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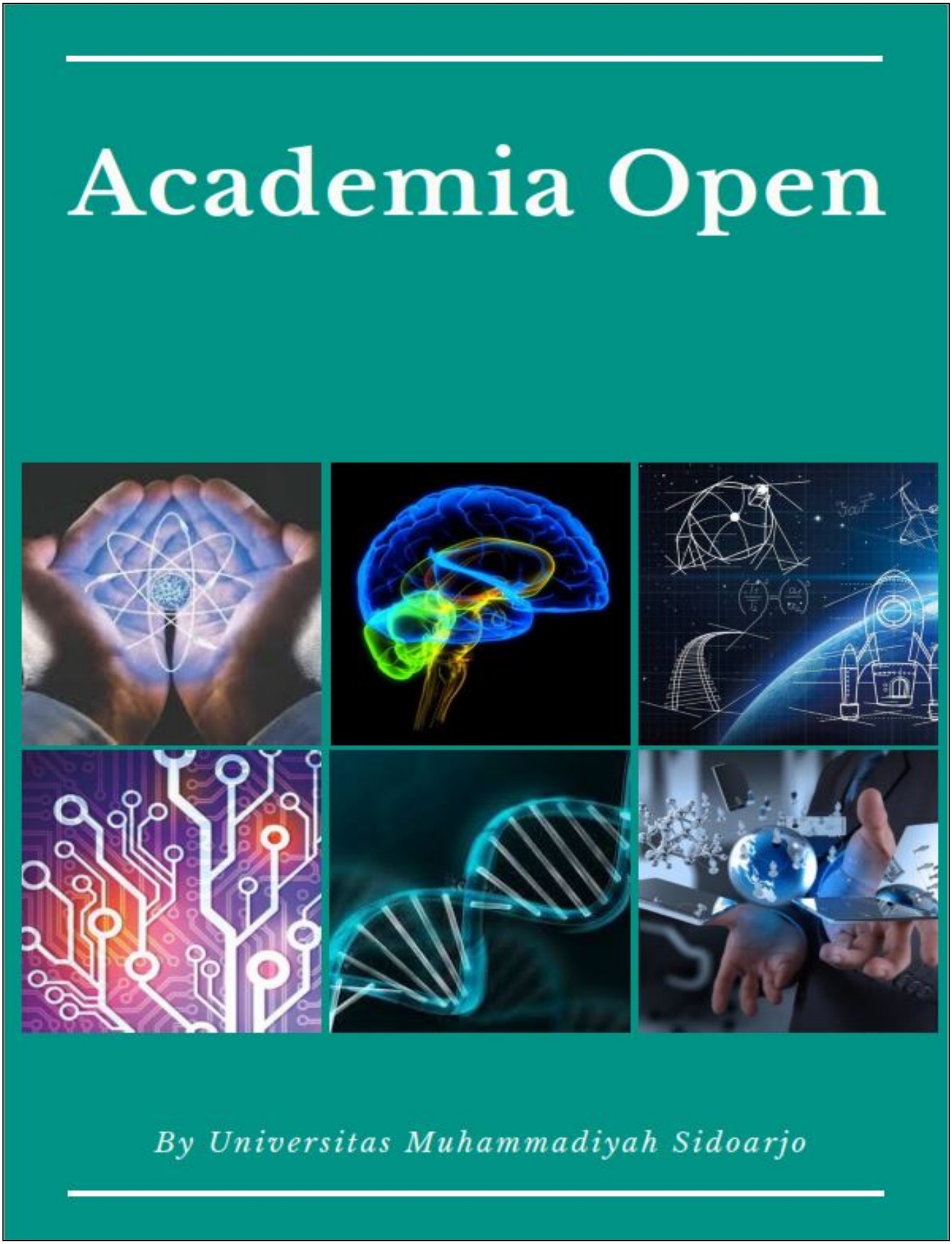


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# Evaluating Nursing Students' Understanding of Hydatid Disease in Iraq

## *Mengevaluasi Pemahaman Mahasiswa Keperawatan tentang Penyakit Hidatidosa di Irak*

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**Abstract**

This study investigates the knowledge, attitudes, and awareness regarding Hydatid Disease among Nursing College students at the University of Basrah, recognizing its status as a neglected zoonotic disease. Utilizing a descriptive cross-sectional questionnaire-based approach, data were collected from 380 male and female students across the 2nd, 3rd, and 4th stages of study. Results reveal a significant lack of knowledge, with over half of the participants demonstrating poor understanding of the disease. Only a small fraction exhibited good knowledge, emphasizing the urgent need for heightened awareness initiatives. Interestingly, older students showed slightly better attitudes compared to younger ones. These findings underscore the necessity for targeted educational interventions to improve knowledge and attitudes toward Hydatid Disease among nursing students, ultimately enhancing public health outcomes.

**Highlights:**

- Significant lack of knowledge among Nursing College students regarding Hydatid Disease.
- Urgent need for heightened awareness initiatives to address the knowledge gap.
- Targeted educational interventions required to improve attitudes and knowledge among students.

**Keywords:** Hydatid Disease, Nursing College Students, Awareness, Knowledge, Attitude

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# Introduction

Echinococcus granulosus is the parasite illness that causes cystic echinococcosis, and humans are thought to be unintentional hosts. Liver hydatid disease (LHD) is often a quiescent condition; nonetheless, patients may be at risk for fatal consequences if a cyst bursts in the biliary tract, peritoneal or pleural cavity, or portosystemic venous system [1]. In endemic places, hydatidosis is a major public health concern that results in socioeconomic losses. The current worldwide burden of the disease is estimated to be 188,000 disability-adjusted life years [2]. Radical surgery to remove the cyst completely might be the ultimate solution for liver hydatid disease. The surgical procedures are classified into conservative and radical approaches [3]. The more conservative the approach, the lower the perioperative risk and the higher the recurrence rate and cavity-related complications [4]. Simple puncture/aspiration of the cyst, unroofing or partial cystectomies, and radical resections with total cystectomy and anatomic hepatic resections are among the conservative approaches [5].

The boldness of radical therapy for a benign illness is frequently criticized. Still, this is the most effective healing method [6]. There is bias when reporting on postoperative morbidity or recurrence rate since most research comparing conservative and radical methods does not evaluate the impact of the open cyst resection (OCR) or closed cyst resection (CCR) strategy [7]. Although the CCR may only be interested in radical surgery, this is an alternative viewpoint from the traditional topic of conservative vs radical surgery [8]. We concentrated on the opening fact rather than the distinctions between radical and conservative operations [9]. When using the open-cyst approach, which tries to reduce liver and peritoneal recurrences, but carries the risk of uncontrolled accidental cyst rupture or damage to important structures surrounding the cyst, CCRs are suggested as a way to reduce the risk of small peritoneal seeding. This approach was first described by Bourgeon in 1964 [10]. This study aims to identify students' knowledge and attitude about hydatid disease.

# Methods

A descriptive cross-sectional study was adopted to investigate and evaluate the knowledge and attitude of the Hydatid Disease and its causing agent, complications, and treatment among the students of Nursing College at University of Basrah during the period between January 2024 and March 2024. The study was conducted at College of Nursing at University of Basrah among students in the 2nd, 3rd, and 4th of undergraduate stages. The sample of the study included 381 male and female undergraduate students of Nursing College at University of Basrah. The students are in the 2nd, 3rd, and 4th stages of study all of which keep on studying now.

Criteria of inclusion include Students of Nursing College at University of Basrah, Male and female students included in the study, Students of the levels of $2^{nd}$, $3^{rd}$, and $4^{th}$ stages, the students who agreed to participate, and Students of both morning and evening studies. Criteria of Exclusion include Students of other colleges, Students of the 1st stage undergraduate, and Students who refused to participate. The targeted data was collected using a three-part questionnaire prepared by researchers and approved by experts in the nursing college. Distribution of the questionnaire among participants was done through direct interviews with each student next to assurance of their agreement to participate. Data collection was carried out in the period between February 2024 and March 2024. Using the Arabic version of the questionnaire, each student spent approximately (5-8) minutes responding to the three parts of the questionnaire.

According to the requirements of a scientific descriptive study depending on the criteria of Medical and Nursing Colleges for research questionnaires, a questionnaire of three sections was suggested first. Then, a rough draft of the questionnaire was submitted to a group of expert lecturers in the College of Nursing for revision, edition, and evaluation purposes. The three sections included demographic information of the participants, questions about the knowledge of students, and questions assessing the possible attitudes of the participants toward the hydatid disease. The first part included demographic information of participants as (age, gender, occupation, level of study, type of study, marital status, and residency).

The second part involved 12 various and direct questions concerning general and crucial knowledge of the Hydatid Disease and the causative agent; Echinicoccocus Graniolosus. The last part included another set of 12 guided questions questing for the awareness and attitudes of the participants toward the Hydatid Disease and the proper treatment and advice recommended for infected patients. The validity of the content of the study instruments was revised and evaluated by a group of experts in the College of Nursing, University of Basrah. These experts had at least 10 years of theoretical and practical experience in their fields of specialty. The poor knowledge level is considered when the percentage of correct answers is below the cut-off point i.e. > 49%. A fair knowledge level is considered when the percentage of correct answers is between 50% - 69%. A good knowledge level is considered when the percentage of correct answers is above 69%; =< 70%. The same considerations are adopted in expressing the level of attitude. Chi-squared test was used to examine the relationship between the level of student's knowledge and attitude -separately- with the sociodemographic variants of significance; gender, age, level of study, and occupation. A probability of less than 0.05 was considered to be statistically significant.

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# Results and Discussion

## A. Results

Table (1) shows the number of participants according to each demographic variable separately and illustrates the ratio of each variable in percentages (%) as well. Students of ages between (18-22 years) comprised (68.77%) of the total sample. Female students constitute about (67.72%). The unemployed occupied more than (91.60%) of the total sample. The students in 3rd stage comprised (41.47%). Participants from evening study participants constituted about (51.18%). The single ones were approximately (85.56%). The district dwellers were (61.68%), of the total sample.

The results of Table (3) showed that the majority of both male and female participants had poor knowledge. Approximately one-quarter of females (25.58%) and a slightly more percentage of males (28.23%) had a fair level of knowledge. Besides, only 3 males (2.42%) and 1 female (0.39%) had good knowledge about hydatid disease. As it is shown in the findings of (table 5), approximately half of the participants had poor attitude; (49.24%) at 18-22 years, and (46.22%) above 22 years of age. Nearly (42.36%) of 18-22 years. had a fair attitude, and (41.18%) of older participants had a fair attitude. Approximately (8.40%) of those younger participants had a good attitude. However, a noticeable increase exists in the attitudes of older students of which (12.61%) had a good attitude. As shown in Table (7), the fourth-stage students achieved higher scores for good knowledge level (3.53%) than the students of the 2nd and 3rd stages. However, the students of the 2nd and 3rd stages achieved higher scores for fair knowledge level (26.62%) and (31.65%) sequentially, much more than the score of 4th students (16.47%).

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| Characteristics of participants | Categories | Frequency | % |
|---|---|---|---|
| Age | 18-22 y | 262 | 68.77% |
| | Above-22 y | 118 | 31.23% |
| Gender | Male | 122 | 32.28% |
| | Female | 258 | 67.72% |
| Occupation | Employee | 31 | 8.14% |
| | Unemployed | 348 | 91.60% |
| Stages | 2nd | 138 | 36.48% |
| | 3rd | 158 | 41.47% |
| | 4th | 84 | 22.05% |
| Type of Study | Morning | 185 | 48.82% |
| | Evening | 195 | 51.18% |
| Marital Status | Married | 55 | 14.44% |
| | Single | 325 | 85.56% |
| Place of Residence Place of Residence | City center | 118 | 30.97% |
| | District | 234 | 61.68% |
| | Rural | 28 | 7.35% |

**Figure 1.** ***Demographic Data of the Students***

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| Questions Of Knowledge | CORRECT ANSWERS | | | | INCORRECT ANSWERS | | | |
|---|---|---|---|---|---|---|---|---|
| | Male | | Female | | Male | | Female | |
| | No. | Freq | No. | Freq | No. | Freq | No. | Freq |
| Q1 | 12 | 9.76% | 6 | 2.33% | 111 | 90.24% | 252 | 97.67% |
| Q2 | 30 | 24.39% | 76 | 29.46% | 93 | 75.61% | 182 | 70.54% |
| Q3 | 83 | 67.48% | 199 | 77.13% | 40 | 32.52% | 59 | 22.87% |
| Q4 | 67 | 54.47% | 134 | 51.94% | 56 | 45.53% | 124 | 48.06% |
| Q5 | 50 | 40.65% | 110 | 42.64% | 73 | 59.35% | 148 | 57.36% |
| Q6 | 15 | 12.20% | 23 | 8.91% | 108 | 87.80% | 235 | 91.09% |
| Q7 | 19 | 15.45% | 27 | 10.47% | 104 | 84.55% | 231 | 89.53% |
| Q8 | 78 | 63.41% | 173 | 67.05% | 45 | 36.59% | 85 | 32.95% |
| Q9 | 21 | 17.07% | 18 | 6.98% | 102 | 82.93% | 240 | 93.02% |
| Q10 | 56 | 45.53% | 112 | 43.41% | 67 | 54.47% | 146 | 56.59% |
| Q11 | 60 | 48.78% | 124 | 48.06% | 63 | 51.22% | 134 | 51.94% |
| Q12 | 53 | 43.09% | 110 | 42.64% | 70 | 56.91% | 148 | 57.36% |

**Figure 2.** ***Knowledge of participants according to gender (Total No. = 380)***

| Level of Knowledge | (Male) (No.=124) | | (Female) (No.=258) | | Significant |
|---|---|---|---|---|---|
| | No. | % | No. | % | |
| poor (≤49%) | 85 | 69.35% | 190 | 74.03% | X2= 22.45488 df=11 p <0.025 |
| Fair (50-69%) | 35 | 28.23% | 66 | 25.58% | |
| Good (≥70%) | 3 | 2.42% | 1 | 0.39% | |
| Total | 123 | 100.00% | 257 | 100.00% | |

**Table 1.** ***Analysis of the knowledge of the participants according to gender***

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| Questions Of Attitude | CORRECT ANSWERS | | | | INCORRECT ANSWERS | | | |
|---|---|---|---|---|---|---|---|---|
| | Between 18-22 | | Above 22 | | Between 18-22 | | Above 22 | |
| | NO | Freq | NO | Freq | NO | Freq | NO | Freq |
| Q1 | 61 | 23.28% | 41 | 34.45% | 201 | 76.72% | 78 | 65.55% |
| Q2 | 66 | 25.19% | 43 | 36.13% | 196 | 74.81% | 76 | 63.87% |
| Q3 | 190 | 72.52% | 81 | 68.07% | 72 | 27.48% | 38 | 31.93% |
| Q4 | 176 | 67.18% | 71 | 59.66% | 86 | 32.82% | 48 | 40.34% |
| Q5 | 224 | 85.50% | 98 | 82.35% | 38 | 14.50% | 21 | 17.65% |
| Q6 | 33 | 12.60% | 19 | 15.97% | 229 | 87.40% | 100 | 84.03% |
| Q7 | 121 | 46.18% | 73 | 61.34% | 141 | 53.82% | 46 | 38.66% |
| Q8 | 139 | 53.05% | 65 | 54.62% | 123 | 46.95% | 54 | 45.38% |
| Q9 | 146 | 55.73% | 60 | 50.42% | 116 | 44.27% | 59 | 49.58% |
| Q10 | 134 | 51.15% | 54 | 45.38% | 128 | 48.85% | 65 | 54.62% |
| Q11 | 121 | 46.18% | 58 | 48.74% | 141 | 53.82% | 61 | 51.26% |
| Q12 | 28 | 10.69% | 24 | 20.17% | 234 | 89.31% | 95 | 79.83% |

**Figure 3.** ***Attitude of participants according to their ages. (Total No. = 380)***

| Level of Attitude | Age (18-22 y) (No.=262) | | Age (Above 22 y) (No.=118) | | Significant |
|---|---|---|---|---|---|
| | No. | % | No. | % | |
| poor (≤49%) | 129 | 49.24% | 55 | 46.22% | $X^2$ = 17.69001 df=11 0.05 < P < 0.1 |
| Fair (50-69%) | 111 | 42.36% | 48 | 41.18% | |
| Good (≥70%) | 22 | 8.40% | 15 | 12.61% | |
| Total | 262 | 100.00% | 118 | 100.00% | |

**Table 2.** ***Analysis of the attitude of participants according to their ages***

| Level of Knowledge | (2nd) (n=139) | | (3rd) (n=158) | | (4th) (n=85) | | Total |
|---|---|---|---|---|---|---|---|
| | NO | % | NO | % | NO | % | |
| poor (≤49%) | 102 | 73.38% | 107 | 67.72% | 68 | 80.00% | 276 |
| Fair (50-69%) | 36 | 26.62% | 50 | 31.65% | 14 | 16.47% | 100 |
| Good (≥70%) | 0 | 0.00% | 1 | 0.63% | 3 | 3.53% | 4 |
| Total | 138 | 100.00% | 158 | 100.00% | 85 | 100.00% | 380 |

**Table 3.** ***Analysis of the knowledge of the participants according to level of study***

## B. Discussion

This study aimed to identify the level of students' knowledge and attitudes. So, this part is classified into three parts.

### 1. Discussion of students' demographic data

According to the results of this study, the majority of the study sample is female (67.72%). This is approximately similar to the results of the study [11] conducted in Corum Province, Turkey during February-May 2016, where

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female participants made up (63.7 %) of the total sample.

Also, these results agreed with studies [12] which stated most of the study sample was female.

Also, the majority of the study sample (68.77%) are under 23 years old, and the minority (31.23%) are above 23 years of age [13]. The mean score of students' ages is 23.12 years. This comes in contrast with the study [14] conducted in Shiraz at Fars Providence, southern Iran, where the mean score of ages was (35.64) years.

**2. Discussion of students' knowledge**

According to the current study, the fourth-stage students achieved higher scores for good knowledge level (3.53%) than the students of the 2nd and 3rd stages. However, the students of the 2nd and 3rd stages achieved higher scores for fair knowledge level (26.62%) and (31.65%) sequentially, much more than the score of 4th students (16.47%).

Most students have poor knowledge, the researcher believes that students' knowledge deficit regarding hydatid disease might be due to many causes; students have not studied hydatid disease, the students do not have any training courses about hydatid disease, the students do not develop and update their knowledge continuously, and finally, the students not in direct contact with hydatid disease patients.

**3. Discussion of students' attitude**

According to the present study, approximately half of the participants had poor attitude; (49.24%) at 18-22 years, and (46.22%) above 22 years of age. Nearly (42.36%) of 18-22 y. had a fair attitude, and (41.18%) of older participants had a fair attitude. Approximately (8.40%) of those younger participants had a good attitude. However, a noticeable increase exists in the attitude of older students of which (12.61%) had a good attitude.

These results are consistent with a study [15] which stated most of the study sample have poor attitude.

# Conclusion

This study concluded the majority of both male and female participants had poor knowledge. Approximately one-quarter of females and a slightly more percentage of males had a fair level of knowledge. This current research paper indicated that more than half of the students of the 2nd, 3rd, and 4th stages had poor knowledge and poor attitude about Hydatid disease. Approximately less than ten percent of those younger participants had a good attitude. However, most of the students have poor attitudes about Hydatid disease.

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