Table 2. Conceptual and measurement model of the MD adherence scores

Instrument	Country	n	Age	Dietary Data	Conceptual model	measurement model
MD Indices based on positive or negative components						
Trichopoulou and collegues						
• 1995[30]	Greece	182	>70y	FFQ	(+) 1.High ratio of MUFA/SFA; 2.Moderate alcohol consumption; 3.High consumption of legumes; 4.High consumption of cereals (bread and potatoes); 5.High consumption of Fruit; 6.High consumption of Vegetables. (-) 7.Low consumption of meat and derivatives, 8.Low consumption of milk and dairy	8-components (g/d) Score ≥4 = High adherence Food (+): 1pt consumption > average and 0pt consumption < average Food (-): 1pt consumption < average and 0pt consumption > average.
• 2003[14]	Greece	22.043	20-86y	FFQ	The same components as the previous version but with the addition of one more, fish.	The score ranges from 0 (minimum adherence to MD) to 9 (maxim adherence to MD).
• 2005[43]	Denmark, France, Germany, UK, Spain, The Netherlans, Norway, Sweden	74.607	>60y	FFQ,14D DR	Same components as the 2003 version, but the lipid profile is modified. Monounsaturated fats and polyunsaturated fats are included in the numerator	Scores range from 0 (minimum adherence to MD) to 9 (maximum adherence to MD).
Scali and colleagues[44] (2001)	France	964	20-76y	FFQ	(+) 1.Olive oil; 2.Fish: white and oily; 3.Cereals: bread (B and Wh); pasta (B and Wh); rice (B and Wh) and breakfast cereals; 4.Fruit + Vegetables. (-) 5.Fresh and processed meat, 6.Saturated fats, and 7.Cholesterol	7 components. Each component is divided into three scores according to consumption Good MDQI: score of 5-7 Medium-to-Good MDQI: score of 8-10 Medium-to-Poor MDQI: score of 11-13 Poor MDQI: score >13
Sánchez-Villegas and colleagues (2002)[16]	Spain	3847	N.R	FFQ	(+) 1. High ratio of MUFA/SFA fats; 2. Moderate consumption of alcohol (30g/d M y 20g/d W); 3. High consumption of legumes; 4. High consumption of cereals (bread and potatoes); 5. High consumption of Fruits; 6. High consumption of Vegetables. (-) 7. Low consumption of meat and derivatives; 8. Low consumption of milk and derivatives.	8 components (g/d) The intake of each of the groups was standardised with the z value (observed mean/standard deviation). The MPD was turned into a percentage, where 100% was maximum adherence and 0% was minimum adherence.
Martinez-González and colleagues	Spain	342	<80y	FFQ	MPD: Includes an 'a priori' and a 'post hoc' score • 'a priori': combination of 8 components (+) 1.olive oil, 2.fibre, 3.Fruit, 4.Vegetable, 5.fish and 6.alcohol, (-) 7.meat and 8. Sum total of bread, pasta, rice. • 'post hoc': Each component is dichotomised into 2 categories.	Scores range from 5-40pt. Scores range from 0-8pt. Consumption of Vegetable, Fruit, olive oil, fibre, fish, and alcohol> average =1. Consumption of meat and cereals < average =1.
• 2002[34]						
• 2004[33]	Spain	342	<80y	FFQ	Fibre is substituted by the item: high consumption of Fruit and Vegetable. Legumes were added.	The consumption of each of the elements was divided into 2 categories, with the same cut-off points as above. Score range 0-9.

(continued on next table)

Table 2. Conceptual model of the MD adherence scores: items *(continued)*

Instrument	Country	n	Age	Dietary Data	Conceptual model	Measurement model
Serra-Majem and colleagues (2004)[11]	Spain	3850	2-24y	N.R[m]	(+) 1.Fruit or Fruit juices Fruit/d; 2.Two pieces of Fruit/d; 3.Raw or cooked Vegetable once/d; 4.Raw or cooked Vegetable > once/d; 5.Fish 2-3times/w; 6.Legumes> Once/w; 7.Pasta, rice ≥5 times/w; 8.Cereals or grains for breakfast; 9. Nuts 2-3times/w; 10.Olive oil at home; 11.Milk or derivatives for breakfast; 12.2 yoghurts and/or cheese (40g)/day. (-)13.Skipping breakfast; 14.Mass produced pastries for breakfast; 15. Sweets or candy every day; 16. Mass produced sweets for breakfast.	16 components Scored between 0 and 12p:The sum total of the scores is classified into: * >8pt =Optimum MD * 4-7pt =need improvement in the MD pattern * ≤ 3pt = very low quality MD.
Panagiotakos and colleagues (2006)[6]	Greece	3042	>18y	FFQ	(+) 1. Unrefined cereals (wholemeal bread, pasta, rice, other grains, biscuits); 2.Fruit; 3.Vegetables; 4. Legumes; 5.Potatoes; 6.Fish; 7.Alcohol intake (<300ml/d); 8.Olive oil. (-)9.Meat and meat products; 10.Chicken; 11.Full-fat dairy products.	11 components: Score: 0 and 55. Score 0-5 for food. Scores high = good adherence to MD. (+) 5 when consumed and 0 when not consumed daily. (-) Inverted score
Trichopoulos and colleagues (2004)[45]	Italy, Spain, Grece	N.R.	N.R.	FBSs[n]	(+) 1.Vegetable (including legumes); 2.Fruit; 3.Cereals; 4.Ratio of fats; 5.Alcoholic drinks (-) 6.Meat ; 7.Dairy products	7 variables: 1pt=consumption high above average in food (+) and consumption low below average in food (-)
Knoops and colleagues (2004)[46]	Spain, Grece, Switzerland, Italy. Belgium, Denmark, France, Portugal, Hungary, The Netherlands	2339	70-90y	DH[o]	1.Ratio MUFA/SFA; 2. Legumes, nuts, and seeds; 3.Grains; 4.Fruit; 5.Vegetable and potatoes; 6.Meat and derivatives; 7.Dairy products; and 8.Fish. Adjusted consumption according to calorie intake: M-2500Kcal, W-2000Kcal	8 variables: Score 0= low quality of diet Score 8= high quality of diet
Gerber (2006)[47] Med-DQI	France	964	30-77y	FFQ	(+) 1.Olive oil; 2.Fish; 3.Cereal; 4.Vegeables + Fruit. (-) 5. Meat; 6. Saturated fat (% energy); 7.Cholesterol	7 items. The score ranges from 0-14. Score 0: > consumption of food (+) and < consumption of food (-). Score 2: inverse case Good adherence: 1-4, Medium-good adherence: 5-7, Medium-poor: 8-10, Poor: 11-14
Buckland and colleagues (2009)[26]	Spain	41078	29-69y	FFQ, DH	(+) 1.Vegetable (excluding potatoes); 2.F (including dried fruits but excluding juices); 3.Legumes; 4.Fresh fish; 5.Cereals; 6.Olive oil; 7.Alcohol. (-)8.Meat; 9.Dairy products.	9 variables: Score 0-6= High low Score 7-10= medium adherence, Score 11-18: High adherence
Mariscal-Arcas and colleagues 2009[31]	Spain	318	18-46y	FFQ	8 Components typical of the MD + 3 micronutrients specific to pregnancy: 1.Iron, 2. calcium and 3. folic acid. Alcohol consumption was not taken into account.	The score ranges from 0-11 pt. Scoring 1pt≥ two thirds of recommended levels or if the W took nutritional supplements Scoring 0pt< the cut-off point

(continued on next table)

Table 2. Conceptual model of the MD adherence scores: items *(continued)*

Instrument	Country	n	Age	Dietary Data	Conceptual model	Measurement model
Schröder and colleagues.						
• 2004[48]	Spain	2871	25-74y	FFQ, 24hr DR	(+) 1.Cereals; 2.Vegetables; 3.Fruit; 4.Legumes; 5. Fish; 6. Nuts and 7.Alcohol (0g and >20= 1, 0.1-20g= 3). (-) 8. Meat and 9. Dairy.	9 components. The score ranges from 9-27 pt. (+) The lowest tertile = 1, medium= 2 and high =3 (-) Inverted score.
• 2011[32]	Spain	7146	55-80y	FFQ, MEDAS[p]	Score 1: 1.Olive oil as main fat; 2.Preference for white meat; 3.Tablespoons of olive oil ≥4times/d; 4.Vegetable 2portions/d; 5.Pieces of Fruit ≥3/d; 6.Red meat or sausages <once/d; 7. Animal fat<1portion/d; 8. Sugary drinks < one glass (100ml/d); 9.Red wine≥5 servings/week; 10.Legumes ≥3 portions/week; 11. Portions of fish≥3times/week; 12.Mass produced desserts and pastries<2v/s; 13.Nuts ≥3times/week; 14.Dishes cooked with tomato sauce, garlic; onion, leeks, sautéed with olive oil ≥2times/w. Score 0: For inverse cases	14 items. Each item was allocated a score of 1 or 0 depending on consumption. High scores = better adherence
• 2012[49]	Spain	102	3-80y	24hr DR	(+)1.Legumes 2.Green leafy and other Vegetable; 3.Fish; 4. Citrus and other Fruits; 5. Whole foods; 6.Olive oil; 7.Dried fruits and nuts and 8. Red wine (S3=1-2 glasses/d). (-) 9.Red meat, sausages; 10.Dairy products.	10 variables. Score 10= very low adherence and Score 30=optimum adherence (+) Tertile 1=low, Tertile 2=medium, Tertile 3=high (-) Tertile high=1, Tertile 2=medium, Tertile 2= low.
Benítez-Arciniega and colleagues (2011)[29]						
• mMDS	Spain	107	58y	FFQ, DR 24hr	(+) 1.Cereals; 2.Fruit; 3.Vegetable; 4.legumes; 5.fish; 6.olive oil; 7.nuts; 8.moderate consumption of wine (=20g). (-) 9.Meat (including chicken and sausages) and 10. Dairy.	10 components. The score ranges between 10-30pt. (+) Codified tertile: 1 (low) to 3 (high). (-)The score was inverted
• MLDS	Spain	107	58y	FFQ, DR 24hr	Adds 3 components to the mMDS[q]: 11. Sugary drinks; 12. Sweets and pastries; and 13. Fast food. The score was inverted	The resulting score ranges between 13-39pt.
MD score based on the diet quality index (DQI)						
Mariscal-Arcas and colleagues (2007)[12]	Spain	288	6-18y	FFQ, 24hr DR	Modifies the classification criterion for "empty-calorie food". 4 components, 1.Variety of diet (0-20pt), 2.Suitability (0-40pt), 3.Moderation (0-30pt) and 4.General balance (0-10pt).	The score ranges between 0-100.
MD score based on the MD pyramid						
Goulet and colleagues (2003)[50]	Canada	73	30-65y	FFQ	11components (frequency: size or times/d or w) Pyramid base: 1.grains; 2.Fruit; 3.Vegetable; 4.legumes; dried fruits; nuts and seeds; 5.olive oil and 6.fish. Middle level: 7.dairy (2-3 portions/d) and 8.chicken (3 portions/w). Apex of the pyramid: 9. red and processed meat,;10. sweets and pastries and 11.eggs.	The total score ranges between 0-44pt. High scores = good adherence to MD.

(continued on next table)

Table 2. ***Conceptual model of the MD adherence scores: items (continued)***

Instrument	Country	n	Age	Dietary Data	Conceptual model	Measurement model
Rumawas and colleagues (2009)[28]	USA	3021	N.R.	FFQ	Whole grain cereals; 2.Fruit; 3.Vegetable; 4.Dairy; 5.Red wine (M and W); 6.Fish and seafood; 7.Olives; legumes, nuts; 8.Potatoes and other root vegetables; 9.Eggs; 10.Chicken; 11.Sweets and pastries; 12.Meat; 13.Olive oil 10p= consumption, 5p= olive oil + vegetable oils, and 0pt= not consumed).	13 variables. With the exception of olive oil, each component was calculated between 0-10pt. Overconsumption deducted 1p proportionally for intake in excess of recommended amounts for each food group
Kanauchi and colleagues (2015)[51]	Japan	433	>30y	BDHQ, HDI	1Vegetable; 2.Fruit; 3.Grains; 4.Legumes; 5.Fish; 6.Red and processed meat; 7.Dairy; 8.Eggs; 9.Chicken; 10.Alcohol; 11.Ratio of MUFA/SAF fat.	11 variables. Values of 0 and 1 for each component. Alcohol, value 1 = consumption between 10-30g/d for M and MUFA/SFA= ratio out of 1.5. Score <5 = low adherence to MD
Monteagudo and colleagues (2015)[52]	Spain	1155	12-83y	FFQ	Foods consumed at each main meal (3pt): 1.Fruit; 2.Vegetable; 3.Cereals; 4. Olive oil. Foods consumed daily (2pt): 5. Nuts 6.Dairy. Foods consumed weekly (1pt): 7.Legumes; 8.Potatoes; 9.Eggs; 10.Fish; 11.White meat; 12.Red meat; 13.Sweets and pastries; 14.Fermented drinks.	14 variables. Total score: 0-24 for adults and the elderly 0-23 for adolescents (due to the exclusion of alcohol) 0: when the number of portions per meal, day, or week was high or low than recommended amounts.
Sotos-Prieto and colleagues (2014)[53]	Spain	988	40-55y	FFQ	Block 1: Consumption of foods. 1.Sweets and pastries; 2.Red Meat; 3.Processed Meat; 4.Egg; 5.Legumes; 6.White meat; 7.Fish and seafood; 8.Potatoes; 9.Low-fat dairy; 10.Nuts and olives; 11.Herbs, spices; 12.Fruit; 13.Vegetable; 14.Olive oil; 15.Cereals. Block 2: Dietary habits. 16.Water and herbal teas; 17.Wine; 18.Limiting salt in meals; 19.Preference for whole grain cereals; 20.Snacks; 21.Limiting snacking between meals; 22.Limiting sugar and sugary drinks. Block 3: Physical activity, social habits and daily living. 23.Physical activity; 24.Siesta; 25.Hours of sleep; 26.Watching TV; 27.Meeting up with friends; 28.Collective sports.	28 variables Score between 0 (bad Mediterranean style) and 28 (good Mediterranean style). If recommendations are observed = 1pt, if not observed =0pt.
MD score based on the characteristic components of the MD						
Alberti-Fidanza and colleagues • 1999[54]	Italy	N.R	40-59y	DH	MAI is computed using the % of energy intake of 4 food groups: 1.Carbohydrate group: bread, cereals, dried legumes, potatoes. 2. Protective food group: Vegetables, fresh legumes, F, fish, red wine, and vegetable oils. 3. Land animal food group: milk, cheese, meat, eggs, animal fats, and margarines. 4. Sweet food group: sugary drinks, cakes, pastries, biscuits, and sugars.	The MAI is obtained by dividing the sum total of groups 1 and 2 by the sum total of groups 3 and 4.

(continued on next table)

Table 2. Conceptual model of the MD adherence scores: items *(continued)*

Instrument	Country	n	Age	Dietary Data	Conceptual model	Measurement model
• 2004[55]	Italy	N.R	45-65Y	DH	MED: bread, cereals, potatoes, legumes, V, F, fish, red wine, and vegetable oils. NOT MED: milk, cheese, meat, eggs, animal fats and margarines, sugary drinks, cakes, pastries, biscuits and sugar	The MAI divides the sum total of % of energy taken from foods typical of the MD by the sum total of the % of foods that are not typical in the MD.
Woo and colleagues (2001)[56]	China, Australia USA	1010	24-74Y	FFQ	1.Ratio of MUFA/SFA fats; 2. Moderate alcohol consumption (H<10g/d); 3.high consumption of legumes; 4.high consumption of cereals; 5.high consumption of Fruit; 6.high consumption of Vegetable; 7.low consumption of meat and derivatives; 8.low consumption of dairy and derivatives	8 variables The score is obtained by adjusting according to calorie intake: M-2500Kcal and W-2000Kcal. M: Score ≥ 4: High adherence and W: Score ≥ 3: High adherence

MD, Mediterranean diet; FFQ, food frequency questionnaire; MUFA/SFA, Monounsaturated Fatty Acids/ Saturated Fatty Acids; g/d, grams/day; pt, point; DR,14-day diet record; B, Brown or Whole wheat; Wh, White; MDQI, Mediterranean diet quality index; M, men; W, woman; MEP, Mediterranean Diet Pattern; N.R, Not reported; FBSs, Food availability dara record in the balance sheet; DH, dietary history; MEDAS, Mediterranean diet adherence screener; mMDS; Modified Mediterranean Diet Score; MLDS, Mediterranean-Like Diet Score; BDHQ, Brief self-administered diet history questionnaire; HDI, Healthy diet indicator; MAI, The Mediterranean Adequacy Index; MED, The Mediterranean-Style Diet.