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Perceived Genetic Risk and Dietary Prevention Beliefs Among Offspring of People Living with Dementia: A Mixed-Methods Study Guided by the Health Belief Model

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Abstract

Background: Given the rising global prevalence of dementia and its complex etiology, involving genetic and environmental risk factors, the aim of the present exploratory study was to investigate how offspring of individuals with dementia perceive genetic risk and the role of diet in dementia prevention. Methods: A mixed-methods study was conducted in Greece. Overall, 118 offspring completed an online questionnaire assessing demographics, risk perceptions, and dietary beliefs and practices in dementia risk reduction. Additionally, 22 semi-structured interviews explored dietary beliefs, practices, and influencing factors using framework analysis. Results: Most participants (76.3%) recognized diet's role in dementia prevention, while 52.5% perceived offspring as having increased genetic risk; 40.7% reported making dietary changes to reduce disease risk. Healthcare professional consultation was the factor most strongly associated with dietary modification (OR = 26.61, 95% CI 7.47–94.76, $p < 0.001$). Qualitative findings showed that, while dementia was viewed as severe, personal susceptibility was often perceived as uncertain or distant. Key barriers, facilitators, and the role of self-efficacy in adopting healthier dietary practices were also explored. Conclusions: Our findings identify personalized dietary counselling and risk communication as priorities for evaluation in future intervention studies, aimed at supporting the implementation of dietary modifications and reducing the gap between knowledge and behavior in dementia risk reduction.

Keywords: dementia; mixed method; diet; genetic risk; preventive behavior; Health Belief Model

Academic Editor: Dalia El Khoury

Received: 27 June 2026
Revised: 17 August 2026
Accepted: 17 August 2026
Published: 21 August 2026

1. Introduction

Dementia or Major Neurocognitive Disorder (as defined in the Diagnostic and Statistical Manual of Mental Disorders, Fifth edition, 2013) [1,2] is a syndrome characterized

by significant cognitive decline in at least one or more of the following domains: learning and memory, attention and processing speed, executive functioning, language, visuospatial functioning, and social cognition [1]. Alongside cognitive dysfunction and neuropsychiatric symptoms, dementia leads to progressive difficulty with activities of daily living, such as managing finances and medications. The result is a loss of autonomy, a reduced capacity for independent living and an increasing reliance on long-term care and healthcare services, with a substantial impact on quality of life [1–3]. This highlights the need for improved diagnostic, preventive and therapeutic strategies [3]. According to the World Health Organization (WHO), almost 55 million people worldwide are currently living with dementia [4], while it is estimated that, by 2050, dementia cases will reach 152 million. Dementia, thus, arises as a major public health and socioeconomic issue [3].

The most common cause of dementia is Alzheimer's disease (AD), followed by vascular dementia, dementia with Lewy bodies, Parkinson's disease dementia, and frontotemporal dementia [5]. Although these conditions differ in their underlying neuropathology, the development and progression of dementia are influenced by a complex interplay of genetic and environmental factors [6,7].

Genetic factors contribute substantially to dementia risk, as demonstrated by the familial aggregation of dementia [8,9]. The most well-known genetic risk factor is the apolipoprotein E (APOE) gene. The APOE polymorphism is strongly associated with the risk of late-onset AD, while this variant appears to influence the risk of developing other types of dementia, such as vascular dementia, dementia with Lewy bodies, and frontotemporal dementia [10,11]. Single-gene mutations in genes such as APP, PSEN1, PSEN2, MAPT, GRN and C9orf72 are associated with early onset of various types of dementia, while most late-onset cases are polygenic, with multiple common genetic variants increasing the overall risk [12]. Importantly, this susceptibility is probabilistic rather than deterministic: except for rare autosomal dominant mutations, genetic risk acts in combination with the environmental and lifestyle factors noted above [6,7].

Among modifiable environmental risk factors for dementia, diet has emerged as a key target for risk reduction, since it influences neurovascular and metabolic health across the lifespan, has broad population-level applicability, and represents a cost-effective strategy for promoting healthy cognitive aging [7,13,14]. Consequently, its role in dementia prevention is emphasized in several risk-reduction guidelines. For instance, the WHO recommends adherence to Mediterranean-style dietary patterns to reduce the risk of cognitive decline [15], while the National Institute for Health and Care Excellence identifies dietary modification as an important lifestyle strategy for dementia prevention [16]. Higher adherence to healthy dietary patterns such as the Mediterranean, the DASH (Dietary Approaches to Stop Hypertension), and the MIND (Mediterranean-DASH Intervention for Neurodegenerative Delay) diets, is associated with a diminished risk of cognitive decline and dementia [7]. Conversely, high consumption of red and processed meats, refined sugars, ultra-processed foods, and saturated fats has been linked to poorer cognitive outcomes [17]. These associations may be explained by the anti-inflammatory, antioxidant, and neurovascular benefits of healthy dietary patterns [4,18]. Such findings may be especially relevant for individuals at elevated genetic risk of dementia, such as offspring of people with dementia, for whom lifestyle factors may help mitigate disease risk or delay symptom onset [19,20].

Several studies are currently investigating the interplay between diet and genetic predisposition [6]. Diet seems to influence dementia risk in individuals with high genetic susceptibility, with Mediterranean diet extending strong benefits in carriers of the APOE4 allele [21,22]. Beyond single-gene effects, meta-omic approaches have demonstrated that dietary factors influence metabolic pathways associated with genetic susceptibility and cognitive outcomes, underscoring the multifactorial nature of dementia risk [6].

Together, these findings underpin current interest in precision nutrition approaches to dementia risk reduction [6,7].

Despite international recommendations and research highlighting the importance of dietary patterns in dementia prevention, evidence suggests that dementia literacy remains limited, even among individuals at elevated genetic risk [23–25]. In particular, offspring of people living with dementia represent a population at increased risk who may benefit from targeted prevention and education strategies. However, many offspring may be unaware of the role that modifiable lifestyle factors, including maintaining a healthy and balanced diet, can play in reducing dementia risk or delaying symptom onset [26]. Others may perceive dementia as an inevitable consequence of their genetic profile and therefore not amenable to prevention [27–29]. Such fatalistic interpretations are of particular concern in this population, since a belief that dementia is predetermined removes the perceived benefit of preventive behaviors. Understanding the knowledge, attitudes, and perceptions of offspring regarding preventive strategies is therefore essential for developing effective risk-reduction interventions [26,30,31]. Moreover, a better understanding of offspring's perspectives may support person-centered care, improve communication regarding genetic risk, and inform interventions that are both clinically relevant and socially meaningful [32–34].

In this context, the present study used a mixed-methods design, integrating both quantitative and qualitative components, to examine how offspring of people living with dementia perceive their own hereditary risk and the role they attribute to diet in modifying it. It further examines whether these perceptions are associated with the adoption of dietary changes as part of dementia risk reduction.

2. Materials and Methods

2.1. Study Design

A mixed method, convergent parallel design was employed between February 2026 and April 2026. The qualitative and quantitative components were carried out in parallel and analyzed separately. No formal integration of the qualitative and quantitative components was conducted during the analysis stage (e.g., triangulation or use of an integration matrix), meaning that findings are separately presented. However, findings are triangulated at an interpretation level and are, thus, discussed together.

With regards to the quantitative component of the study, an online questionnaire survey was conducted with offspring of individuals living with dementia in Greece. The purpose of the survey was to explore the knowledge, beliefs, and attitudes of offspring of individuals living with dementia regarding the role of diet in dementia risk and prevention. Given their potentially elevated susceptibility to dementia, the survey also examined participants' perceptions of their own genetic risk, as well as any dietary behaviors or modifications they had adopted to reduce their perceived likelihood of developing the condition.

The qualitative study included individual semi-structured interviews with offspring of individuals living with dementia. The interviews explored offspring's beliefs and attitudes regarding their perceived hereditary risk of dementia and the role of diet in dementia prevention at a greater depth. The interviews also examined participants' dietary practices and any dietary modifications adopted in response to their perceived risk, as potential strategies for reducing dementia risk.

2.2. Inclusion/Exclusion Criteria

The inclusion criteria in both studies included adult age (18 years and older), the ability of the participants to communicate in the Greek language and residence in Greece.

In addition, they had to be offspring of individuals with self-reported, clinician-diagnosed dementia. No additional inclusion criteria were defined.

2.3. Procedure and Ethical Approval

The present study was approved by the Ethics Committee of the University of Thessaly (approval no: 57, date of approval: 1 October 2025; approval of amendment no: 63, date of approval: 27 February 2026) and conducted in line with the code of conduct, legal regulations and ethical guidelines defined by the University Ethics Committee. The study was also approved by the Day Care Center for Dementia in Larissa-EPAPSY (approval no: 31, date of approval: 13 January 2026). No adverse events were observed or recorded during or after the completion of the questionnaire survey or individual interviews, indicating that the study was conducted as originally planned.

Offspring were recruited for both the online survey and the interview study via social media platforms and organizations supporting individuals living with dementia (Day Care Center for Dementia in Larissa-EPAPSY), following approval from the relevant Ethics Committee. As no probability-based sampling frame of offspring of people living with dementia exists in Greece, recruitment relied on convenience sampling; this is likely to have favoured participation by individuals who are digitally engaged, urban-dwelling and more highly educated, and is considered further in the limitations. For the interview study, participants were additionally recruited through the online questionnaire. Specifically, those who indicated interest in participating in the qualitative component, while completing the online questionnaire, were given the option to provide their contact details. The research team then contacted them to provide further information about the aim of the interview study.

For the online survey, the study scope was explained in an information sheet, and informed consent was obtained prior to questionnaire completion. For the interview study, eligible participants received a detailed information sheet outlining the study aims, potential risks and benefits, voluntary participation, and confidentiality, and were provided with a consent form via email. On the day of the interview, researchers further explained the study procedures and aims and allowed time for participants to ask questions. Interviews lasted between 45 and 60 min. Participants were informed that they could pause or withdraw at any time if they experienced psychological discomfort; however, all interviews were completed as planned.

All data and information generated by the two studies were stored electronically and handled with strict confidentiality. Regarding quantitative study, no personal data, such as names, were collected, with the only exception of the email addresses of those who were interested in participating in the qualitative phase. Interview recordings were securely stored on an encrypted drive, accessible only to the research team. Prior to analysis, interviews were transcribed verbatim, anonymized and then imported into N-VIVO (Version 14) for further analysis. All data were stored on computers at the Laboratory of Nutrition and Clinical Dietetics of the University of Thessaly, after first being coded with numerical identifiers to ensure confidentiality.

2.4. Materials

An online questionnaire (see Supplementary Materials, Questionnaire S1) was developed by the research team for the aim of the present study. The questionnaire consisted of closed-ended questions and was developed as follows. First, an initial item pool was generated from previously published studies addressing dementia knowledge, risk perception and beliefs about the role of diet [29,35–37], adapted to the Greek context and to the specific focus on offspring. Then, it was reviewed for content validity by three members of the

research team with expertise in clinical nutrition and dietetics, dementia care, neurology and public health and the review was repeated until consensus was reached. No formal psychometric evaluation, such as exploratory factor analysis, internal-consistency estimation, test–retest reliability assessment, or pilot testing, was undertaken. It was designed as a descriptive item set capturing discrete beliefs and behaviors rather than as a scale measuring latent constructs.

The questionnaire gathered data on participants' demographic characteristics, including gender, age, education level, employment status, marital status and place of residence. Furthermore, participants' perceptions regarding their perceived risk were explored, with a five-point Likert scale (1 = "Strongly disagree" to 5 = "Strongly agree"). In addition, it was investigated whether participants had discussed with a healthcare professional the likelihood of dementia occurrence or the role of diet in dementia occurrence and/or prevention (yes/no response); where applicable, participants were asked to identify the specialty of the healthcare professional (multiple-response categorical question, including the following categories: neurologist, psychiatrist, dietitian/nutritionist, psychologist, occupational therapist, speech therapist, physiotherapist, internist, family physician/general practitioner and other—allowing responders to specify their response). The response options were informed by the literature and included healthcare professions commonly involved in dementia care and prevention [38,39]. Finally, the questionnaire examined the perceived role of diet in dementia prevention (yes/no response), as well as any dietary changes adopted to reduce dementia risk (yes/no response).

A semi-structured topic guide with ten open-ended questions was implemented for all interviews (Table 1). The questions were designed to explore their perceived hereditary risk for dementia as well as the importance interviewees attributed to diet in reducing this risk. Where necessary, probing and follow-up questions were employed to facilitate deeper reflection.

Table 1. Topic guide for conducting semi-structured interviews with offspring of individuals diagnosed with dementia.

Questions of Topic Guide
Question 1. What is it like to live with a parent with a chronic disease like dementia?
Question 2. What are your thoughts on the likelihood of this disease occurring in yourself? (susceptibility)
Question 3. What factors/habits do you believe may affect the severity of the disease at diagnosis? (severity)
Question 4. What do you believe/how important do you believe the role of diet is in the possible occurrence of the disease in you? Do you believe that diet can reduce the risk? (benefits)
Question 5. How have you changed/What changes have you made (if any) in your diet since you learned about your relative's diagnosis? How easy was it to make such changes? (self-efficacy)
Question 6. What do you think motivates people like you, i.e., children of people with dementia, to change their eating practices/habits? (cues to action)
Question 7. What do you think are the main difficulties in adopting a healthy diet (e.g., knowledge, money, habit, underestimation of the disease)? (barriers)
Question 8. What do you think would encourage you to adopt (more) healthy eating habits (e.g., experts, the internet)? (cues to action)

Table 1. *Cont.*

Questions of Topic Guide
Question 9. What would you advise other relatives of a patient regarding his/her diet (e.g., changes in quantities/types of food, changes in cooking method, change in 'quality' e.g., organic/seasonal products, etc.)? What are the benefits of these changes?
Question 10. Would you like to add anything that hasn't already been discussed? Do you have any questions for me?

2.5. Analysis

2.5.1. Statistical Analysis

Descriptive statistics, including absolute (*n*) and relative (%) frequencies, were used to summarize participants' demographic data, their perceptions of the genetic risk of dementia and their beliefs regarding the role of diet in the onset and prevention of dementia. These analyses also examined whether participants had discussed with a healthcare professional the likelihood of dementia occurrence or the role of diet in dementia occurrence and/or prevention and, where applicable, with which healthcare specialty. To identify factors linked to dietary modifications, a multivariable logistic regression model was employed. This model accounted for demographic characteristics (e.g., age, gender, and employment) and disease-related perceptions (e.g., genetic risk beliefs). Predictor selection for the multivariable logistic regression model was guided strictly by a priori theoretical framework rather than automated selection procedures, ensuring that key confounding variables and conceptual determinants of health behavior were appropriately adjusted for. The strength of these associations was reported using Odds Ratios (OR) and 95% Confidence Intervals (CI). Statistical significance was determined at $p < 0.05$ and all analyses were performed using Jamovi (Version 2.6.44). As this was an exploratory study, no a priori sample size calculation was undertaken, since the analyses were designed to be hypothesis-generating rather than confirmatory in nature [40].

2.5.2. Framework Analysis

A deductive method of analysis was applied to the data, in order to identify, analyze, and interpret meaning and themes related to dementia and relevant health behaviors. In the deductive (directed) approach, analysis begins with a theory as a guidance for initial codes [41]. The Health Belief Model (HBM) served as the framework for the present analysis, adapted to the context of dementia.

HBM was developed initially in the 1950s [42,43] and is a widely used conceptual framework in behavior research related to dementia. It provides insight into the processes underlying both the adoption and maintenance of health-related behaviors, while also providing a theoretical basis for health-related interventions. HBM has been previously applied in dementia research to investigate how individuals perceive their own hereditary and personal risk of developing dementia and how these perceptions relate to preventive health behaviors [29,35,44].

HBM includes several key constructs that predict individuals' likelihood of engaging in behaviors aimed—in the present study—at preventing dementia. These constructs include perceived susceptibility to dementia (personal perceived risk of developing dementia), perceived severity to dementia (beliefs about the seriousness of dementia), perceived benefits (the belief that adopting healthier dietary practices can reduce the risk of developing dementia) and barriers (perceived difficulties in adopting healthier dietary practices), cues to action (internal or external factors that can motivate an individual to adopt healthier dietary practices), and the more recent addition of self-efficacy (individuals' beliefs in their

ability to successfully adopt and maintain healthier dietary practices, even when facing difficulties or constraints) [45].

A deductive approach was used, and the key categories were pre-determined according to the HBM, following three stages. Firstly, relevant theory and pre-existing themes were identified and the key elements of HBM were recorded and used as codes. Secondly, data were analyzed deductively, to identify and sort meaning units. The pre-existing themes were applied and used as an indicator for the meaning units that emerged from the data. Finally, a consensus on interrelationships between the research questions, codes, and key themes was reached by researchers [46]. Moreover, researchers agreed that with the number of individual interviews conducted, data saturation was obtained and no new information or themes emerged [47].

Regular meetings were held throughout the analysis by two researchers (DS, EZ). The researchers also read and code the data separately, to reach triangulation. Any disagreement was discussed and resolved.

3. Results

3.1. Quantitative Results

A total of 118 offspring of individuals with dementia participated in the survey (Table 2). The median age was 52.0 years (Q1, Q3: 39.3, 57.0), with a minimum age of 19 and a maximum of 73. The participants were mostly women (71.2%), urban residents (87.3%) and highly educated (82.2% having completed a Bachelor's degree or higher). Married individuals (64.4%) and full-time employees (56.8%) constituted the majority of the group.

Table 2. Demographic characteristics of offspring of individuals with dementia (N = 118).

Variable	***n* (%)**
Age (years), Median (Q1, Q3)	52 (39.3, 57.0)
Sex	
Male	33 (28.0)
Female	84 (71.2)
Prefer not to say	1 (0.8)
Educational level	
Secondary Education (Lyceum)	21 (17.8)
Bachelor's Degree	51 (43.2)
Master's Degree/Doctorate (PhD)	46 (39.0)
Marital status	
Single	31 (26.3)
Married	76 (64.4)
Divorced	6 (5.1)
Widowed	5 (4.2)
Employment status	
Full-time employment	67 (56.8)
Part-time employment	9 (7.6)
Unemployed	10 (8.5)
Retired	17 (14.4)
Students	15 (12.7)

Table 2. *Cont.*

Variable	*n* (%)
Place of residence	
Urban area	103 (87.3)
Semi-urban area	4 (3.4)
Rural area	11 (9.3)

n = number; Q1 = first quartile (25th percentile); Q3 = third quartile (75th percentile).

Perceptions regarding genetic predisposition varied, with 52.5% of participants believing that offspring of individuals with dementia have a higher risk of developing the disease (Table 3). A significant proportion of the sample (36.4%) adopted a neutral position, while 11% of participants disagreed or strongly disagreed with the existence of an increased hereditary risk.

Table 3. Participants' perceptions regarding the genetic risk of dementia (N = 118).

Statement, *n* (%)	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Offspring of individuals living with dementia are at a higher risk of developing the disease compared to the general population	5 (4.2%)	8 (6.8%)	43 (36.4%)	51 (43.2%)	11 (9.3%)

Participants' views and practices regarding the impact of diet on disease prevention are summarized in Table 4. A high percentage of the sample (76.3%) expressed the belief that diet plays a significant role in the onset or prevention of the disease among offspring. In terms of professional guidance, more than half of the respondents (54.2%) had consulted a healthcare professional about the likelihood of disease occurrence in offspring. However, a smaller proportion (33.9%) specifically discussed the preventive role of nutrition in dementia prevention. Regarding behavioral changes, 40.7% of participants reported that they had already implemented dietary modifications to mitigate the risk of disease.

Table 4. Participants' perceptions, consultations and dietary practices regarding dementia (N = 118).

Survey Question	Response, *n* (%)	
	Yes	No
1. Beliefs about diet		
"Do you believe that diet and nutrition play a role in the onset or prevention of the disease in offspring of individuals with dementia?"	90 (76.3%)	28 (23.7%)
2. Consultations with professionals		
"Have you ever discussed the possibility of disease onset in offspring with a healthcare professional?"	64 (54.2%)	54 (45.8%)
"Have you ever discussed the role of diet in disease prevention with a healthcare professional?"	40 (33.9%)	78 (66.1%)
3. Practical implementation (Actions)		
"Have you ever implemented any dietary changes to reduce disease risk?"	48 (40.7%)	70 (59.3%)

Data regarding the medical specialties involved in counselling are presented in Table 5. Given the multiple-choice nature of the question, the cumulative responses exceed the actual sample size of participants who received professional consultation. Neurologists were the most frequently consulted specialty (67.5%), followed by dietitians-nutritionists (42.5%), while psychiatrists were consulted by 32.5% of the sample. Internists, psychologists, and other specialized professionals represented a smaller proportion of the consultations.

Table 5. Healthcare professionals specialties providing advice (N = 40).

Healthcare Specialty	***n* (%)**
Neurologist	27 (67.5%)
Dietitian-nutritionist	17 (42.5%)
Psychiatrist	13 (32.5%)
Internist	11 (27.5%)
Psychologist	10 (25.0%)
Other	7 (17.5%)

Predictors of dietary shifts among offspring of individuals with dementia were evaluated using a multivariable logistic regression model (N = 118, events n = 48), as detailed in Table 6. The overall model was statistically significant ($\chi 2 = 63.6$, df = 17, $p < 0.001$), demonstrating a good fit with a Nagelkerke R2 = 0.562. Participants who reported consulting a healthcare professional regarding the role of diet exhibited significantly higher odds of making dietary modifications (OR = 26.612, 95% CI: 7.474–94.761, $p < 0.001$). However, the remarkably wide confidence interval reflects substantial statistical imprecision in the point estimate, likely due to small cell counts within this subgroup. Another potent predictor was the belief that diet plays a role in dementia (OR = 6.805, $p = 0.023$). Additionally, gender was found to be a significant factor, with females being significantly less likely than males to report dietary changes (OR = 0.282, $p = 0.040$). Other variables, including age, educational level, employment status, and beliefs regarding genetic risk, did not reach statistical significance. However, these estimates should be interpreted with caution given the limited number of events relative to the number of predictors.

Table 6. Multivariable logistic regression of factors associated with self-reported dietary change among offspring of people living with dementia (N = 118; number of participants reporting dietary change [events] = 48).

Predictor	**OR**	**95%CI**	***p*-Value**
Gender			
(Female vs. Male)	0.282	[0.085, 0.944]	0.040 *
Age (years)	0.946	[0.892, 1.004]	0.069
Educational level			
(Secondary vs. Higher education)	1.445	[0.326, 6.494]	0.623
Employment status (Ref: unemployed)			
Employed	1.441	[0.181, 11.641]	0.730
Retired	2.294	[0.193, 27.260]	0.511
Students	0.239	[0.014, 4.100]	0.324
Belief in genetic risk (Ref: Strongly disagree)			
Disagree	4.219	[0.183, 97.411]	0.369

Table 6. *Cont.*

Predictor	OR	95%CI	*p*-Value
Neutral	0.767	[0.060, 9.797]	0.839
Agree	0.677	[0.050, 9.162]	0.769
Strongly agree	0.323	[0.016, 6.402]	0.459
Consulted healthcare professional on genetic risk			
(Yes vs. No)	0.859	[0.289, 2.555]	0.785
Belief in diet role			
(Yes vs. No)	6.805	[1.304, 35.524]	0.023 *
Consulted healthcare professional on dietary role			
(Yes vs. No)	26.612	[7.474, 94.761]	<0.001 *

Abbreviations: OR, odds ratio; CI, confidence interval. Model statistics: Nagelkerke R^2 = 0.562; overall model test $\chi^2(17) = 63.6$, $p < 0.001$. * $p < 0.05$.

3.2. Qualitative Results

A purposive sample of 22 offspring of individuals diagnosed with dementia participated in the study. All participants were offspring of individuals diagnosed with dementia. As shown in Table 7, their median age was 55.6 years. Most participants were women (81.8%) and all interviewees lived in urban areas. Regarding educational level, the majority had university/postsecondary education (86.4%). Most participants reported that their parent's diagnosis occurred 11 or more years ago (n = 9, 40.9%), followed by 1–5 years ago (n = 8, 36.4%). Regarding the relationship with the family member diagnosed with dementia, 12 interviewees reported that their mother was affected (54.5%) and for the other 10 participants their father was diagnosed with dementia (45.5%). Table 7 presents participants' descriptive characteristics in more detail.

Table 7. Demographic characteristics of offspring of individuals diagnosed with dementia, who participated in individual interviews (N = 22).

Variable	*n* (%)
Age (years), Median (Q1, Q3)	55.60 (50.25, 60.75)
Gender	
Male	4 (18.2)
Female	18 (81.8)
Place of residence	
Urban area	22 (100)
Rural area	0 (0)
Educational level	
Master's Degree/Doctorate (PhD)	3 (13.6)
Bachelor's Degree	12 (54.5)
Post-Secondary Education	4 (18.2)
Secondary Education	3 (13.6)
Parent diagnosed with dementia	
Father	10 (45.5)
Mother	12 (54.5)

n = number; Q1 = first quartile (25th percentile); Q3 = third quartile (75th percentile).

At a broad level, two main themes emerged from the analysis. The first theme "dietary practices" captured notable differences in whether and how participants modified their diets following their parent's dementia diagnosis. Most participants reported no dietary changes following the diagnosis, either because they already considered themselves to follow healthy dietary practices, or because they did not perceive diet as an important protective factor against dementia. The second theme "factors affecting dietary practices as mapped to the HBM" illustrated how perceptions of susceptibility, severity, benefits, barriers, cues to action and self-efficacy collectively influenced participants' dietary practices. The findings for both themes are presented in more detail below.

3.2.1. Theme 1—Dietary Practices

All interviewees discussed whether or how their dietary practices changed following their parents' dementia diagnosis.

Only a small number of participants reported modifications in their dietary habits, following their parents' dementia diagnosis. They described adhering to a generally healthy diet based on the principles of Mediterranean dietary pattern.

> *"After the diagnosis, I began applying the same dietary practices I follow for my mother to my family as well, based on a Mediterranean dietary pattern."*
>
> *(PART1, Female, 49 years old)*

However, most participants stated that they did not make any dietary changes. Commonly, they mentioned that they already considered their diet to be balanced, regardless of their parents' dementia diagnosis.

> *"No, I have always been careful. I was already paying attention. . . I haven't made any changes because I believe I was already careful, as I have been very aware of nutrition-related issues from a relatively young age."*
>
> *(PART12, Male, 55 years old)*

These participants mentioned frequent consumption of legumes, vegetables and fruits, emphasizing the inclusion of olive oil, nuts, chicken and fish. Regarding cooking methods, baking or steaming was preferred over frying and some participants mentioned that they select and consume foods according to their seasonal availability. A few stated that they avoid or limit certain types of foods, such as meat, processed foods, foods high in sugar or salt and oils other than olive oil.

> *"So we have a Mediterranean-style diet. . .We eat fish, vegetables, fruit, omega 3."*
>
> *(PART1, Female, 49 years old)*

Moreover, some interviewees did not consider diet as an important protective factor against dementia and therefore reported making no dietary changes.

> *"No, I did not make that connection, to be honest, and I did not find a reason to do so."*
>
> *(PART18, Female, 49 years old)*

3.2.2. Theme 2—Factors Affecting Dietary Practices as Mapped to HBM

According to HBM, the adoption of preventive behaviors and dietary practices was influenced by the interaction of key factors, such as perceived vulnerability, perceived severity of the disease, perceived benefits and barriers, self-efficacy, and cues to action.

Overall, offspring of people living with dementia perceived dementia as a particularly serious and progressive condition; however, their personal vulnerability was often perceived as relatively limited, with the risk being more distant and considered as a future concern. Although heredity was recognized as a risk factor, the threat was not always

experienced as immediate. As a result, the adoption of preventive dietary behaviors did not only depend on knowledge regarding the severity of dementia, but also on the balance among perceived benefits and barriers, level of self-efficacy, and cues that motivate action.

Regarding the perceived benefits, the analysis showed considerable heterogeneity, since most of the participants considered the role of diet important, while the rest did not believe that diet's role is significant in dementia prevention. The perceived barriers, such as cost, lack of time and knowledge and the perceived self-efficacy shaped relatives' dietary practices, as well as cues to action that commonly included guidance from health care professionals and information from the media or public health authorities. These factors are analyzed in detail in the sub-themes below.

Perceived Susceptibility to Dementia

Overall, most interviewees named heredity as an important risk factor for dementia.

"I think about heredity all the time as an important risk factor for dementia. I always think about it."

(PART6, Female, 66 years old)

However, differences were noted with regard to the degree of perceived susceptibility, that is, the degree of perceived vulnerability or likelihood of developing dementia. Most of the participants frequently expressed a perception that dementia "runs in the family,"

"I live with the fear that I might develop dementia due to my family history."

(PART14, Female, 50 years old)

Indeed, some interviewees not only perceived themselves as susceptible to developing dementia but also extended this perceived risk to their children. This sense of familial risk was often framed in terms of inherited vulnerability, with participants linking family history to an increased likelihood of dementia onset across generations. Such intergenerational perceptions of risk were frequently accompanied by fear and anxiety, particularly regarding the possibility of developing dementia themselves or observing its onset in their children.

"I don't know, I have a fear after that, my mind is always there, that something will happen to us. . .I have it in my mind every day and I see my child, I tell you I worry about my child because he has too much on his mind, too much"

(PART2, Female, 63 years old)

The remaining participants acknowledged the risk in a more attenuated or distal manner. Although they recognized a hereditary component, dementia was often described as a distant concern or as an expected consequence of ageing, which contributed to a reduced perception of personal susceptibility and, in turn, lower levels of fear and anxiety.

"Of course it's something that concerns me; it runs in our family. . . I just try to put it aside a bit, so it doesn't overwhelm me . . . or take over."

(PART17, Female, 43 years old)

Perceived Dementia Severity

Overall, all participants described dementia as a severe, irreversible, and progressively worsening disease, with no known cure. As they explained, as dementia progresses it alters family dynamics, contributes to social isolation, and places substantial demands on community and healthcare resources.

Although participants varied in the extent of their involvement in their parent's care, all of them reported being profoundly affected by their relative's condition. Participants highlighted that dementia involves detrimental physical and psychological consequences

for both individuals living with dementia and the family members taking care of them. At a physical health level, most participants referred to the differentiation of dementia according to its stage, recognizing milder phases in the initial disease stages. In more advanced stages, participants reported that individuals living with dementia experienced significant physical decline, including reduced mobility, urinary and fecal incontinence, and general physical weakness.

> *"And of course, as time passed, it became practically more difficult. Apart from the memory loss, they also start to lose their ability to walk properly."*
>
> *(PART21, Female, 68 years old)*

Also, some interviewees reported experiencing fatigue and sleep disturbances themselves while taking care of their parents living with dementia, as well as neglecting their own health care needs, such as missing medication for their own physical health conditions.

> *"You focus so much on caring for them that you neglect your own needs. In my case, I take medication for high blood pressure and other health conditions, and I often forget to take it."*
>
> *(PART22, Male, 61 years old)*

At a psychological level, the disease was described by all participants as psychologically exhausting, leading to intense feelings of anxiety, fear and emotional burden. In particular, the progressive loss of identity, dignity, and autonomy of the individuals' living with dementia was described as a painful and exhausting experience for the offspring and carers of the people living with dementia.

> *"This is something that really makes me anxious, whether she will reach a stage where she can no longer do basic everyday activities."*
>
> *(PART19, Female, 45 years old)*

In addition, some offspring referred to the psychological distress of people living with dementia, either in the early stages, when awareness is still preserved, or in the later stages as a part of the neuropsychiatric symptoms.

> *"Her speech is no longer coherent, and communication has become very difficult, which causes her anxiety. She is also upset by her memory difficulties and her inability to recall information."*
>
> *(PART18, Female, 49 years old)*

Perceived Benefits of Diet in Dementia Prevention

Offspring's perceptions of the role of diet in dementia prevention showed heterogeneity.

Most of the participants considered diet an important preventive factor against dementia risk. Many believed that healthy dietary habits contribute to brain health both directly and indirectly through their beneficial effects on other health conditions. Participants frequently linked nutrition to cardiovascular and metabolic health, suggesting that reducing the risk of vascular, neurological, and other chronic diseases may, in turn, lower the likelihood of developing dementia. As one participant explained:

> *"What I've come to understand is that diet can reduce the risk of other conditions, such as vascular and neurological problems. In turn, that may have a positive effect on Alzheimer's disease. In my mind, there is a clear connection between diet and Alzheimer's".*
>
> *(PART12, Male, 55 years old)*

A commonly expressed belief was that adherence to healthy dietary patterns, particularly the Mediterranean diet, could promote cognitive health, prevent dementia, or delay

its progression. Participants often referred to the Mediterranean diet as a cornerstone of healthy living and dementia prevention.

> *"I believe that the Mediterranean diet, the Mediterranean diet is the one we will return to again, it is the one that will get us out of a lot of things".*
>
> *(PART11, Female, 58 years old)*

Similarly, several participants associated healthy eating with lower obesity risk and improved overall health, emphasizing that because obesity contributes to numerous chronic conditions, it may also be implicated in dementia risk. Others highlighted the potential neuroprotective role of lifelong healthy eating, acknowledging the importance of genetic factors while emphasizing that proper nutrition may help protect nerve cells throughout life.

Participants also referred to specific foods and nutrients that they believed support cognitive function. Some discussed the potential benefits of foods rich in antioxidants and polyphenols, which they perceived as enhancing memory and thinking abilities. One participant stated:

> *"It enhances memory when you eat foods rich in antioxidants and polyphenols. Research has shown all these things—at least from what I've read—and over the years I've seen that they help memory, people's thinking, and definitely energy as well…".*
>
> *(PART1, Female, 49 years old)*

In addition, some participants drew on popular beliefs and information encountered through media or everyday conversations, linking particular foods, such as walnuts, to enhance memory and brain function.

> *"Honestly, from what I read—I don't know, I'm not an expert—it says that walnuts have the shape of the brain and help with memory and mental function and so on. Oh great, then we'll eat walnuts".*
>
> *(PART20, Female, 44 years old)*

Together, these accounts suggest that participants generally perceived diet as a modifiable lifestyle factor with the potential to support cognitive health and reduce dementia risk, although the specific mechanisms underlying this relationship were often informed by personal beliefs, popular knowledge, and broader health messages.

Fewer participants believed that diet does not have a protective effect against dementia. A few reported that they had never been provided with information suggesting that diet could play a role in dementia prevention.

> *"I don't know about the role of diet in the possible onset of the disease. I haven't looked into it. To be honest, it's something that has never crossed my mind. We've heard that reading, solving crossword puzzles, and doing similar activities can help, but beyond that, I haven't really thought about diet."*
>
> *(PART5, Female, 60 years old)*

Perceived Barriers to Dietary Changes for Dementia Prevention

Interviewees identified multiple individual and societal factors as significant barriers to adopting a healthy diet for dementia prevention.

At a societal level, accessing professional dietary support, including consultations with dietitians, was often viewed as an additional financial burden. Likewise, many participants perceived the cost of purchasing healthy foods—such as organic, minimally processed, or specialty products—as prohibitively high.

> *"Nowadays, I think the main issue is cost. Buying foods that are healthier and contain fewer pesticides is expensive. If these products are sold at higher prices, not everyone can afford to buy them, even if they are better for their health."*
>
> *(PART3, Male, 69 years old)*

Moreover, from a societal perspective, low dietary literacy among relatives of people living with dementia was identified as a key barrier to implementing dietary changes, as limited population-level nutrition knowledge and awareness hinder the translation of dietary recommendations into sustained behavioral change.

> *"Because they simply do not know. It depends—many people are unaware. A great number of people lack knowledge because they have never really engaged with or learned about nutrition…"*
>
> *(PART15, Female, 65 years old)*

At an individual level, most participants reported lack of time as a perceived barrier for dietary changes. As these interviewees explained, family responsibilities and work commitments hindered meal preparation, leading to a heightened consumption of ready-made foods.

> *"Time is also a factor. Nutritious foods that are considered beneficial for memory often require more time to prepare and consume. As a result, people may not have enough time to prepare healthier, more balanced meals and instead choose quicker, more convenient foods. This can make it difficult to maintain the dietary routine or meal plan they would ideally like to follow."*
>
> *(PART18, Female, 49 years old)*

Some participants indicated that adopting healthier dietary habits requires changes in routines, habits, and attitudes, which can be challenging in practice. They frequently expressed a preference for familiar or convenient foods. In this context, convenience and strong taste preferences for highly palatable or processed foods were also identified as barriers to healthier eating.

> *"There is nothing to say… The deliciousness, all the deliciousness, is in the unhealthy products…"*
>
> *(PART5, Female, 60 years old)*

Additionally, the perception of dementia as a distant or abstract health threat—often associated only with aging—further limited motivation to implement immediate dietary changes.

> *"We see it somewhat distantly (dementia). We tend to associate dementia with very old age and think, 'until then, who knows who will live or die"*
>
> *(PART8, Female, 54 years old)*

Perceived Cues to Action

Participants identified multiple factors facilitating healthier dietary changes. Almost all participants identified guidance from healthcare professionals, including doctors and dietitians, as a key motivator for adopting healthier eating behaviors.

> *"I would prefer advice from an expert"*
>
> *(PART12, Male, 55 years old)*

Additionally, more than half reported that reliable information from the media, public health authorities and educational institutions could reinforce their awareness and intention to adopt healthier dietary practices.

> *"More accurate and more thorough information to the general public from everywhere, from doctors and from the Ministry and with spots on television, all of this to raise awareness, to highlight the problem because it is now quite big."*
>
> *(PART11, Female, 55 years old)*

Personal experience with people living with dementia also emerged as a powerful catalyst for behavior change in many interviewees. Witnessing the progressive decline associated with dementia, alongside the emotional and practical burdens of caregiving, was described by most as highly distressing. These experiences strengthened participants' perceived vulnerability and prompted reflection on preventive strategies, including adopting a healthier diet, as a means of reducing their own risk of being diagnosed with dementia.

> *"Observing the progression of a person from full cognitive, emotional, and functional capacity to significant deterioration is particularly distressing."*
>
> *(PART11, Female, 55 years old)*

Smaller but notable was the reference to internal motivation for endorsing a healthier diet, particularly when participants experienced tangible benefits from diet in their health or cognitive functioning.

> *"When you eat a balanced diet, you notice that you function better the next day—you have more energy to carry out whatever you need to do".*
>
> *(PART1, Female, 49 years old)*

Few participants discussed how the role of their social environment motivated them to endorse a healthier diet. For example, shared peer or familial values and habits could encourage the adoption of healthier dietary practices, such as selecting healthier food options over unhealthy ones.

> *"A close person can have an influence on my dietary habits."*
>
> *(PART9, Female, 56 years old)*

Perceived Self-Efficacy

Participants described varying levels of self-efficacy—their perceived ability to adopt and maintain a healthy diet to reduce dementia risk. Some expressed high self-efficacy, feeling confident that dietary change was manageable, whereas others reported low self-efficacy, acknowledging intentions to change but doubting their ability to do so.

Two key factors were identified as shaping these differing levels of self-efficacy. The first was self-control over unhealthy habits, which participants viewed as essential for successfully initiating and maintaining dietary change. Those who struggled with impulse control reported lower confidence in their ability to change. However, those who felt able to exercise behavioral restraint, discipline and control over their will tended to report higher self-efficacy, as depicted in the words of a participant:

> *"100%, (I believe in myself that I can make dietary changes) okay I'm a disciplined person, I have no problem with it, 100%."*
>
> *(PART8, Female, 54 years old)*

The second factor was reflection on successful past experiences with dietary change. Participants who could recall previous achievements in modifying their diet drew on these experiences as evidence of their capability, which reinforced and strengthened their current sense of self-efficacy.

> *"Yes, definitely, especially when it comes to diet. I feel confident that I can make changes because I have successfully done so in the past, and it is relatively easy for me. There are*

> *some things I had already eliminated on my own years ago. For example, sugar. It's not that I ever consumed large amounts of sugar or ate sweets every day, but I have reduced my intake significantly. I try to avoid sugar as much as possible because it is present in so many processed foods, and I have essentially removed it from my life."*
>
> *(PART21, Female, 68 years old)*

4. Discussion

This is the first study to examine perceptions, beliefs, and behaviors regarding diet and dementia risk reduction among offspring of people living with dementia in Greece, using a mixed-methods design. Overall, our findings indicate that offspring of people living with dementia generally acknowledge diet as an important factor in dementia risk reduction, yet this recognition is not consistently reflected in their dietary behavior. Instead, behavior change appears to be shaped by a complex interplay of perceived barriers and facilitators, perceived dementia severity and susceptibility, in accordance with the HBM theory.

Diet was recognized as an important factor in dementia risk reduction in both our questionnaire and interview study. According to our quantitative component, most participants believed that diet plays a crucial role in dementia onset and risk reduction, whereas a lower proportion reported having implemented dietary changes. Similarly, according to our qualitative data, most participants described perceived benefits of a healthy diet upon dementia risk reduction and articulated the mechanisms of this association in more depth.

Interviewees generally believed that diet may protect against dementia both directly and indirectly. Directly, healthy dietary patterns, particularly the Mediterranean diet, were often viewed as promoting brain health and potentially slowing cognitive decline across the life course. Evidence suggests that healthy dietary patterns, particularly the Mediterranean diet, are associated with a reduced risk of cognitive decline and may contribute to slower progression of dementia [7,15,48–51]. Indirectly, according to our interviewees, a healthy diet could protect against dementia through its beneficial effects on vascular, metabolic, and overall physical health, including reduced obesity risk, and more directly through potential neuroprotective mechanisms. Cardiometabolic factors have been recognized as significant factors affecting dementia, as reported by the Lancet Commission [7] on dementia prevention and WHO guidelines [15]. Moreover, cardiovascular literature highlights a heart–brain connection, where dietary patterns may reduce dementia risk through vascular and metabolic improvements including improved blood pressure regulation, lipid profiles, and reduced atherosclerotic burden [52]. In addition, anti-inflammatory dietary patterns, such as the Mediterranean diet [53] may reduce systemic inflammation, which contributes to neurodegeneration [54], since antioxidant-related mechanisms may help neuronal protection by reducing oxidative stress in the brain [55].

These associations derive predominantly from prospective observational cohorts, which link higher adherence to the Mediterranean, DASH and MIND dietary patterns to a lower incidence of dementia and to slower age-related cognitive decline [7,48–51]. Evidence demonstrating that dietary modification prevents Alzheimer's disease—as distinct from reducing incident risk, delaying symptom onset or attenuating the rate of cognitive decline—is not currently available, while the WHO guidelines grade the certainty of the evidence for dietary interventions as limited [15]. The 2024 Lancet standing Commission situates diet within a life-course risk-reduction framework rather than presenting it as a preventive treatment [7]. Participants' belief that diet can "prevent" dementia is interpreted here as a lay representation of risk rather than an established causal claim.

In both our qualitative and quantitative components, only a small proportion of participants reported dietary modifications to reduce their dementia risk, highlighting a clear gap between awareness of diet as a preventive strategy and its translation into healthier

dietary practices. This finding aligns with nutrition psychology literature describing a well-established intention–behavior gap, whereby knowledge of and positive attitudes toward healthy eating are not consistently translated into actual dietary behavior [29,36,37,56].

Qualitative findings help explain this discrepancy by identifying key barriers to implementation, including financial constraints, lack of time, entrenched dietary habits, and strong individual food preferences. Such barriers have been widely documented in the literature as influencing adherence to dietary and lifestyle interventions [57].

In addition, according to our qualitative analysis, dementia was perceived as a severe condition, associated with substantial psychological burden for both individuals living with the condition and their caregivers. Participants described dementia as emotionally exhausting and accompanied by constant anxiety and fear. At a physical level, caregiving was characterized by persistent fatigue, sleep disruption, and self-neglect. On the other hand, individuals living with dementia were seen as experiencing psychological distress both in early stages, when insight was still retained, and later due to neuropsychiatric symptoms and communication difficulties. These findings highlight the need for integrated mental health support for both individuals living with dementia and their offspring. While caregiver burden is well established in the literature [58,59], this study adds further insight into how offspring perceive and experience the psychological and physical aspects of dementia burden, both for themselves and for their relatives.

Despite the perceived dementia severity, participants often expressed a relatively distal or moderate sense of personal vulnerability, which appeared to weaken perceived threat and reduce motivation for preventive dietary action. Beliefs about heredity may further contribute to this gap, as both quantitative and qualitative findings indicated strong acknowledgment of genetic risk. However, some participants viewed this risk as largely unmodifiable, thereby diminishing the perceived usefulness of dietary change. This is consistent with previous research showing that awareness of dementia risk and severity does not necessarily translate into preventive behavior. Studies in both high-risk and general populations report a persistent gap between risk perception and sustained lifestyle change, even when hereditary risk is well recognized among participants [7,15,60,61]. Since genetic susceptibility acts jointly with modifiable risk factors, and because favourable lifestyle profiles are associated with lower dementia incidence even at high genetic loading [19,51], it is important to communicate inherited risk in probabilistic rather than deterministic terms, since conveying susceptibility without conveying modifiability may discourage preventive dietary engagement in this population.

On the other hand, cues to action, that is, facilitators of behavior change, were identified in both the qualitative and quantitative components, with the belief that diet plays a significant role in dementia prevention being significantly associated with reported dietary changes in the quantitative analysis.

Moreover, female gender in our quantitative sample was associated with a lower likelihood of reporting dietary modification. This contrasts with meta-analytic evidence suggesting that women generally demonstrate higher health literacy than men [62]. This inconsistency may be attributed to methodological factors, including the unequal gender distribution and variance between groups in our quantitative sample.

Consulting a healthcare professional about diet was the factor most strongly associated with reported dietary change in our quantitative data. However, the remarkably wide 95% confidence interval surrounding this estimate indicates substantial statistical uncertainty and potential parameter instability. Therefore, while this finding underscores the potentially pivotal role of primary healthcare providers in promoting dementia risk-reduction strategies, the exact magnitude of this effect should be interpreted with caution and warrants further verification in larger, fully powered studies. The direction of this

association also cannot be established, since both the consultation and the dietary change were reported at a single time point. Also, the absence of information on their temporal sequence could imply three explanations equally compatible with our data: that professional advice motivated dietary change, that participants who were already motivated to modify their diet were more likely to seek advice from a healthcare professional, or that an unmeasured common factor such as general health engagement produced both.

However, this finding was supported by our qualitative data, where more than half of interviewees emphasized that professional advice could strengthen their intention to adopt a healthier diet. Nevertheless, relatively few participants in the quantitative sample reported seeking advice from a healthcare professional. This could be explained by a common misconception reported in many studies [28,63–65], regarding dementia as a normal part of aging. This misconception may often lead relatives to view cognitive decline as inevitable and, consequently, diminish their motivation to adopt preventive lifestyle changes [27,66,67]. Importantly, this finding was also mirrored in our qualitative findings, where some interviewees mentioned that cognitive decline is merely a natural consequence of aging.

Finally, self-efficacy emerged as an important facilitating factor for implementing dietary changes, in our qualitative data. Offspring who reported experiential past success expressed greater confidence in their ability to adopt or maintain healthy eating practices. In contrast, a perceived lack of control over eating habits was associated with lower confidence, and, thus, belief in their ability to implement dietary changes. This aligns with previous research suggesting that self-efficacy is a major antecedent of behavior change and is strongly influenced by past successful behavior change and perceived ability to control or resist habitual behaviors [68,69].

Collectively, our findings underscore the need for multifaceted interventions in primary care and public health that extend beyond knowledge provision. Candidate components of such interventions include psychoeducation, structured professional guidance, and behavioral or mental health support, although the present study was not designed to evaluate their effectiveness.

Since professional consultation was the factor most strongly associated with dietary change, primary care may be a particularly relevant setting for individually tailored dietary counselling combined with dementia risk communication. Also, family-based interventions may merit evaluation, since dietary practices are often implemented at family (household) rather than individual level, and in our data several interviewees described extending to their own family the dietary changes they had made. Moreover, fewer than half of the participants who reported discussing the role of diet with a professional had consulted a dietitian, suggesting that referral pathways between neurology, primary care and dietetics in dementia services may constitute directions for further evaluation.

The present study has several strengths but also some key limitations. The mixed-methods design represents a key strength of the study as it combines quantitative and qualitative approaches, preserving the advantages of each method, while limiting their respective limitations. This approach enables a broader and more in-depth understanding of the phenomenon under investigation, which would not be possible with the implementation of an exclusively quantitative or qualitative method. Regarding the qualitative component, the sample size of 22 interviewees is considered a strength in the context of qualitative methodology [70], since it allowed for an in-depth exploration of experiences and sufficient thematic depth. Furthermore, the semi-structured interview approach gave flexibility and the opportunity for participants to have their voices heard.

On the other hand, several methodological limitations must be acknowledged. First, regarding sampling and generalizability, the reliance on convenience sampling and on-

line recruitment methods introduced self-selection bias. Across both quantitative and qualitative components, the final sample was relatively homogeneous—predominantly female, urban-dwelling, highly educated, and digitally engaged individuals who were likely already interested in health behaviors and dementia. Consequently, the sample cannot be regarded as representative of the wider population of offspring in Greece, and potential variations across different demographic or socioeconomic subgroups could not be systematically captured.

Second, regarding measurement and study design, the quantitative questionnaire was purpose-developed and, although reviewed for content validity, lacked formal psychometric validation; thus, measurement error cannot be quantified and estimates remain descriptive. Furthermore, data relied entirely on self-reports—including parental dementia diagnosis, which were not independently verified against medical records—leaving room for recall bias, social desirability bias, and diagnostic misclassification. Additionally, because participants evaluated a risk whose objective magnitude was unknown to us, unmeasured variance in true risk may account for some of the observed heterogeneity in perceived susceptibility.

From a structural perspective, despite implementing a mixed-methods design, no formal integration between the qualitative and quantitative components (e.g., triangulation or an integration matrix) was conducted at the analysis level, potentially limiting the synergistic added value of the approach. Finally, the cross-sectional design precludes causal inferences regarding factors associated with dietary changes, while the modest quantitative sample size—combined with the absence of an *a priori* power calculation—may have reduced statistical power and stability in multivariable logistic regression models.

In more detail, regarding the quantitative component, the limited number of outcome events (n = 48) relative to the number of predictor variables in the multivariable logistic regression model increases the risk of model overfitting and parameter instability. Moreover, the broad confidence intervals for certain predictors—most notably consultation with a healthcare professional—highlight the need for cautious interpretation of the quantitative point estimates. Although predictors were selected based on theoretical frameworks, the low events-per-variable ratio, combined with the modest sample size and lack of an a priori power calculation, may have compromised statistical power.

Lastly, concerning study scope, the present investigation focused exclusively on diet. Other well-documented modifiable risk factors for dementia, such as physical inactivity, hypertension, obesity, and social isolation [13,71], were not examined in depth. Future studies incorporating these lifestyle factors alongside personalized nutrition approaches [72]—which draw support from observational cohorts linking Mediterranean and MIND diets to lower Alzheimer's incidence [73,74], despite heterogeneous intervention trial results [75]—would offer a more holistic perspective. Furthermore, future research should evaluate targeted educational interventions and explore through longitudinal qualitative designs how self-efficacy and cues to action evolve across life stages to better support high-risk relatives.

5. Conclusions

This mixed-methods study provides insights into the dementia risk perceptions and dietary behaviors of offspring of individuals diagnosed with dementia. The present findings indicate that while offspring perceive themselves to be at higher genetic risk and generally recognize the role of diet in dementia risk reduction, this awareness is not translated into actual dietary changes. Notably, having discussed diet with a healthcare professional was the factor most strongly associated with reported dietary changes, while risk perception, perceived severity and susceptibility, perceived benefits, perceived barriers and self-efficacy

also shape dietary behaviors. Overall, these findings identify personalized dietary counselling and effective risk communication as priorities for evaluation in future intervention studies aimed at bridging the gap between knowledge and actual behavior in dementia risk reduction.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/dietetics5030050/s1, Questionnaire S1: Online questionnaire—"Perceived Genetic Risk and Dietary Prevention Beliefs among Offspring of People Living with Dementia: A Mixed-Methods Study Guided by the Health Belief Model".

Author Contributions: V.S. (Vaios Svolos), D.E.S. and O.A. conceptualized and designed the current study, E.Z., M.K., K.M. and D.E.S. performed interviews, D.E.S., E.Z., M.K. and K.M. performed transcriptions and framework analysis, A.T., D.E.S. and V.S. (Vaios Svolos) performed statistical analysis, V.S. (Vaios Svolos), D.E.S., E.Z., A.T., M.K., R.K., K.M., O.B., V.S. (Vasileios Siokas), I.L., E.D. and O.A. prepared the original draft and had responsibility for the final content. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: This study was conducted in accordance with the principles of the Declaration of Helsinki. Ethical approval was obtained from the Ethics Committee of the Department of Nutrition & Dietetics, University of Thessaly and the Day Care Center for Dementia in Larissa-EPAPSY and was conducted in line with the code of conduct, legal regulations, and ethical guidelines defined by the University and the Day Care Center for Dementia in Larissa-EPAPSY Ethics Committee (approval no: 57/1.10.2025; 31/13.01.2026; 63/27.02.2026).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request. The following email address will be requested: oandroutsos@uth.gr.

Acknowledgments: The authors would like to thank Anna Maria Pentzeretzi and Maria Delliou for their valuable assistance and support during the preparation of this manuscript.

Conflicts of Interest: The authors declare no conflicts of interest.

Abbreviations

The following abbreviations are used in this manuscript:

AD	Alzheimer's Disease
APOE	Apolipoprotein E
CI	Confidence Intervals
DASH	Dietary Approaches to Stop Hypertension
HBM	Health Belief Model
MIND	Mediterranean-DASH Intervention for Neurodegenerative Delay
OR	Odds Ratios
WHO	World Health Organization

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