**Knowledge, Attitudes, and Behavior Regarding Health and the Environment: A Cross-sectional Study in Israel**

**Abstract:**

Public health researchers are increasingly emphasizing an approach to the environment that encompasses social and spatial aspects of the environment that affect public health in cities. Cities can reduce environmental damage by promoting green construction and clean energy production, establishing recycling stations, and encouraging residents to change their consumption and eating patterns. Like many cities worldwide, Ashkelon, Israel, understands the need to participate in global efforts to address the climate crisis. To this end, we conducted a survey to examine the relationships between knowledge, attitudes, and behavior with regard to health and the environment among the residents of Ashkelon. A total of 322 participants from the city’s adult population completed an online questionnaire. Our findings show that Ashkelon residents understand the connection between the environment and human beings and have a positive attitude toward preserving the environment. However, not all of the city’s residents exhibit pro-environmental behavior, and not all pro-environmental 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. Participants who raise animals demonstrated more pro-environmental knowledge, attitudes, and behavior than those who do not raise animals. Strengthening positive attitudes to the environment is essential if individuals are to acquire knowledge and understand how to maintain a healthy environment. It is recommended to adopt pets and encourage volunteering with animals. There must be extensive public education in environmental issues, and the environment should be made more accessible, enabling a healthy lifestyle while preserving the environment.

**1. Introduction**

In the past two decades, public health researchers have emphasized the need to shift toward an approach to public health for urban areas that advocates a comprehensive understanding, encompassing the social and spatial aspects of living in a city that affect public health (Portney & Sansom, 2017). The importance of such an approach became evident during the COVID-19 pandemic, when 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 municipal authorities to enable residents to minimize environmental damage (Esmaeilian et al., 2018). Lifestyle choices and an increase in living standards can also contribute to environmental impact, for example the increasing consumption of meat; additionally, the increased availability of cheap clothing, produced in the East then bought in Israel and discarded after a season, generates vast quantities of waste (Dopelt et al., 2019). Cities are hubs of human activity associated with energy consumption, resource use, and pollution. Therefore, cities are responsible for a large proportion of greenhouse gas emissions (Choi et al., 2022).

Sustainable cities are “green” cities that aim to reduce their environmental impact globally and promote sustainable consumption and production patterns tailored to the existing conditions within a country, while considering cultural, social, and geographical aspects. City residents must be committed to the common goal and strive to form new habits that are less harmful to the environment. Therefore, there is a need for agreement and collaboration among city residents in a range of areas, including waste recycling and reduction, the use of renewable energy, encouragement of local purchasing, reduction in transportation use, increased green spaces, and raising awareness among the population (Winter, 2018).

In Israel, there is a national program, “Efsharibari” (meaning “can be healthy”), which aims to promote health and enable the integration of good nutrition, a healthy lifestyle, and physical activity. The program involves governmental bodies, municipal authorities, the business sector, and volunteer organizations (Baron-Epel et al., 2020). It was founded based on the government’s decision in 2011 to implement a program for an active lifestyle, following the recommendations of the World Health Organization. Many cities in Israel, including Ashkelon, have joined the “Healthy and Sustainable Cities” network as part of the Efsharibari program.

Human activities have caused considerable damage to the environment (NASA, 2019). There is a consensus among climate researchers that increased atmospheric carbon dioxide levels have been caused by human activity (Dockrill, 2019). In recent years, various regulations have been established in an attempt to preserve environmental quality, including approaches to minimize human impact on the environment by employing different and innovative technologies (Hörcher & Graham, 2020). Sustainable nutrition initiatives can assist people in developing environmental values and having a stronger desire to preserve 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).

Dopelt and colleagues (2019) surveyed 361 students in Israel about their knowledge, behavior, and attitudes regarding the environmental impact caused by the livestock industry. Their findings showed that the students were unaware that the food they consumed has an environmental impact, affecting animals, and emphasize the importance of environmental understanding and knowledge to effect behavioral change (Dopelt et al., 2019). Another study, involving 196 students in Korea, examined the relationship between waste use, mainly plastic, and the students’ awareness and behavior. The findings indicated 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.

Various studies have found that people hold misconceptions about the long-term effects of climate change and still do not fully understand the need to take personal responsibility and the potential impact of individuals (Wachholz et al., 2014; Özdem-Yilmaz et al., 2014). However, some studies around the world have shown a strong correlation between attitudes toward and concern about climate change and environmental behavior; some 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).

Extreme weather events linked to climate change, including storms, heat waves, and extreme rainfall events, can lead to destructive outcomes in urban areas and cause extensive damage to cities, threatening their inhabitants. Coastal cities such as Ashkelon are particularly vulnerable to rising sea levels, storms, and floods.

Cities have the potential to reduce environmental damage by promoting green construction, producing clean energy, increasing the use of recycling bins, and educating the population to change their consumption and eating patterns (Bonoli et al., 2021). In common with many cities worldwide, the municipality of Ashkelon understands the need to participate in the global effort to address the climate crisis. Therefore, we conducted research to determine whether there is a connection between knowledge, attitudes, and behavior regarding health and the environment among the residents of Ashkelon, Israel, and subsequently develop intervention plans based on the findings. No similar survey has ever been conducted in the city of Ashkelon.

**2. Materials and Methods**

*2.1. Participants and Procedure*

This 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 aged less than 18 years were asked not to respond to the questionnaire. An online questionnaire was programmed using Qualtrics survey software (Qualtrics, Provo, UT, USA). On 13 March 2023, a link to the questionnaire was distributed on social networks (neighborhood WhatsApp and Facebook groups). One 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, giving a response rate of 85%. At the beginning of the questionnaire, the purpose of the study was explained. Completing the questionnaire constituted informed consent to participate in the study. None of the questions were defined as mandatory.

*2.2. Research Tool*

An online, closed, anonymous, self-reporting questionnaire was used. The questionnaire was based on a literature review and various similar questionnaires (Dopelt et al., 2019; Dopelt et al., 2021; Choi et al., 2022; Kumar et al., 2021). To validate the questionnaire, it was first completed by eight staff members at Ashkelon Academic College who did not live in the city of Ashkelon. Five questions were corrected based on written comments from these individuals. The questionnaire comprised six parts, as follows:

1. Demographic data - 11 questions regarding participants’ gender, age, marital status, number of people in their household, number of children aged less than 18 years, religiosity, education, country of birth, dietary habits, socioeconomic status, and neighborhood of residence.
2. Attitudes - the questionnaire comprised ten statements. Participants were asked to indicate their level of agreement with each statement on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The variable was constructed by calculating the mean for each participant, after reversing the scales for statements 3 and 9. The mean ranged from 1-5, with a higher score indicating a more positive attitude toward the environment. The internal consistency of the study was α = 0.70.
3. Knowledge - the questionnaire comprised ten statements. Participants were asked to indicate their level of agreement with each statement on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The variable was constructed by calculating the mean for each participant. The mean ranged 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 comprised ten statements. Participants were asked to indicate their level of agreement with each statement on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The variable was constructed by calculating the mean for each participant, after reversing the scale for statement 6. The mean ranged 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 beneficial to the environment or public health (hereafter referred to as “facilities”) - participants were asked to indicate whether the following facilities were available near their residence: clothing recycling station, battery recycling station, paper recycling bin, plastic and glass recycling bins, walking paths/trails, parks and playgrounds, and fitness facilities. The variable was constructed by counting the positive responses. The variable range was 0-7, with a higher score indicating accessibility to more facilities near the participant’s residence.
6. Participants were also 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). 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 less than 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 defined themselves as “omnivores” (88%), and 60% rear/reared an animal. Participants’ ages ranged from 18 to 83 years, with the average age being 41.48±13.74. Participants’ characteristics are shown in Table 1.

**Table 1.** Participants’ characteristics.

|  |  |  |
| --- | --- | --- |
| **Characteristic** | ***n*** | **%** |
| Male | 69 | 21 |
| Female | 253 | 79 |
| Marital status:Married, living with a spouse | 242 | 75 |
| Single | 48 | 15 |
| Divorced/separated/widowed | 32 | 10 |
| Number of people living in the household:Living alone | 30 | 9 |
| 2 people | 87 | 27 |
| 3-4 people | 105 | 33 |
| 4 or more people | 100 | 31 |
| Have children under the age of 18 years | 173 | 54 |
| Level of religiosity:SecularTraditionalReligious | 1828554 | 572617 |
| Level of education:High schoolVocational high schoolAcademic | 5791173 | 182854 |
| Nutrition:OmnivoreVegetarian/vegan  | 28537 | 8812 |
| 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 in Table 2. The categories were combined as follows: responses 1 and 2 were combined into the category “weakly agree,” response 3 remained “moderately agree,” and responses 4 and 5 were integrated into the category “strongly agree.”

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Statement** | **Weakly agree (%)** | **Moderately agree (%)** | **Strongly agree (%)** | **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 is 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; SD, standard deviation.

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

To construct the attitudes variable, we calculated the mean response of each participant with the “I don’t know” option excluded and after reversing the scale for statements 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. The categories were combined as follows: responses 1 and 2 were integrated into the category “weakly agree,” response 3 remained “moderately agree,” and responses 4 and 5 were combined into the category “strongly agree.”

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Statement** | **Weakly agree (%)** | **Moderately agree (%)** | **Strongly agree (%)** | **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. The categories were combined as follows: responses 1 and 2 were combined into the category “weakly agree,” response 3 remained “moderately agree,” and responses 4 and 5 were integrated into the category “strongly agree.”

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Statement** | **Weakly agree (%)** | **Moderately agree (%)** | **Strongly agree (%)** | **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 statement 6. The mean value of the variable was 3.35 (SD = 0.59).

*3.5. Accessibility of facilities near participants’ place of residence*

The participants were asked about the proximity to their residence of seven types of facilities. Table 5 shows the percentages of respondents who stated that the given facility is available near their home.

**Table 5**. Accessibility of facilities near to participants’ place of residence.

|  |  |  |
| --- | --- | --- |
| **Statement** |  **Accessible****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 |
| Parks and amusement parks | 280 | 87 |
| Fitness facilities | 159 | 49 |

To construct the variable for the accessibility of facilities to participants’ place of residence, we counted the positive responses from each participant. The variable ranged from 3 to 7, with an average of 4.13 (SD=1.59).

*3.5. Relationships between the variables*

Significant, positive, and strong relationships were found between participants’ level of knowledge and their attitudes and behavior (rp=0.31, p<0.001; rp=0.40, p<0.001, respectively), that is, the higher a participant’s level of knowledge, the more positive their attitude and the more pro-environmental their behavior. Similarly, a significant, positive, and strong relationship was found between participants’ attitudes and their behavior (rp=0.45, p<0.001). The more positive a participant’s attitude, the more pro-environmental their behavior. Significant, positive relationships were also found between participants’ level of accessibility to facilities and their knowledge, attitudes, and behavior (rp=0.15, p<0.01; rp=0.25, p<0.001; rp=0.23, p<0.001, respectively). Thus, a greater level of accessibility to facilities was linked with greater knowledge, more positive attitudes, and behavior that is more pro-environmental.

*3.6. Additional findings*

* Gender - no significant differences were found between males and females in relation to their level of knowledge, behavior, and level of awareness regarding the accessibility of facilities near to their place of residence. However, significant differences were found between males and females concerning their attitudes (t(319)=4.33, p<0.001), with women having a more positive attitude compared with men (averages 3.95 vs. 3.65, respectively).
* Age - the older the participants, the more positive their attitudes (rp=0.15, p<0.01), the more pro-environmental their behavior (rp=0.20, p<0.001), and the greater their level of awareness regarding the accessibility of facilities near to their place of residence (rp=0.12, p<0.05).
* Number of people living in the household - the more people there were living in a household, 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 the level of knowledge (rs=0.28, p<0.001), and the more pro-environmental the behavior (rs=0.11, p<0.05).
* Animal rearing - significant differences were found between participants who rear animals or who had reared animals in the past and participants who did not have experience of rearing animals, both in terms of attitudes (t(317)=3.11, p<0.001), with the former having more positive attitudes (averages 3.37 vs. 3.15, respectively) and in terms of behavior (t(292)=1.67, p<0.05), with participants who had experience of rearing animals having 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 an open-ended question about how, in their opinion, the municipal authority could help to protect the environment. In total, 201 (62%) participants answered the question. More than half suggested the municipal authority should provide more recycling bins and that recycling bins for all types of material be made available for handling waste; 27% suggested the use of information and advertising campaigns to raise awareness; 25% wanted to increase supervision and enforcement; 13% wanted to have more parks and green neighborhoods; 5% would like to have more fitness facilities and shaded walking trails; 3% suggested increased investment in environmentally friendly equipment (such as solar-powered lanterns and traffic lights), and a similar percentage suggested the restoration of destroyed sites.

**5. Discussion**

Environmental issues have gained considerable attention in recent years, in large part due to climate change. Human activities have caused considerable damage to the environment, for example affecting the ozone layer (NASA, 2019). The city of Ashkelon joined the Efsharibari community in Israel and set a goal for the town to change toward a healthier lifestyle. Here, we investigated the relationship between knowledge, attitudes, and behavior in relation to health and the environment among the residents of Ashkelon.

Our survey results showed that the level of knowledge among the residents of Ashkelon regarding health and environmental issues is lacking (average 3.28 out of 5). However, the residents’ attitudes are relatively positive (average 3.89 out of 5), although their behavior is not satisfactory (average 3.35 out of 5). These findings align with those of earlier studies conducted elsewhere that have shown a high level of knowledge and positive attitudes among a significant proportion of the population but poor pro-environmental behavior (Yang et al., 2018; Lombardi & Sinatra, 2012). A study conducted among students in Israel to assess their 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 is worth noting that students identified with environmental values related to nature conservation to almost the same extent that they identified with values related to public health conservation (Sagi et al., 2008). Another study found that individuals’ attitudes toward the damage caused to the environment by the livestock industry were moderately pro-environmental, and that their level of knowledge about this subject was low. This example illustrates that when individuals have insufficient knowledge about a topic, their attitudes toward the environment can be negative (Dopelt et al., 2019).

It appears that the residents of Ashkelon strongly understood the connection between the environment and human health (77%). Nearly all of the participants (94%) felt that preserving the quality of the environment was important. Additionally, many respondents mentioned feeling uncomfortable about the quantity of plastic waste they generated and that they believed that human behavior impacts climate change. Furthermore, it was clear that Ashkelon residents were interested in gaining additional knowledge; 72% stated that they would consider environmental factors in their food choices if they had more knowledge about the subject. In terms of behavior, 79% said they used reusable bags, which is helpful for the environment, and most (81%) stated they regularly consume fruits and vegetables. However, they were not considering switching to a vegetarian or vegan diet, indicating an anti-environmental behavior. In a study conducted by Lea and Worsley (2008), which explored the beliefs and behaviors of 223 consumers in Australia, more than half of the participants agreed that environmental actions related to food are necessary to preserve the quality of the environment. 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 participants’ level of knowledge, the more positive their attitudes and the more pro-environmental their behavior. These findings align with those of previous research that showed a link between acquiring environmental knowledge through educational activities and increased positive attitudes toward the environment (Dori & Tal, 2000). Furthermore, it has been shown 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 increased environmental knowledge to drive responsible environmental behavior, considering it a precursor to action (Kuhlemeier et al., 2010; Pugliese & Ray, 2011).

A study that compared students in developing and developed countries revealed that education is one of the most important variables for explaining high levels of concern and pro-environmental behavior. It also showed that individuals with a higher level of education possess greater environmental knowledge, which translates into more pro-environmental behavior (María et al., 2013). Furthermore, that study found a positive relationship between attitudes and behavior, indicating that the more positive the attitude, the more pro-environmental the behavior. Attitudes were shown to mediate the relationship between knowledge and behavior, reinforcing this relationship. Findings from our current study in Israel and from research conducted globally have demonstrated a strong connection between attitudes to the environment, concern about climate change, and environmental behavior. This research has also shown that positive attitudes and concern about climate change mediate the relationship between environmental knowledge and environmental behavior.

A study conducted among students in the education system to assess their 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 that their attitudes to the environment were to some extent positive, 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). Some researchers have argued that attitudes are essential for catalyzing the change from the knowledge individuals possess to actual pro-environmental behavior (Milfont, 2012; Stevenson et al., 2019). Furthermore, nurturing and expanding individuals’ knowledge of environmental matters can lead to improvements in positive attitudes toward this issue, creating responsible environmental behavior (Dopelt et al., 2019; Fang et al., 2018).

Clear and positive correlations have also been found between peoples’ access to facilities and their knowledge, attitudes, and behavior. Thus, the greater the accessibility of such facilities, the higher the level of knowledge, the more positive people’s attitudes, and the more pro-environmental their behavior. In a study that examined the relationship between waste usage, specifically plastic, and the awareness and behaviors of 196 students in Korea during the COVID-19 pandemic, it was found that individuals’ behavioral habits during the pandemic were influenced by the environment in which they studied and their family habits (Choi et al., 2022). Furthermore, the researchers reinforced this finding and showed that environmental knowledge was necessary to promote responsible environmental behavior, identifying this knowledge as an early condition necessary for action. According to the Ottawa Charter for Health Promotion (1986), one of the principles needed for health promotion action is the creation of a supportive environment. This means ensuring equal opportunities and resources to enable each individual to achieve their full health potential. In our study, we observed the importance of access to facilities in contributing to pro-environmental behavior. The more accessible the facilities were, the more positive the behavior. Moreover, in a study conducted among students in the education system to assess their 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 found that women, older adults, and individuals with a higher level of education had a more positive attitude toward the environment. This was also seen in the results of a survey conducted in Israel by a social justice association (2015), which showed a connection between education level, knowledge, and attitudes. The lower the level of education of respondents, the more they claimed they did not consider environmental quality to be important. A study involving students examining the environmental effects of the chemical and petrochemical industries and the relationship between knowledge, attitudes, and behavior; no differences were found in knowledge levels between the genders. However, there were significant differences between the genders in terms of their attitudes and behavior, with women demonstrating 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 in more pro-environmental behavior than younger people, and at the national level, residing in a country with a large proportion of older people encourages sustainable behavior.

We found significant differences in knowledge, attitudes, and more positive behavior toward the environment among participants who reared animals compared with those who did not. These findings align with those of Dopelt et al. (2019). In general, it seems that attitudes toward animals influences individuals’ perceptions of the environment. Pifer, Shimizu, and Pifer (1994) found that in eleven out of fifteen countries, there was a connection between concern for the environment and opposition to animal experiments and concern for animal rights.

*4.1. Limitations*

This was a cross-sectional study, therefore no causality can be deduced from the findings. Also, this research did not encompass all factors related to environmental behavior. In addition, the survey was conducted among residents in the city of Ashkelon only, and the response rate was quite low, limiting the generalizability of our findings.

**5. Conclusions**

We found that the residents of Ashkelon were aware of the relationship between human health and the environment. However, many respondents stated that they did not know how to recycle waste or that they were 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 reared animals also showed more knowledge, pro-environmental attitudes, and pro-environmental behavior. Therefore, it is important to recommend adopting pets and encouraging individuals to volunteer in the city’s animal shelters. There is also a need for comprehensive public education on environmental topics and how individuals contribute to environmental damage.

In the city of Ashkelon, there is the potential for reducing environmental damage by promoting green construction and clean energy production, implementing recycling stations, and educating the population to change their 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 this survey was conducted.

The residents of Ashkelon had very limited knowledge regarding the environmental effects of failing to recycle plastic. Most people had not considered adopting a vegetarian or vegan diet, indicating the need for campaigns and workshops to raise awareness around this subject. We would expect such initiatives to be effective, especially as we found that knowledge was positively related to people’s environmental attitudes and behavior. Additionally, we found that accessibility to facilities can enhance pro-environmental behavior. Therefore, it will be necessary to increase the distribution of recycling bins of all types throughout the city, to encourage residents to help preserve the environment. Enhancing access to parks, fitness facilities, and shaded bike paths to create an environmentally supportive environment is also recommended.

Regarding education, raising awareness of the relationship between human behavior, the environment, and health should be addressed through intervention programs and education. Increasing supervision and enforcement in this matter and transforming Ashkelon into an environmentally friendly city by investing in environmentally friendly equipment is essential. These objectives can be achieved through collaboration among various city departments, residents, Ashkelon Academic College, the Ministry of Environmental Protection, the Ministry of Health, environmental advocacy organizations, and other stakeholders. We recommend conducting this survey in other cities in Israel, to obtain comprehensive data about the environmental knowledge, attitudes, and behaviors of all Israeli citizens.