis A infection

Table 3 illustrates that participants exhibited generally positive attitudes toward the prevention of hepatitis A infection, with an overall attitude score of 75.6% (41.62±5.02). Majority (94.1%) agreed that hand-washing is essential in preventing the spread of the infection, and 92.1% expressed readiness to adopt preventive measures. Furthermore, 91.5% reported willingness to receive the hepatitis "A" vaccine for themselves and their families, indicating a high level of health consciousness and preventive awareness.

Despite these positive attitudes, only 50.5% perceived hepatitis "A" as a serious and potentially fatal disease. Moreover, misconceptions were evident: 41.6% disagreed with the notion that there is no need for a separate toilet for hepatitis "A" patient, and 37.6% agreed that infected individuals should not sit with their families during meals. Only 21.2% believed that hand-washing alone is sufficient to prevent hepatitis A.

Practices toward hepatitis A infection

Table 4 reveals that women demonstrated a high level of adherence to preventive behaviors, with an overall percentage mean of 90.3%. The majority of participants reported engaging in healthy hygiene practices. Of the respondents, 94.1% reported cleaning the toilet after every use, while 99.0% stated that they always wash their hands after using the toilet. In addition, 92.6% wash their hands before and after eating, and 95.5% teach their children the same. Regarding food safety, 89.6% ensure fruits and vegetables are washed before consumption, and 89.6% also ensure drinking water is clean. Furthermore, 85.1% avoid using personal items belonging to hepatitis A patient, reflecting awareness of infection transmission. However, a lower adherence was observed in dietary practices, with 64.4% allowing their infected children to consume unhealthy foods such as

fried and fatty meals, which is contrary to recommended guidelines.

Table 1: Socio-demographic characteristics of participants (n=202)

Variables	n	%	M±SD
Age years			31.99±10.34
18-30	115	56.2	
>30	87	42.9	
Marital status			
Married	201	99.5	
Others	1	0.5	
Family size			4.94±2.28
1-5	133	65.8	
>5	69	34.2	
Occupation			
Medical staff	15	7.4	
Non-medical staff	187	92.6	
Education level			
Elementary	2	1.0	
Preparatory	26	12.9	
Secondary	102	50.5	
University	72	35.6	
Income level (ILS)			
0-1000	181	89.6	
1001 – 1500	17	8.4	
1600 – 2500	2	1.0	
>2500	2	1.0	

Table 2: Descriptive analysis of participants' knowledge toward hepatitis "A" infection (n=202)

Variables	Yes	No	Don't Know	M+SD
Hepatitis A is a contagious disease.	155 (76.7%)	39 (19.5%)	8 (4.0%)	2.58±0.79
Hepatitis A is transmitted through blood.	85 (42.1%)	93 (46.0%)	24 (11.9%)	1.96±0.94
A patient with hepatitis A often does not need to be admitted to the hospital.	109 (54.0%)	84 (41.6%)	9 (4.5%)	2.12±9.72
Hepatitis A is transmitted through contaminated food or water.	166 (82.2%)	25 (12.4%)	11 (5.4%)	2.70±6.79
Hepatitis A is transmitted through direct contact with an infected person.	124 (61.4)	64 (31.7%)	14 (6.3%)	2.30±9.20

Symptoms of Hepatitis A: Yellowing of the Face and Eyes	190 (94.1%)	8 (4.0%)	4 (2.0٪)	2.90±4.11
symptoms of hepatitis A: general weakness, diarrhea, and vomiting	175 (86.6%)	10 (5.0 (%	17 (8.4٪)	2.82±5.00
A patient with hepatitis A needs to eat sugars.	152 (75.2%)	28 (13.9%)	22 (10.9%)	2.61±7.19
Overall knowledge mean ± SD (17.41 ± 2.58)				**72.5 %**

Table 3: Descriptive analysis of participants' attitudes toward hepatitis "A" infection (n=202)

Variables	Strongly disagree n(%)	Disagree n(%)	Neutral n(%)	Agree n(%)	Strongly agree n(%)	M±SD
Hands should be washed to prevent the spread of hepatitis A infection.	9 (4.5%)	2 (1.0%)	1 (0.5%)	101 (50.0%)	89 (44.1%)	4.28±0.90
I believe that hepatitis A is serious and fatal.	15 (7.4%)	56 (27.7%)	29 (14.4%)	85 (42.1%)	17 (8.4%)	3.16±11.45
I think there is no need to allocate a special toilet for a patient with hepatitis A.	35 17.3%	59 (29.2%)	24 (11.9%)	71 (35.1%)	13 (6.4%)	2.84±12.56
I feel ready to adopt preventive measures against hepatitis A.	3 1.5%	14 6.9%	6 3.0%	129 63.9%	50 24.8%	4.03±8.31
I believe that using clean drinking water contributes to the prevention of hepatitis A.	3 (1.5%)	4 (2.0%)	9 (4.5%)	117 (57.9%)	69 (34.2%)	4.21±7.46
I believe that hygiene contributes to the prevention of hepatitis A.	4 (2.0%)	7 (3.5%)	1 (0.5%)	101 (50.0%)	89 (44.1%)	4.31±8.19
I believe that hand washing alone is sufficient to prevent hepatitis A.	20 (9.9%)	98 (8.5%)	21 (10.4%)	43 (21.3%)	20 (9.9%)	2.73±11.93
I think that if a vaccine against hepatitis A is available, I will go and get the vaccine for myself and my family.	4 (2.0%)	8 (4.0%)	5 (2.5%)	91 (45.0%)	94 (46.5%)	4.30±8.60
I believe that crowded population centers increase the risk of hepatitis A spreading.	3 (1.5%)	14 (6.9%)	3 (1.5%)	95 (47.0%)	87 (43.1%)	4.23±8.98
I believe that poor sanitation increases the spread of hepatitis A.	2 (1.0%)	5 (2.5%)	0	107 (53.0%)	88 (43.6%)	4.36±7.07
A person with hepatitis A should not sit with his family while eating.	9 (4.5%)	69 (34.2%)	28 (13.9%)	71 (35.1%)	25 (2.4%)	3.17±11.60

Overall Attitude mean ± SD (41.62±5.02)	**75.6%**

Table 4: Descriptive analysis of participants' practices toward hepatitis A infection (n=202)

Variables	Never n(%)	Rarely n(%)	Sometimes n(%)	Always n(%)	M±SD
I clean the toilet after every use.	1 (0.5%)	0	11 (5.4%)	190 (94.1%)	3.93±0.30
Wash fruits and vegetables before eating them.	0	2 (1.0%)	14 (6.9%)	181 (89.6%)	3.96±2.41
Ensure that the drinking water used is clean.	1 (0.5 (%	6 (3.0%)	14 (6.9%)	181 (89.6%)	3.85±4.61
I do not use the personal items of a hepatitis A patient.	14 (6.9%)	5 (2.5%)	11 (5.4%)	172 (85.1%)	3.68±8.26
I wash my hands after using the toilet.	0	1 (0.5%)	1 (0.5%)	200 (99.0(%	3.98±1.57
I wash my hands before and after eating.	0	1 (0.5%)	14 (6.9%)	187 (92.6%)	3.92±2.88
I teach my children to wash their hands before and after eating.	1 (0.5%)	1 (0.5%)	7 (3.5%)	193 (95.5%)	3.94±3.09
I allow my son with hepatitis A to eat all kinds of foods such as: fried foods and fatty foods.	130 (64.4%)	27 (13.4%)	34 (16.8%)	11 (5.4%)	1.62±9.44
Overall practice mean ± SD (28.9 ± 1.50)					**90.3%**

Discussion

The study revealed that participants had a generally adequate knowledge about HAV. A significant majority recognized HAV as a contagious disease and identified contaminated food or water as a primary transmission route. These findings align with previous studies, which have shown that awareness of HAV transmission through contaminated food and water is relatively high in populations with similar socio-demographic profiles (Jacobsen & Wiersma, 2010). However, misconceptions persisted, particularly regarding transmission through blood. This suggests a gap in understanding the specific routes of HAV transmission, which is consistent with findings from other regions where blood-borne transmission was often confused with other hepatitis viruses like Hepatitis B or C (Odenwald & Paul, 2022). The high recognition of jaundice as a symptom is encouraging, as early symptom identification can lead to timely medical intervention. However, the belief that HAV patients should consume sugars reflects a cultural or traditional practice that may not align with current medical guidelines. This underscores the need for targeted educational campaigns to correct such misconceptions and promote evidence-based nutritional care for HAV patients (WHO, 2020).

Participants exhibited positive attitudes toward HAV prevention. The majority agreed on the importance of hand-washing and

expressed readiness to adopt preventive measures. These results are consistent with studies emphasizing the role of hygiene in preventing fecal-oral transmitted diseases (Bloomfield et al., 2007). Despite these positive trends, half perceived HAV as a serious and potentially fatal disease, indicating a underestimation of its severity. This is concerning, as low perceived severity can reduce compliance with preventive measures (Rosenstock, 1974). Additionally, stigmatizing attitudes were evident, with 41.6% disagreeing that separate toilets for HAV patients are unnecessary and 37.6% believing infected individuals should not sit with their families during meals. Such attitudes may stem from misinformation or cultural beliefs, highlighting the need for community-based education to reduce stigma and promote inclusive care practices (Langan & Goodbred, 2021). The high willingness to receive the HAV vaccine is a promising finding, suggesting that vaccination campaigns could be well-received in this population. This aligns with global recommendations advocating for vaccination as a cornerstone of HAV prevention, especially in endemic regions (WHO, 2020).

The study demonstrated strong adherence to preventive practices. Most participants reported hygienic behaviors such as cleaning toilets after use, washing hands after toilet use, and ensuring clean drinking water. These practices are critical for interrupting HAV transmission and are consistent with findings from other studies in similar settings (Vivas et al., 2010). However, dietary practices revealed a notable gap: 64.4% allowed infected children to consume unhealthy foods like fried and fatty meals, contrary to medical advice. This suggests a need for targeted nutritional education, particularly for caregivers of HAV patients, to align dietary practices with clinical guidelines (Matheny et al., 2018).

This study has limitations, including its cross-sectional design, which limits causal relationship. Additionally, self-reported practices may be subject to social desirability bias. Future research could employ longitudinal designs and objective measures (e.g., observational checklists) to validate findings.

In conclusion, participants possessed a generally good knowledge, positive attitudes, and adherence to preventive behaviors, it also underscores the importance of addressing misconceptions and enhancing awareness about the severity of hepatitis A and appropriate care practices.

Implications for Public Health

The study's findings underscore the importance of multifaceted public health interventions to address gaps in knowledge, attitudes, and practices related to HAV. Key recommendations include:

1. Educational Campaigns: Focus on correcting misconceptions (e.g., blood borne transmission) and promoting evidence-based practices (e.g., nutritional care). Community workshops and mass media could be effective tools.

2. Stigma Reduction: Address stigmatizing attitudes through community engagement and testimonials from HAV survivors to humanize the disease.

3. Vaccination Programs: Leverage the high willingness to vaccinate by expanding access to HAV vaccines, particularly in high-risk areas.

4. Hygiene Promotion: Reinforce existing positive practices while addressing gaps, such as dietary habits, through school-based and caregiver-focused programs.

Acknowledgement: The authors would like to thank the Director General of Human Resources Development and Research Department at the Ministry of Health, Gaza for facilitating data collection process. Also, we are thankful to all women who participated in this study to make it real

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