**Knowledge, Attitudes, and Behavior Regarding Health and Environment: A cross-sectional study in Israel**

**Abstract:**

In the past two decades, public health researchers have emphasized the need to shift towards an approach that encompasses a broad understanding, including social and spatial aspects affecting public health in the city. The city can reduce environmental damage by promoting green construction, clean energy production, setting up recycling stations, educating the population to change consumption and eating patterns, and more. Like many cities worldwide, the municipality of Ashkelon understands the need to participate in the global effort to address the climate crisis. To this end, a survey was conducted to examine the relationship between knowledge, attitudes, and behavior regarding health and the environment among the residents of Ashkelon, Israel. The sample included 322 participants from the city's adult population who completed an online questionnaire. The findings showed that Ashkelon residents understand the connection between the environment and human beings and have a positive attitude towards preserving the environment. The questionnaire indicates that the city's residents do not have pro-environmental behavior, and not all facilities are accessible to all city residents. Positive and strong connections were found between knowledge, attitudes, pro-environmental behavior, and accessibility to facilities and research variables. In addition, participants who raised animals demonstrated more knowledge, attitudes, and pro-environmental behavior. Strengthening the public's positive attitudes is essential to acquiring knowledge and understanding of maintaining a green and healthy environment. It is recommended to adopt pets and encourage volunteering with animals. There is a need for extensive public education on the environmental issue and making the environment more accessible, enabling a healthy lifestyle while preserving the environment.

**1. Introduction**

In the past two decades, public health researchers have emphasized the necessity of shifting towards an approach that advocates for a comprehensive understanding encompassing social and spatial aspects in the city that affect public health (Portney & Sansom, 2017). This was evident during the COVID-19 pandemic, where local authorities actively participated in the national effort to mitigate the pandemic. Similarly, in the context of the climate crisis, it is within the purview of the municipal authority to enable residents to minimize environmental damage (Esmaeilian et al., 2018). Lifestyle and an increase in living standards also contribute to environmental impact, mainly due to the increasing consumption of meat and cheap clothing produced in the East, discarded here after a season, generating vast amounts of waste (Dopelt et al., 2019).

Sustainable cities are "green" cities that reduce environmental impact globally and promote sustainable consumption and production patterns tailored to the existing conditions within the country, considering cultural, social, and geographical aspects. City residents are committed to the common goal and strive to create new habits less harmful to the environment. Therefore, there is a need for agreement and collaboration among the city's residents in various aspects, such as waste recycling and reduction, renewable energy, encouragement of local purchasing, reduction of transportation usage, green spaces, raising awareness among the population, and more (Winter, 2018).

The national program "Efsharibari" (meaning "can be healthy") in Israel is aimed at promoting health and enabling the integration of intelligent nutrition and a healthy lifestyle combined with physical activity. The program involves governmental bodies, municipal authorities, the business sector, and volunteer organizations (Baron-Epel et al., 2020). The program was founded after the government's decision in 2011 to implement a program for an active lifestyle following the recommendations of the World Health Organization. Many cities, including Ashkelon, have joined the "Healthy and Sustainable Cities" network as part of the Efsharibari program.

Human behavior has caused numerous damage to the environment (NASA, 2019). Climate researchers have a consensus that increased carbon dioxide levels are caused by human activity (Dockrill, 2019). In recent years, various regulations have been established to preserve environmental quality, including attempts to minimize the impact involving different and innovative technologies (Hörcher & Graham, 2020). Sustainable nutrition assists in developing environmental values and preserving the environment. Local communities that protect the environment and enable the production of local and sustainable food can lead to long-term prosperity and the development and preservation of the environment (Santana et al., 2013).

In a study conducted among 361 students in Israel, they were surveyed through an online questionnaire regarding their knowledge, behavior, and attitudes regarding the environmental impact caused by the livestock industry. The research showed that students are unaware that the food they consume has an environmental impact, affecting animals. The findings emphasize the importance of environmental understanding and knowledge as part of behavioral change (Dopelt et al., 2019). Another study examined the relationship between waste usage, mainly plastic, and the awareness and behavior of 196 students in Korea. The research findings indicate that the usage and behavioral habits of the students during the COVID-19 pandemic were influenced by the environment in which they study and the family habits from which they come (Choi et al., 2022). The researchers concluded that research and education are needed to promote "zero waste" behaviors.

Studies found that people hold misconceptions about the long-term effects of climate change and still do not fully understand the population's personal responsibility and the individual's potential impact (Wachholz et al., 2014; Özdem-Yilmaz et al., 2014). However, studies worldwide show a strong correlation between attitudes and concern about climate change and environmental behavior and even indicate that positive attitudes and concern about climate change partially mediate the relationship between knowledge and environmental behavior (Milfont, 2012; Stevenson et al., 2019; Dopelt et al., 2021).

Climate changes (storms, heat waves, extreme rainfall events) can lead to destructive outcomes in urban areas and silence the city. Coastal cities, like Ashkelon, are particularly vulnerable to rising sea levels, storms, and floods. Moreover, pollution is the product of the environmental crisis. Cities are hubs of human activity associated with energy consumption and resource usage. Therefore, many greenhouse gas emissions occur in cities (Choi et al., 2022). Lifestyle and an increase in living standards also contribute to environmental impact, primarily due to the increasing consumption of meat and cheap clothing produced in the East, discarded here after a season, generating vast amounts of waste (Dopelt et al., 2019).

The city holds the potential to reduce environmental damage by promoting green construction, producing clean energy, placing recycling bins, educating the population to change consumption and eating patterns, and more (Bonoli et al., 2021). Like many cities worldwide, the municipality of Ashkelon understands the need to participate in the global effort to address the climate crisis. Therefore, the research aims to examine whether there is a connection between knowledge, attitudes, and behavior regarding health and the environment among the residents of Ashkelon, Israel, to develop intervention plans based on the findings. A similar survey has never been conducted in the city of Ashkelon.

**2. Materials and Methods**

*2.1. Participants and Procedure*

The cross-sectional study involved 322 participants from the adult population in Ashkelon (Israel). As of the end of 2021, there were approximately 51,300 households in Ashkelon, with close to 150,000 residents (Central Bureau of Statistics, 2022). Individuals under 18 were asked not to respond to the questionnaire. The questionnaire was programmed using Qualtrics survey software (Qualtrics, Provo, UT, USA). On 13 March 2023, a link to fill out the questionnaire was distributed on social networks (The neighborhoods' WhatsApp and Facebook groups). A month later, a reminder was sent to the groups, and on 15 May 2023, the survey was closed. According to the survey data, the response time for the questionnaire was, on average, around 6.8 min. The survey contained 381 entries; 322 participants filled out the questionnaire. Therefore, the response rate to the survey was 85% of the total entries. At the beginning of the questionnaire, the purpose of the study was explained. Filling out the questionnaire constituted informed consent to participate in the study, and no questions were defined as mandatory.

*2.2. Research Tool*

An online, closed, anonymous, self-report questionnaire was used. The questionnaire is based on a literature review and various questionnaires (Dopelt et al., 2019; Dopelt et al., 2021; Choi et al., 2022; Kumar et al., 2021). For validation purposes, the questionnaire was provided to eight employees at the Ashkelon Academic College who don't live in the city of Ashkelon. Five questions were corrected based on written comments made by participants. The questionnaire consists of six parts as follows:

1. Demographic data - 11 questions regarding gender, age, marital status, number of people in the household, number of children under 18, religiosity, education, country of birth, dietary lifestyle, socioeconomic status, and neighborhood of residence.
2. Attitudes - The questionnaire comprises ten questions. Participants were asked to indicate their level of agreement with each statement in the questionnaire on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The variable is constructed by calculating the mean for each participant after reversing scales for questions 3 and 9. The mean ranges from 1-5, with a higher score indicating a more positive attitude towards the environment. The internal consistency of the study was α = 0.70.
3. Knowledge - The questionnaire includes ten questions. Participants were asked to indicate their level of agreement with each statement in the questionnaire on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The variable is constructed by calculating the mean for each participant. The mean ranges from 1-5, with a higher score indicating a higher level of knowledge. The internal consistency of the study was α = 0.82.
4. Behavior - The questionnaire comprises ten questions. Participants were asked to indicate their level of agreement with each statement in the questionnaire on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The variable is constructed by calculating the mean for each participant after reversing scales for question 6. The mean ranges from 1-5, with a higher score indicating more environmentally friendly behavior. The internal consistency of the study was α = 0.72.
5. Accessibility of facilities - Participants were asked to indicate whether the following facilities are available near their residence: clothing recycling station, battery recycling station, paper recycling bin, plastic and glass recycling bin, walking path/trail, park and playgrounds, and fitness facilities. The variable was constructed by counting the positive responses. The variable range is 0-7, with a higher score indicating accessibility to more facilities near the residence.
6. Participants were asked an open-ended question: "In your opinion, how can the municipal authority contribute to environmental conservation?"

*2.3. Data Analysis*

The data were imported from the survey software and analyzed in SPSS v. 26 (IBM, Armonk, NY, USA). The relationships between the variables were examined using Pearson or Spearman correlations. Differences between groups were tested using independent samples t-tests. All reported p-values were based on two-sided tests and were considered significant when the values were below 0.05.

**3. Results**

*3.1. Sample Characteristics*

In total, 322 individuals participated in the study, of whom 79% were women and 75% were in a relationship. Most of the participants were Israeli-born (70%), secular (57%), and with an academic education (54%). Most define themselves as "omnivores" (88%), and 60% rear/reared an animal. The age range ranges from 18-83, with the average age being 41.48±13.74. Sample characteristics are shown in Table 1.

**Table 1.** Sample characteristics

|  |  |  |
| --- | --- | --- |
| **Characteristics** | ***n*** | **%** |
| Male | 69 | 21 |
| Female | 253 | 79 |
| Marital status:  Married, living with a spouse | 242 | 75 |
| Single | 48 | 15 |
| Divorced/separated/ Widower | 32 | 10 |
| Number of people living in the household:  Living alone | 30 | 9 |
| 2 | 87 | 27 |
| 3-4 | 105 | 33 |
| 4+ | 100 | 31 |
| Having children under the age of 18 | 173 | 54 |
| Level of religiosity:  Secular  Traditional  Religious | 182  85  54 | 57  26  17 |
| Level of education:  High school  Vocational high school  Academic | 57  91  173 | 18  28  54 |
| Nutrition:  omnivores  Vegetarians/vegans | 285  37 | 88  12 |
| Rear/reared an animal | 191 | 60 |
| Country of Birth:  Israel | 226 | 70 |
| Former USSR countries | 74 | 23 |
| Other | 22 | 7 |

*3.2. Attitudes*

The distribution of responses to statements that examined attitudes are presented below (Table 2) after combining categories as follows: answers 1 and 2 were combined into the category 'weakly agree,' answer 3 remained 'moderately agree,' and answers 4 and 5 were integrated into the category 'strongly agree.'

**Table 2.** Distribution of responses to the attitudes questionnaire.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Statement** | **Weakly (%)** | **Moderately (%)** | **Strongly (%)** | **Don't Know (%)** | **Mean** ± **SD1** |
| It is important to preserve the quality of the environment | 2 | 3 | 94 | 1 | 4.67±0.66 |
| Products made from recyclable materials should be used, even if they are more expensive | 15 | 49 | 35 | 1 | 3.52±0.97 |
| The amounts of waste do ~~not~~ affect me directly\* | 26 | 24 | 48 | 2 | 3.36±1.26 |
| I feel uncomfortable producing plastic waste | 12 | 27 | 60 | 1 | 3.68±1.03 |
| If I had more knowledge on the subject, I would incorporate environmental considerations into my food choices | 10 | 18 | 72 | 0 | 4.03±1.09 |
| It's important to me to use up leftover food | 12 | 16 | 71 | 1 | 3.86±1.06 |
| I am aware of the amount of waste my household produces | 23 | 22 | 54 | 1 | 3.47±1.17 |
| It is important to me that the products I consume are produced in a way that preserves the rights of the animals | 11 | 15 | 72 | 2 | 3.96±1.04 |
| The general concern for environmental problems [is not] excessive\* | 15 | 16 | 67 | 2 | 3.90±1.28 |
| I think that human behavior affects climate change | 3 | 8 | 87 | 2 | 4.53±0.80 |

1 The mean was calculated without including the 'I don't know' option.

\* Opposite questions. The data are presented in reverse rank order.

For the purpose of constructing the attitudes variable, we calculated the mean response of each participant without the 'I don't know' option and after reversing the scale for questions 2 and 9. The mean value of the variable was 3.89 (SD = 0.52).

*3.3. Knowledge*

The distribution of responses to statements that examined the level of knowledge is presented in Table 3 after combining categories as follows: answers 1 and 2 were integrated into the category 'weakly agree,' answer 3 remained 'moderately agree,' and answers 4 and 5 were combined into the category 'strongly agree.'

**Table 3.** Distribution of responses to the knowledge questionnaire.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Statement** | **Weakly (%)** | **Moderately (%)** | **Strongly (%)** | **Mean** ± **SD** |
| I understand the connection between the environment and human health | 2 | 21 | 77 | 3.97±0.75 |
| I know how to choose healthy food | 21 | 33 | 46 | 3.35±0.99 |
| I know how waste is recycled | 45 | 26 | 29 | 2.74±1.24 |
| I know the damage that plastic causes to the environment | 19 | 32 | 49 | 3.48±1.02 |
| I know the damage caused to the environment by the livestock industry | 38 | 27 | 35 | 2.99±1.15 |
| I know what is meant by the term 'zero waste' | 49 | 30 | 21 | 2.56±1.22 |
| I know what is meant by the term 'one health' | 47 | 34 | 19 | 2.55±1.16 |
| Humans are primarily responsible for climate change | 8 | 18 | 74 | 3.82±0.86 |
| I understand how much the climate crisis affects health | 7 | 24 | 69 | 3.78±0.83 |
| You can save electricity and reduce environmental pollution | 11 | 34 | 55 | 3.61±0.91 |

To construct the knowledge variable, we calculated the mean response of each participant. The mean value of the variable was 3.28 (SD = 0.63).

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*3.4.* *Behavior*

The distribution of responses to statements that examined behavior is presented in Table 4 after combining categories as follows: answers 1 and 2 were combined into the category 'weakly agree,' answer 3 remained 'moderately agree,' and answers 4 and 5 were integrated into the category 'strongly agree.'

**Table 4.** Distribution of responses to the behavior questionnaire.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Statement** | **Weakly (%)** | **Moderately (%)** | **Strongly (%)** | **Don't Know (%)** | **Mean** ± **SD1** |
| Use environmentally friendly products | 12 | 29 | 38 | 21 | 3.45±0.98 |
| Put plastic in the recycling bins | 37 | 20 | 37 | 6 | 2.98±1.46 |
| Use reusable cloth bags/baskets | 15 | 13 | 79 | 3 | 3.95±1.21 |
| Considering installing solar panels in the house/building | 35 | 12 | 21 | 32 | 2.61±1.42 |
| Make sure to buy only what you need | 10 | 18 | 69 | 3 | 3.97±1.08 |
| [No] ordering/buying home-prepared food\* | 16 | 35 | 47 | 2 | 3.39±1.04 |
| Eat family meals at least three times a week | 17 | 21 | 59 | 3 | 3.60±1.11 |
| The members of the house usually eat vegetables and fruits | 3 | 13 | 81 | 3 | 4.22±0.79 |
| Try to consume less chicken and meat products | 37 | 36 | 23 | 4 | 2.86±1.19 |
| Consider switching to a vegetarian or vegan diet | 66 | 9 | 18 | 7 | 2.13±1.39 |

1 The mean was calculated without including the 'I don't know' option.

\* Opposite questions. The data are presented in reverse rank order.

To construct the behavior variable, we calculated the mean response of each participant without the 'I don't know' option and after reversing the scale for question 6. The mean value of the variable was 3.35 (SD = 0.59).

*3.5. Accessibility of facilities to the place of residence*

The participants were asked about the proximity of 7 facilities to their residence. Table 5 shows the percentages of the respondents who stated that the facility exists near their home.

**Table 5**. Accessibility of the facility to the place of residence

|  |  |  |
| --- | --- | --- |
| **Statement** | **Accessibility**  **n** | **(%)** |
| Clothes recycling station | 113 | 37 |
| Battery recycling station | 99 | 31 |
| Paper recycling bins | 163 | 51 |
| Plastic recycling bins and bottles | 232 | 72 |
| Walking path | 223 | 69 |
| Park and amusement park | 280 | 87 |
| Fitness facilities | 159 | 49 |

To construct the accessibility of the facilities to the place of residence variable, we counted the positive answers from each participant. The variable ranges from 3-7, where the average is 4.13 (SD=1.59).

*3.5. The relationships between the variables*

Positive, significant, and strong relationships were found between the level of knowledge and the attitudes and behavior (rp=0.31, p<0.001; rp=0.40, p<0.001 respectively), that is, the higher the level of knowledge, the more positive the attitudes and the more pro-environmental the behavior.

A positive, significant, and strong relationship was found between the attitudes and the behavior (rp=0.45, p<0.001). The more positive the attitudes, the more pro-environmental the behavior.

Positive and significant relationships were found between the level of accessibility to facilities and knowledge, attitudes, and behavior (rp=0.15, p<0.01; rp=0.25, p<0.001; rp=0.23, p<0.001 respectively), that is, the higher the level of accessibility to facilities, Thus the knowledge is higher, the attitudes are more positive, and the behavior is more pro-environmental.

*3.6. Additional findings*

* Gender - No significant differences were found between males and females in relation to the level of knowledge, behavior, and level of awareness regarding the accessibility of facilities to the place of residence. However, significant differences were found between males and females concerning attitudes (t(319)=4.33, p<0.001), where women have more positive attitudes compared to men (averages 3.95 vs. 3.65, respectively).
* Age - the older the participants are, the more positive their attitudes (rp=0.15, p<0.01), the more pro-environmental behavior (rp=0.20, p<0.001), and the level of awareness regarding the accessibility of facilities to the place of residence (rp=0.12, p<0.05).
* The number of people living in the household - the more people live in the house, the less pro-environmental the behavior (rp=-0.22, p<0.001).
* Level of education - the higher the level of education, the more positive the attitudes (rs=0.14, p<0.05), the higher level of knowledge (rs=0.28, p<0.001), and the behavior more pro-environmental (rs=0.11, p<0.05).
* Animal rearing - significant differences were found between participants who rear/reared animals in the past and participants who did not with attitudes (t(317)=3.11, p<0.001), with the former having more positive attitudes (averages 3.37 vs. 3.15 respectively), and with behavior (t(292)=1.67, p<0.05), where participants who rear/reared animals have a more pro-environmental behavior (averages 3.39 vs. 3.28 respectively).

*3.7. How the municipal authority can help protect the environment*

The participants were asked in an open-ended question how, in their opinion, the municipal authority can help protect the environment. Of the participants, 201 answered the question (62%). More than half asked for more bins, recycling bins of all kinds to be made available and to handle waste; 27% suggested doing information and advertising to raise awareness; A quarter wanted to increase supervision and enforcement; 13% wanted to cultivate more parks and green neighborhoods; 5% would be happy for more fitness facilities and shaded walking trails; 3% demanded to invest in environmentally friendly equipment (such as solar lanterns and traffic lights) and a similar percentage suggested restoring destroyed sites.

**5. Discussion**

The city of Ashkelon joined the "Efsharibari" community and decided to set a goal for the town to change towards a healthier lifestyle. The current research examines the relationship between knowledge, attitudes, and behavior regarding health and the environment among the residents of Ashkelon.

Environmental issues have gained significant attention in recent years due to climate change. Human behavior has caused considerable damage to the environment, affecting the ozone layer over the years (NASA, 2019). The level of knowledge among the residents of Ashkelon regarding health and environmental issues is insufficient (average 3.28 out of 5). However, their attitudes are pretty positive (average 3.89 out of 5), while their behavior is not satisfying (average 3.35 out of 5). These findings align with various studies that show a high level of knowledge and positive attitudes among a significant portion of the population but poor pro-environmental behavior (Yang et al., 2018; Lombardi & Sinatra, 2012). A study conducted among students in Israel examining environmental literacy, including knowledge, attitudes, and behavior, found that most students have positive attitudes toward the environment and awareness of the environmental situation in the country. It's worth noting that students also express identification with environmental values related to nature conservation, almost to the same extent as they identify with values related to public health conservation (Sagi et al., 2008). Another study found that participants' attitudes towards the damage caused to environmental quality by the livestock industry were moderately pro-environmental, and their knowledge level on this subject was low. This example illustrates that when there is insufficient knowledge on a topic, attitudes towards the environment are also negative (Dopelt et al., 2019).

It appears that the residents of Ashkelon strongly understand the connection between the environment and human health (77%). Nearly all participants (94%) find preserving the environment's quality important. Additionally, many respondents mentioned feeling uncomfortable generating plastic and believing that human behavior impacts climate change. Furthermore, it can be learned that Ashkelon residents are interested in additional knowledge; 72% stated that they would consider environmental factors in their food choices if they had more knowledge on the subject. In terms of behavior, 79% use reusable bags, which is helpful for the environment, and most (81%) consume fruits and vegetables significantly. However, they do not consider switching to a vegetarian or vegan diet, indicating an anti-environmental behavior. In the study by Lea & Worsley (2008), examining the beliefs and behaviors of 223 consumers in Australia, over half of the participants agreed that environmental actions related to food are necessary to preserve the environment's quality. Nevertheless, most of them did not reduce their meat consumption.

In the current study, positive correlations were found between knowledge, attitudes, and behavior. The higher the level of knowledge, the more positive the attitudes and the more pro-environmental the behavior of the residents. These findings align with previous research that showed a link between acquiring knowledge through educational activities and increasing positive attitudes toward the environment (Dori & Tal, 2000). Furthermore, it was found that positive attitudes are crucial in shaping responsible environmental behavior and acquiring 'environmental literacy' (Rickinson, 2001). Other studies have reinforced this finding, suggesting the need for environmental knowledge to drive responsible environmental behavior, considering it a precursor to action (Kuhlemeier et al., 2010; Pugliese & Ray, 2011).

A study comparing students in developing and developed countries revealed that education is one of the most essential variables explaining high levels of concern and environmental behavior. It also showed that individuals with higher education levels possess higher environmental knowledge, which translates into pro-environmental behavior (María et al., 2013). Furthermore, the study found a positive relationship between attitudes and behavior, indicating that the more positive the attitudes, the more pro-environmental the behavior. It was also found that attitudes mediate the relationship between knowledge and behavior, reinforcing it. Similar to the current study in Israel and globally, research demonstrates a strong connection between attitudes and concern for climate change and environmental behavior. It also shows that positive attitudes and concern for climate change mediate the relationship between knowledge and environmental behavior.

A study conducted among students in the education system to assess environmental literacy, which includes knowledge, attitudes, and behavior, found that the participants reported a moderate level of knowledge about the impact of climate change, and their attitudes were positive to some extent, but they exhibited suboptimal environmental behavior. Additionally, positive correlations were found among variables, where attitudes mediate the relationship between knowledge and behavior. Moreover, the study showed that knowledge alone cannot reliably predict pro-environmental behavior (Dopelt et al., 2021). Researchers argue that attitudes are essential to catalyzing the change from the knowledge individuals hold to actual pro-environmental behavior (Milfont, 2012; Stevenson et al., 2019) and that nurturing and expanding individuals' knowledge in environmental matters leads to an improvement in positive attitudes toward this issue, creating responsible environmental behavior (Dopelt et al., 2019; Fang et al., 2018).

Additionally, clear and positive correlations were found between the accessibility of facilities and knowledge, attitudes, and behavior. Thus, the higher the accessibility of the facilities, the higher the level of knowledge, more positive attitudes, and more pro-environmental behavior. In a study that examined the relationship between waste usage, specifically plastic, and awareness and behaviors of 196 students in Korea during the COVID-19 pandemic, it was found that behavioral habits during the pandemic were influenced by the environment in which they study and their family habits (Choi et al., 2022). Furthermore, the researchers reinforced this finding and showed the need for environmental knowledge to promote responsible environmental behavior, identifying it as an early condition for action. According to the Ottawa Charter for Health Promotion (1986), one of the principles of health promotion action is creating a supportive environment. This means ensuring equal opportunities and resources that enable each individual to achieve their full health potential. In this study, we observed the significant importance of facility accessibility in contributing to pro-environmental behavior. Thus, the more accessible the facilities were, the more positive the behavior. Moreover, in a study conducted among students in the education system to assess environmental literacy, including knowledge, attitudes, and behavior, it was found that participants reported a low frequency of performing positive behaviors related mainly to a commitment to maintaining environmental quality and not engaging in economic savings, possibly due to a lack of accessibility (Sagi et al., 2008).

We also found that women, older adults, and individuals with higher education have a more positive attitude towards the environment. This can also be seen in a survey conducted in Israel by a social justice association (2015) that found a connection between education level, knowledge, and attitudes. Thus, the lower the education level, the more respondents claimed they did not consider environmental quality important. Similarly, a study conducted among students examining the environmental effects of the chemical and petrochemical industry and the relationship between knowledge, attitudes, and behavior found no differences between genders in knowledge level. Still, there were significant differences between genders in attitudes and behavior. Women had more positive attitudes and pro-environmental behavior than men (Dopelt et al., 2021). Wang et al. (2021) found a positive correlation between aging and pro-environmental behavior. At the individual level, older people tend to engage more in environmental behavior, and at the national level, residing in a country with a more significant proportion of older people encourages sustainable behavior.

Significant differences were found in knowledge, attitudes, and more positive behavior towards the environment among participants who rear animals compared to those who do not. These findings align with Dopelt et al. (2019). In general, it seems that attitudes towards animals also influence environmental perception. Pifer, Shimizu, & Pifer (1994) found a connection between concern for the environment and opposition to animal experiments and concern for their rights in eleven out of fifteen countries.

*4.1. Limitation*

The study is cross-sectional, and causality cannot be deduced from it. The research does not encompass all the factors related to environmental behavior. In addition, the survey was conducted only in the city of Ashkelon, and the response rate was quite low, impairing the study's generalizability.

**5. Conclusions**

The current study found that the residents of Ashkelon know about the relationship between human health and the environment. However, many respondents stated that they do not know how to recycle waste or are unfamiliar with the term "One Health." On the other hand, residents with higher levels of knowledge demonstrated more pro-environmental attitudes and behavior. Participants who rear animals also showed more knowledge, attitudes, and pro-environmental behavior. Therefore, it is important to recommend adopting pets and encouraging volunteering in the city's animal shelters. Furthermore, there is a need for comprehensive public education on environmental topics and individuals' contributions to environmental damage.

In the city of Ashkelon, there is a potential for reducing environmental damage by promoting green construction, clean energy production, implementing recycling stations, and educating the population to change consumption patterns and diets (Bonoli et al., 2021). Like many cities worldwide, the municipality of Ashkelon understands the need to participate in the global effort to address the climate crisis, hence conducting this survey.

Almost no knowledge was found among the residents of Ashkelon regarding the environmental effects of the plastic recycling issue. Most do not consider beyond vegetarian or vegan diets, indicating the need for campaigns and workshops to raise awareness on this subject, which are expected to be effective, especially since we found that knowledge is positively related to attitudes and behavior. Additionally, the research found that accessibility to facilities enhances pro-environmental behavior. Therefore, it is necessary to increase the distribution of recycling bins of all types throughout the city to encourage residents to preserve the environment. Furthermore, enhancing access to parks, fitness facilities, and shaded bike paths to create an environmentally supportive environment is recommended.

Regarding education, raising awareness of the relationship between human behavior, the environment, and health should be addressed through intervention programs and education to raise awareness. Moreover, increasing supervision and enforcement in this matter and transforming the city into an environmentally friendly one by investing in environmentally friendly equipment is essential. These can be achieved through collaboration among various city departments, residents, the Ashkelon Academic College, the Ministry of Environmental Protection, the Ministry of Health, environmental advocacy organizations, and other stakeholders. Expanding the survey to other cities in Israel is recommended to obtain comprehensive findings about the entire population of Israel.