

Article

Older Persons' Perceptions concerning Climate Activism and Pro-Environmental Behaviors: Results from a Qualitative Study of Diverse Population Groups of Older Israelis

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Abstract: Older people are under-represented in the climate change movement yet are highly susceptible to the negative effects of climate change. This study's objectives were to identify possible barriers faced by older persons to increase their pro-environmental behaviors and participation in the climate movement. Relying on in-depth qualitative interviews and focus groups with 50 older persons from four different population groups in Israel, we identified three themes. The first theme concerned assigning responsibility for the current climate situation. This theme addressed the question of who is seen as responsible for the current situation. The second theme covered actions taken by older persons to address the current situation. Finally, older persons view governments/municipalities, industry, and individuals as responsible for the changing climate, with a more traditional segment of the population also viewing God as responsible. Moreover, although governments were identified as important institutions with relevance to the current climate challenge, respondents mainly acknowledged the relevance of pro-environmental behaviors rather than climate change activism. In conclusion, the findings highlight the need to increase environmental activism among older persons. It is also important to increase the breadth of possible pro-environmental behaviors older persons can engage with.

Keywords: older persons; activism; pro-environmental; barriers; facilitators; responsibility; climate change



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1. Introduction

The changing climate poses a threat to our health and wellbeing [1,2]. Older persons are particularly susceptible to the negative effects of climate change [3,4]. This is partially attributed to premorbid medical, physical, and cognitive functioning, which make their ability to adapt to severe climate events extremely challenging and the health impacts of exposure to such events more severe [5]. However, social isolation and limited community support also contribute to older persons' susceptibility [6]. The limited acknowledgement in policy documents of older persons' unique circumstances during climate change extremes also contributes to the heightened susceptibility of older persons [7].

Given the understanding that the current climate change situation requires immediate action, there is growing awareness of and interest in the topic [8]. Research has classified environmental activism into two main categories [9]. The first reflects pro-environmental behaviors. These are private action/s that individuals engage in in response to the changing climate, such as recycling or limiting meat consumption. The second form requires collective efforts to engage in policy concerning climate change. Although both types are important and can contribute to adaptation and mitigation efforts concerning climate change, there is no doubt that change in policy is required to better mitigate and adapt

to the effects of climate change and that activities aimed at alleviating the current climate situation must be coordinated at the international, national, and local levels rather than only at the individual level via pro-environmental behaviors [10,11].

A meta-analysis has shown that differences in pro-environmental behaviors among people of different age groups are negligible. However, the analysis suggested that older persons are more likely to engage with nature, avoid environmental harm, and conserve natural resources [12]. Consistently, research concerning pro-environmental behaviors conducted in 31 countries has found that older persons are more likely to engage in such behaviors and that countries that have a larger percentage of older persons are more likely to behave sustainably [13]. Nevertheless, there is a gap between the generations, with younger generations being more likely to acknowledge that climate change is real and that it is caused by humans [14].

As for climate change activism, there is plenty of research to show that it is beneficial to older persons [15–18]. Research has shown that older persons who engage in climate change activism are healthier, engage in more physical activity, and report improved wellbeing and sense of generativity [15,19,20]. This also allows older persons to develop a sense of legacy [21]. The engagement of older persons in climate change activism is also beneficial for society at large because it provides older persons with the opportunity to share their knowledge and experiences, including traditional practices that can be extremely beneficial to all generations [22]. Climate change activism among older persons also offers an opportunity to foster intergenerational solidarity by bringing younger and older persons together to work towards a shared goal [22].

Despite the varied benefits associated with climate change activism, most older persons do not engage in it. In fact, climate activism is largely identified with the youth movement [23] and older persons' role in the climate change movement is less common [18,24] and less acknowledged. A recent review of the literature has classified determinants of climate change activism into several categories including sociodemographic variables, attitudes, and habitual and contextual factors [25]. According to the review, people with higher levels of education are more likely to engage in climate activism [26]. As older persons often tend to be less educated compared to younger adults, this could possibly explain their reluctance to engage in climate activism. Older persons' somewhat more limited access to digital technology [27] might also account for their more limited involvement in the climate change movement.

Focusing on specific barriers faced by older persons, Pillemer and colleagues [16,24] identified several reasons for the limited engagement of older persons in the climate change movement [16,24]. One reason for limited engagement stems from reduced interest in and concern about climate change. Compared with younger people, older persons are less likely to report anxiety associated with the changing climate [28,29]. Older persons also might hold less accurate views about climate change and its contributors [30]. This has been supported by one study which found that compared with older persons, younger people were more likely to believe that climate change is a result of human (in)action [14].

Another barrier to the engagement of older persons in climate change activism is ageism, defined as stereotypes, prejudice, and discrimination towards people because of their age [31,32]. In the context of climate change, ageism has been directed towards both younger and older persons [22,33,34]. Nonetheless, a review of climate change activists' communication has identified a general tendency to blame older persons for their (in)action over the years, which has contributed to the current climate situation [35,36]. This may serve as a barrier preventing older persons from taking an active role in the climate change movement. Moreover, because the climate change movement is largely associated with youth [37], older persons might be less likely to identify with its goals and actions.

As the world population continues to age, it is particularly important to identify possible barriers faced by older persons to increase their pro-environmental behaviors and participation in the climate movement. The present study aims to examine older persons' explanations concerning the climate change situation and whom they perceive as being

responsible for the current situation. We also examine what actions older persons are willing and able to take to affect the current situation. This study is important given the fact that climate change disproportionately affects older persons [38], yet they are less likely to engage in public activities to improve adaptation and mitigation efforts [18]. This study is innovative because of its focus on older persons' perspective concerning climate change activism and pro-environmental behaviors, while paying attention to possible similarities and differences between ethnic groups.

2. Methods

The study was inspired by past research on older persons in the context of climate change [22,33]. Both the interview guide and recruitment methods were guided by past research on older persons, with a particular attention paid to their perceived role in the climate change movement and their engagement in pro-environmental behaviors [15].

2.1. Participants

The sample was recruited between April 2022 and September 2022. Qualified participants were people over the age of 60 who belong to one of the following groups: Veteran Israeli Jews (were either born in Israel or immigrated to Israel more than 60 years ago), Israeli Arabs, Ethiopian Jews (the immigration wave of 1980–1990), and immigrants from the former Soviet Union (FSU; the immigration wave of 1990–2000). It is important to note that this is a non-representative sample that was purposively selected [39] with the goal of obtaining an in-depth understanding of older Israelis of different population groups.

Overall, 50 people were interviewed: 15 veteran Israeli Jews (mean age = 75.66, SD = 6.12; 87% women), 12 Israeli Arabs (mean age = 67.25, SD = 2.17; 66% women), 13 Immigrants from the FSU (mean age = 73.30, SD = 7.36; 61.5% woman), and 10 immigrants from Ethiopia (mean age = 68.10, SD = 8.65; 80% women). See Table 1 for details.

Table 1. Socio-demographic characteristics of the sample (n = 50).

	Jewish (n = 15)	Arabs (n = 12)	Immigrants from FSU (n = 13)	Ethiopian Immigrants (n = 10)
Mean Age (S.D)	75.66 (6.12)	67.25 (2.17)	73.30 (7.36)	68.10 (8.65)
Gender (%)				
Male	13.3	33.3	38.5	20
Female	86.7	66.7	61.5	80
Mean number of years of education (S.D)	9.20 (3.21)	9.58 (3.4)	15.15 (2.33)	5.20 (5.47)
Marital status (%)				
Married	53.3	100	23.1	60
Not married	46.7	0	76.9	40
Mean number of children (S.D)	3.26 (1.16)	5.33 (1.07)	2.00 (0.07)	5.80 (2.04)
Economic situation (%)				
Below average	6.7	33.3	0	80
Average	60	66.7	84.6	10
Above average	33.3	0	15.4	10
Health condition (%)				
Below average	26.7	50	13.3	50
Average	40	0	80	20
Above average	33.3	50	13.3	30

2.2. Interview Guide

The research team developed the interview guide in Hebrew and then translated it into Arabic, Russian, and Amharic by native speakers. We aimed to maintain the meaning rather than the literal translation of each question. The interview guide started with questions about participants' experiences, such as *"tell me about the changing climate over time or between your country of origin and Israel"*, followed by detailed questions about participants' perceptions regarding global climate change: *"Have you experienced the phenomenon of climate change and its consequences? What are the effects of the changing climate on your daily life?"* Participants also were queried about feelings of longing for the climate or nature of the past: *"What climate, nature and environment phenomena do you miss the most?"*

2.3. Procedure

The study was funded by a grant from the Israel Science Foundation (ISF 217/20). The study was approved by the ethics committee of the PI's university and all respondents signed an informed consent document prior to participating in this study. We recorded and transcribed all focus group discussions and in-person interviews. Interviews that were not conducted in Hebrew were translated by a native speaker into Hebrew. We used different recruitment and interviewing strategies for each population group given their unique characteristics. The different recruitment methods were also guided by the personal and professional connections of the researchers. We specifically ensured that minority group members are interviewed by interviewers from the same community in their language of preference. All respondents received information about the purpose of the study (e.g., to better understand older persons' perceptions of climate change) and were instructed that they can leave the study at any point.

Veteran Israeli Jews were recruited from two adult day-care centers in the Central and Northern parts of Israel via the assistance of professionals in these centers. Two focus groups ($n_1 = 7$; $n_2 = 8$) were held by an experienced moderator in Hebrew. Each group lasted for about 1 h.

Arabs and Immigrants from the FSU were recruited through social and professional connections of two researchers (HAG and NU) as well as snowball sampling. The Arab participants were from the central and northern parts of Israel. The interviews with them were conducted via Zoom in Arabic and lasted approximately 20–40 min due to geographic distance from the interviewer. Interviews with Immigrants from the FSU were conducted in-person in Russian at the participants' homes in the northern part of Israel. Their average length was 50 min.

Immigrants from Ethiopia were recruited from an adult day-care center and a Synagogue community in a small city in the northern part of Israel relying on the personal connections of one of the researchers (ShE). One focus group ($n = 5$) was conducted in Amharic in a quiet place in an adult day-care center and lasted one hour and 15 min. In addition, 5 in-person interviews were conducted in participants' homes and lasted on average 30 min.

2.4. Analysis

Thematic analysis was conducted following several iterative processes of reading and re-reading the interviews [40]. We started by becoming familiar with the raw interviews through reading and re-reading of each interview and constant generation of initial thoughts concerning the main themes. Next, a more thorough categorization into descriptive thematic categories followed. After the completion of this stage, we re-read all interviews and categories while grouping them into interpretative thematic categories. We followed these stages separately for each population group. Next, we looked at similarities and differences within and across the four groups using constant comparisons and going back and forth between categories and population groups. Last, we decided on a common storyline which consists of the main thematic categories [41]. This resulted in a decision to focus on older people's pro-environmental behaviors and activism as an overarching theme.

As a result, we omitted some of the themes identified in the analysis, such as nostalgic memories concerning past climate experiences or ways older people cope with climate change. These themes are discussed in a different paper.

We relied on a thick description of direct quotes from the text in order to improve the trustworthiness of the findings and ensure the interpretability of our analysis [42]. An audit trail, which followed all stages of analysis, was kept to ensure appropriate documentation [43]. In addition, two readers (LA, NU) conducted the analysis separately categorizing and recategorizing the data. The decision to present the findings in the present manner was reached through a consensus.

3. Findings

In our analysis, we identified three themes. Table 2 presents the distribution of the main themes across the four population groups. The first theme concerned assigning responsibility for the current situation. This theme addressed the question of who is seen as being responsible for the current situation. The second theme covered actions taken by older persons to address the current situation. The theme addresses both private and public actions related to climate change mitigation and adaptation efforts. Finally, older persons provided a thoughtful discussion of ways to alleviate the current climate situation. The three themes were selected because they provide a comprehensive perspective on older persons' inclination to engage in pro-environmental behaviors and/or public activism. For the most part, our analysis focused on commonalities across population groups rather than on differences. However, when differences arose, they were noted in the text.

Table 2. Main themes reported by study participants across the four population groups.

Theme	Categories	Veteran Israeli Jews n = 15	Israeli Arabs n = 12	Immigrants from the Former Soviet Union n = 13	Immigrants from Ethiopia n = 10
1. Assigning responsibility for the current climate situation ("who is responsible?")	Government/municipality/corporate responsibility	8	7	12	0
	The responsibility of individuals (In general)	9	2	7	0
	God's responsibility	1	4	0	10
	The responsibility is in our hands (Personal responsibility)	5	2	4	0
2. Actions taken by older persons to address the current situation ("what am I doing")	Recycling and not using disposable tableware	6	3	8	1
	Cleaning the environment	3	5	7	0
	Gardening and planting trees	0	2	4	0
	Public act against the current climate situation	0	1	0	0
3. Ways to alleviate the current climate situation ("what should be done next?")	Raising awareness and education	6	8	9	0

3.1. Who Is Responsible? Assigning Responsibility for the Current Climate Situation?

In response to this query, respondents offered several different options. Although, for the most part, many assigned the responsibility to more than one stakeholder, we identified four common explanations to account for the current climate situation. The most common responses attributed the responsibility to the current climate situation to governments/municipalities, corporations, and individuals. Israeli Arabs and Ethiopian immigrants also assigned the responsibility for the current climate situation to God. In addition, several respondents assigned the responsibility for the current climate situation to themselves. However, this was done mainly in conjunction with blaming other stakeholders for the current situation.

3.1.1. The Responsibility of Governments/Municipalities and Corporations

The following quote by a veteran Israeli assigns the blame to other citizens who lack manners, but at the same time also views the mayor of the city as being responsible because of his failure to ensure the city's cleanliness: *"The mayor is stupid, and everything is dirty. People have no manners. They toss away, curse, lots of gangsters, drunk people."* (Arnon, age 72).

In a different focus group of veteran Israelis, a participant stated: *"I believe that the government receives reports (about pollution) and according to the reports should make decisions."* (Yael, age 74). This comment was challenged by Malka (Veteran Israeli, age 80), who stated: *"but they (politicians) are not doing that."* Hence, the two participants view the government as being responsible with the latter participant also expressing a strong dissatisfaction with the current situation.

Farid (Israeli Arab, age 65) expressed a deterministic viewpoint, which excuses his limited action by stressing instead the important role of governments and corporates:

I think that there is not much we can do. This is something that is not in our hands. This is something that is related to the country. The main reason for climate change is the industry in the country. The policy and habits of the country. For instance, if public transportation were adequate, we wouldn't have had that many cars on the road and this would have improved the situation.

Mark (FSU immigrant, age 65) expressed as well his frustration with the current political situation. According to him, the main problem is the limited ability of politicians to ensure a safe and healthy climate to all:

If in the government, we had politicians who were professionals, we would not have had this discussion. If we had professionals in the government, they wouldn't have allowed a polluting factory to exist. Everyone would have needed a permission. 'Do you want to work? Ok, you will build it (a factory), but we will monitor you. If you violate the regulations, we will close the factory and fine you with huge fines.' Who would have built such a factory that kills the country?

Assigning the responsibility for the current situation to the government resulted in a sense of powerlessness among some respondents; Vera (FSU immigrant, age 65): *"a person really cannot do anything. I cannot close the refinery that I am suffocated by. I cannot close it. It emits gas, so it emits. But this is of course at the governmental level."*

3.1.2. The Responsibility of Individuals (In General)

A veteran Israeli Jew complained about dog's poop as a problem which is human-made: *"All the pavements are covered with poop. You go downstairs and you see by the entrance full of dogs' poop."* (Liora, age 75). Hence, in her response she assigns the problem of pollution—which she views as being directly related to the changing climate—to other individuals rather than to institutions.

In response to a query about awareness to climate change, Nihaya (Israeli Arab, age 67) identified people in the community as being responsible for the current climate situation. In contrast to Farid (Israeli Arab, age 65) who discussed the government's responsibility for the reliance on private transportation, Nihaya also discussed the problems associated

with private transportation, yet assigned the responsibility to people in her community who prefer their own personal comfort to society's welfare:

I have heard about climate change and people are responsible. There is lots of garbage, lots of fire. It really hurts the ozone layer. It is true that in the past, we didn't have gas and used to cook on wood. But still the situation is different from today. Nowadays, we have smoke coming out of all the cars. In the past, every 10th family had a car. Now, the number of cars equals the number of people in the house.

Likewise, Boris (age 76), an immigrant from the FSU, complained about the human damage to the environment. Accordingly, norms of disregard result in people polluting their own living environment:

It is all a matter of culture. Because I have a dog, when you walk around you understand. There is poop everywhere and people do not clean their surroundings. This is why others, even me, who owns a dog, are very uncomfortable.

3.1.3. The Responsibility of God

This response was provided primarily by Israeli Arabs and by Ethiopian immigrants. Hence, this attribute is shared by more traditional religious respondents. This response represents a tendency to rely on religious beliefs to explain life events:

One of the signs of the day of the reckoning is that in Saudi Arabia there is more rain than usual. It is very important in Islam. I mean, the changes in climate and weather are part of the signs that the final judgement is approaching. I will give you more examples, in the past it used to rain in the north of the country and a little bit of rain in the south. Nowadays it rains in the south more than in our area. The situation has flipped. Only God has control over things. I believe that all these changes are a sign that the final judgement is approaching. There are small changes and big changes. Changes in weather represent a small change. (Ibtisam, age 66)

An Ethiopian immigrant stated:

I sometimes say, maybe there are too many people in the world? Maybe God says there are too many and there is a need to extinguish some? That's what comes to my mind sometimes. There was 'be fruitful and multiply' and now there is a need to extinguish. (Tega, age 67)

This statement was supported by other participants in the focus group: *"it is because God is punishing those who are not observant. People are moving away from belief."* A different participant concluded: *"Everything that is related to the weather is due to the anger of God on people."* Important to note that Ethiopian immigrants endorsed only God's responsibility to the changing climate and did not explicitly identify other entities as being responsible.

3.1.4. The Responsibility Is in Our Hands (Personal Responsibility)

A few respondents accepted their own personal responsibility to the current climate situation. Yet, most of the time, this was discussed in the context of others such as governments, corporations, and/or other individuals who are responsible as well.

A veteran Israeli stated: *"it is a personal responsibility of each and every one of us and a governmental responsibility. The government needs to run these things."* (Rivka, age 75). Hence, even though she started out by stressing personal responsibility, she concluded by assigning the overall responsibility to the government.

Ranin (Israeli Arab, age 68) stated that the responsibility is shared by all, yet she too can act in her own environment to improve the situation:

Each and every one of us is responsible for the environment. The environment is in our own hands. We must protect it. The earth is for everyone, it does not belong to a single country or person. All countries, especially those that have advanced industry must find a way to organize industry not to pollute . . . Again, I reiterate, we all have the

responsibility to protect the environment. Governments and industrial nations should find a solution for the pollution by industry so that they won't hurt the environment. Everyone who has a factory should take a responsibility and find a solution to the damage caused to the environment. This is the only way we can save the earth. The responsibility is shared by all of us.

Likewise, Mark (age 65), an immigrant from the FSU, discussed a personal responsibility, while mentioning the shared responsibility of others:

I think that everyone is responsible other than children who are now in kindergarten or at school. Little children up until the age of 12, before they grow older. All others are to blame, even teenagers. It doesn't matter, everyone is responsible. There is no need to name people. I too am responsible. I do not consider myself as better than others. I used to barbeque outdoors, and this is not great ecologically. First, I polluted the air and second, I am to blame for feeding my kids in that shit. So, am I not to blame? Everyone should feel responsible.

3.2. What am I Doing? Actions Are Taken by Older Persons to Address the Current Situation

Most respondents identified personal activities they routinely engage in to improve the current state of the environment. Respondents mentioned recycling, keeping the environment clean, and not using disposable tableware as their main contribution, yet others also mentioned gardening and planting trees. Only one respondent mentioned a wish to actively contribute to the climate change movement by taking a public stand in the context of climate change activism. Hence, to the most part, respondents focused on pro-environmental behaviors, which are individual-based, rather than on public activism.

A veteran Israeli Jew stated that she is taking care of her environment:

If I see something disturbing even on my way, a box for instance, I tell myself, someone can fall, I can trip as well. I always pick it up. This is what I learned from my father, bless his soul. I would go with him as a child and watch him pick up a banana peel from the pavement. (Moriya, age 70)

Likewise, Haled (age 66), an Israeli Arab, discussed her personal efforts to keep the environment clean and safe: *"I try to keep the environment clean. I try to separate garbage to assist in the recycling process. In general, there is limited awareness in our society about the importance of recycling."*

This response was similar to the one provided by Rita (age 75), an immigrant from the FSU, who discussed her contribution by noting her efforts to keep the environment clean and tidy, in contrast to others who litter the environment:

When I hurry to work in the morning, I still take the garbage with me and put it in the bin. A different person will not do that, will throw away the garbage next to the building. This is purely a matter of education.

Refraining from using disposable tableware was also identified as an attempt to contribute to the current efforts to mitigate climate change. However, the following account of a veteran Israeli Jew shows that she is engaged in pro-environmental behaviors primarily because of her grandchildren, rather than because of her own value system:

I for instance, my grandchildren do not agree that I use plastic tools (disposable tableware) at home. In my house there is no coke, no juice, no cookies, nothing. They come, like the Ashkenazim (European Jews), I put a bottle of water and soda for them. I have tea, coffee and that's it. (Lea, age 75)

In contrast, Alex (age 85), an immigrant from the FSU stated: *"we never use plastic (disposable tableware). They say it is very convenient. After the meal, you collect everything with the cover and throw it in the bin. 'Ecological!'"* His account suggests the internalization of pro-environmental values which have lead to engagement in pro-environmental behaviors.

Likewise, Asmalesh (age 62), an Ethiopian immigrant, also stated: *“Ever since I heard that plastic is not good, I started sorting out because if it is sorted, it is possible to recycle.”* Hence, she identified her contribution to the environment in the form of recycling behaviors.

Taking an active stand through planting was also discussed by several respondents as a means to improve the current climate situation: *“I miss the forest (we had in Russia), but I planted for myself, the trees that I missed.”* (Mark, age 65, an immigrant from the FSU).

An Israeli Arab, Ibtisam (age 66), also discusses how—in addition to keeping her environment clean and tidy—she also planted trees and flowers:

I keep my environment clean. I clean my house and my street. I really like tidiness. I like planting trees and flowers. This is a very good way to keep the environment. I clean the street because no one cleans other than myself. They do not clean. My neighbors should be cleaning as well.

The only one of all interviewees from all population groups to express an interest in taking a public act against the current climate situation was Ibrahim (age 68), an Israeli Arab: *“I try to increase the awareness of people of the environment. I wish there were pro-environmental NGOs in our society. I would have joined such an organization to increase the awareness of people around.”* Even though this person was the only one to express a true interest in climate activism, he too did not engage in the climate change movement.

3.3. What should Be Done Next? Ways to Alleviate the Current Climate Situation

Raising awareness and educating the public were identified as key strategies to improve the climate change situation. As already noted, with the exception of a single respondent, none identified the climate change movement as an option to support climate change adaptation and mitigation efforts.

Neta (age 79), an Israeli veteran stated: *“If you do not come from an organized home and learn and watch what your mama is doing. The house is the mirror of the kids. Not only the school and pre-school.”* Hence, she stresses the importance of education, but believes that such education should be provided within the family.

Suha (age 70), an Israeli Arab, also discussed the importance of raising awareness to instigate climate change mitigation and adaptation efforts:

The Arab society has no awareness of the topic of climate change. It is important to raise this issue. I think it is most important to start at school. Educate children about the topic stress the ramifications of the topic. It is good to give talks about the topic also to the rest of the population. To increase awareness so that people will start taking care of the environment.

Inessa (age 66), an immigrant from the FSU, provided a similar message: *“You can tell a person, ‘Look, your dog just pooped.’ And if the person has no manners, and you tell him, he will condemn you and you will be blamed. It all starts in the culture in education.”* Inessa expressed frustration and a sense of helplessness; yet, at the same time, she suggested that education and awareness can improve the current situation.

Raising awareness and education also were identified by Mark (age 65), an immigrant from the FSU, as tools to increase personal responsibility for the current state of the climate and the environment:

There is not enough attention. People have become used to being Israelis. ‘If it is not mine, I am not touching it.’ Here most of the people are like that. ‘If it is not mine, I don’t care.’ Maybe there is someone like me, a stupid person like me who still cares about something. No one is taking personal responsibility about anything here.

4. Discussion

The present study evaluated the accounts of older persons from four different population groups in Israel to better understand incentives and barriers to pro-environmental behaviors and climate change activism. Given the higher prevalence of older persons worldwide, it is essential to ensure their contribution and involvement in adaptation and

mitigation efforts concerning climate change. This is particularly important especially because of a divisive discourse which views older persons as responsible for the current climate change situation and as failing to act to improve the situation [33,44]. Our findings are divided into three major themes, reflecting the responsibility assigned for the current climate change situation, actual behaviors older persons engage in as part of their efforts to mitigate and/or adapt to the changing climate, and future directions to improve mitigation and adaptation efforts.

We found a general tendency to assign the responsibility for the current climate situation either to institutions—including governments, municipal bodies, or industry—or to individuals. Both institutions and individuals were viewed as polluting the environment in various ways, thus directly contributing to the changing climate. When responsibility was self-directed, it was usually accompanied by the blaming of additional entities such as institutions and other individuals. This finding is consistent with past research, which has summarized the situation as such: “We are all responsible, but others are more responsible than us” (p. 2403) [45]. Consistent with the present study, that study as well found that individual responsibility was not commonly assigned [45]. The present findings further highlight the tendency towards a blame game, which assigns the responsibility for the climate situations to different entities, and the limited inclination to take personal responsibility for the current climate situation [46].

Unlike research conducted in Finland [45], two population groups that participated in the present study also endorsed God and God’s will as being responsible for the current climate situation. These population groups (Israeli Arabs and Ethiopian immigrants) are characterized as more traditional in their values and in their connection to the land and nature. This is consistent with past research conducted in Bangladesh, which has found that a small portion of respondents attribute the changing climate to a punishment from God [47]. However, to date, not much has been written about religion and the belief in God and climate change. A study reviewing the literature on Muslims and climate change has concluded that a small section of Muslim environmentalists promote climate change issues [48]. A different study, conducted in Cusco, Peru, found that narratives concerning the reasons for climate change are largely influenced by religion, with Catholic and Evangelical religious traditions proposing different meanings of the changing climate [49]. Hence, clearly, the attribution of the changing climate to God’s will is common in some living habits and religious sectors.

Most respondents engaged in pro-environmental behaviors to some degree. Recycling and keeping the environment clean were identified most frequently, followed by attempts to ensure a green environment. Only a single respondent reported a wish to become part of the climate change movement, but this person as well was not actively engaged in the movement. This finding is consistent with past research which has shown that people are more likely to engage in private pro-environmental acts as individuals rather than in public activism as a collective group, and that this discrepancy is particularly notable in the case of older persons [9,13,18]. This is unfortunate given the need for civil society to engage in climate change activism as a collective group in order to make a true impact on policy.

Consistent with the tendency found in this study towards pro-environmental behaviors, rather than climate change activism, respondents emphasized education and awareness as the main tools to fight climate change. Indeed, research has shown that greater awareness is associated with higher levels of pro-environmental behaviors [50,51]. There is also a substantial body of research on the effectiveness of educational interventions in instigating pro-environmental behaviors [52]. Nonetheless, there is still a general understanding that awareness of climate change issues is not enough to instigate behavioral change [52]. Consistently, the present study has shown that awareness of climate change is not necessarily enough. Specifically, most pro-environmental behaviors that respondents engaged in concerned recycling and keeping the environment clean. Although there is no doubt that these behaviors are essential, other behaviors such as reduced meat consumption, reduced flights, etc., have not been mentioned. Moreover, only one of the respondents

acknowledged the need for active engagement in the climate change movement. Hence, overall, our findings actually support the need for further education and raising of awareness which are more targeted towards environmental activism. Finally, an unexplored option possibly highlighted by the findings is the reliance on religious leaders to increase awareness of and motivation to engage in climate change activism among more traditional communities. Such an intervention requires working closely with religious leaders and ensuring their commitment to the climate movement.

This study is not without limitations. First, it is important to note that the qualitative nature of the study allows for subjectivity in responses and their interpretation. Therefore, two reviewers coded the interview data. Second, as this study relied on a qualitative methodology, we aimed to gain a deep understanding of the findings rather than obtain a representative sample of all four population groups. Third, as noted in the Methods section, we relied on different recruitment methods to recruit each of the four population groups. This likely has introduced additional bias into our findings. Despite these challenges, the study has several innovative aspects that should be stressed. First, our study gives a direct voice to older persons by directly asking them for their experiences and perceptions. Second, we specifically aimed to reach out to different population groups, including minority groups which are under-represented in research. This methodology ensures that even marginal groups in the population can share their experiences and thoughts. Our findings are important as they provide a detailed understanding into the views of older persons of different population groups concerning the main causes of climate change, their own response to the changing climate, and ways of addressing the changing climate. Although older persons view governments/municipalities, industry, and individuals as responsible for the changing climate, a more traditional segment of the population also views God as responsible. Moreover, although governments were identified as important institutions with relevance to the current climate challenge, respondents mainly acknowledged the relevance of pro-environmental behaviors rather than climate change activism. They also expressed the need for increased public awareness and knowledge with a focus on pro-environmental behaviors rather than on public activism. This, in fact, highlights the need to increase environmental activism among older persons, as the majority of respondents in our study have failed to even acknowledge this as a possible option. Not considering environmental activism as an option likely results in the limited involvement of older people in the climate change movement and in more limited opportunities to influence climate change policy in the long run. In addition, it is important to increase the breadth of possible pro-environmental behaviors older persons can engage in, as the present study has shown that the current repertoire identified by participants is quite limited, albeit adamantly endorsed.

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