

# III. Psychological Examinations

## [1. Depression](#)

### 1) Center for Epidemiologic Studies Depression Scale (CES-D)

The Japanese version of the scale, same as the original, comprises 20 items with 4 options. This scale consists of 4 subscales as follows: somatic and retarded activity, depressed affect, positive affect, and interpersonal relations. Higher scores indicate higher depressive symptoms. A person with total score at and above 16 is considered to have clinically significant depressive tendency.

CES-D :Center for Epidemiologic Studies Depression Scale (20 items. possible range 0-60)

CES-D subscale 1: somatic and retarded activity (7 items. possible range 0-21)

CES-D subscale 2: depressed affect (7 items. possible range 0-21)

CES-D subscale 3: positive affect (4 items. possible range 0-12)

CES-D subscale 4: interpersonal relations (2 items. possible range 0-6)

CES-D: parameter of distribution using cutoff score (cutoff score=15/16)

## [2. Subjective Well-being](#)

### 1) Life Satisfaction Index-K (LSI-K)

The LSI-K has 9 items with 2- or 3-point response format to measure overall subjective well-being. This scale also consists of 3 subscales including: satisfaction with life as a whole, psychological stability, and evaluation of own aging. Response to 3-point scale is dichotomized when calculating total score, so that the possible total score range is 0 to 9. Higher scores indicate higher life satisfaction.

LSI-K: total score of 3 subscales (9 items. possible range 0-9)

LSI-K subscale 1: satisfaction with life as a whole (4 items. possible range 0-4)

LSI-K subscale 2: psychological stability (3 items. possible range 0-3)

LSI-K subscale 3: evaluation of own aging (2 items. possible range 0-2)

## [3. Personality](#)

## 1) Psychological Well-Being Scale (PWB)

This scale comprises 43 items (6 options) to measure psychological well-being. This scale consists of 6 dimensions: personal growth, purpose in life, autonomy, self-acceptance, environmental mastery, and positive relations with others. Higher scores indicate higher well-being.

PWB subscale 1: personal growth (8 items. possible range 8-48)

PWB subscale 2: purpose in life (8 items. possible range 8-48)

PWB subscale 3: autonomy (8 items. possible range 8-48)

PWB subscale 4: self-acceptance (7 items. possible range 7-42)

PWB subscale 5: environmental mastery (6 items. possible range 6-36) PWB subscale 6: positive relations with others (6 items. possible range 6-36)

## 2) Attitude toward Death Scale for the middle-aged and elderly Adults (ATDS-A)

Multidimensional attitudes toward death are measured using 31-item scale (5 options).

Five subscales and an extra two indices of the scale are as follows: fear of death, belief in existence of afterlife, intention to live out own life, meaning of death for life, approval of death with dignity, experience of thinking over death, and frequency of thinking about death.

Higher scores indicate stronger tendency of each subscale or index.

NOTE: Construction of this scale was partially revised from the 7th wave.

ATDS-A subscale 1: fear of death (9 items. possible range 9-45)

ATDS-A subscale 2: belief in existence of afterlife (4 items. possible range 4-20)

ATDS-A subscale 3: intention to live out own life (4 items. possible range 4-20)

ATDS-A subscale 4: meaning of death for life (5 items. possible range 5-25)

ATDS-A subscale 5: approval of death with dignity (3 items. possible range 3-15)

ATDS-A item 29: experience of thinking over death (1 item. possible range 1-5)

ATDS-A item 30: frequency of thinking about death (1 item. possible range 1-5)

## [4. Activities of Daily Living \(ADL\)](#)

### 1) Tokyo Metropolitan Institute of Gerontology (TMIG) Index of Competence

This scale comprises 13 items to measure the higher-level competence including Instrumental self-maintenance, Intellectual activity, and Social role. Each item has Yes (1)/No (0) response options. Higher score indicates higher competence level.

TMIG index of competence: total score of 13 items (possible range 0-13)

## [5. Intelligence and cognitive function](#)

### 1) Wechsler Adult Intelligence Scale-Revised Short Forms (WAIS-R-SF)

This short form of WAIS-R provides cost-effective and useful estimates of intelligence particularly for elderly participants since their attention and motivation could diminish easily if testing becomes prolonged. WAIS-R-SF has the following four subtests: information, similarities, picture completion, and digit symbol. Estimated intelligence quotient (EIQ) is derived from all four subtests. Intelligence level of individuals are ranked according to EIQ scores as low ( $EIQ < 80$ ), middle ( $80 \leq EIQ < 120$ ), and high ( $120 \leq EIQ$ ).

WAIS-R-SF: estimated intelligence quotient (EIQ)

WAIS-R-SF: parameter of distribution by EIQ level

WAIS-R-SF subtest 1: information (29 items. possible range 0-29)

WAIS-R-SF subtest 2: similarities (14 items. possible range 0-28)

WAIS-R-SF subtest 3: picture completion (21 items. possible range 0-21)

WAIS-R-SF subtest 4: digit symbol (possible range 0-93)

### 2) Short-term memory function

We also assessed the WAIS-R digit span test (forwards and backwards) for estimating participants' short-term memory function.

Short-term memory function: WAIS-R digit span (possible range 0-28)

### 3) Mini-Mental State Examination (MMSE)

MMSE is a brief, easily scored test of several cognitive functions. This scale comprises questions concerning orientation in place and time, immediate and delayed recall of three words, attention and calculation, language and praxis, and visual construction. Cognitive impaired person might fall in the total score of 23 or less in the scale.

MMSE: total score of 30 items (possible range 0-30)

MMSE: parameter of distribution using cutoff score (cutoff score=23/24)

## 6. Other measures

### 1) Life-events Checklist

By using a life event checklist (9 items), participants are asked to report the occurrence of each event between the 7th and this examinations in the NILS-LSA. Total number of events experienced is calculated by summing up the responses to the list.

Total number of life events experienced between 7th and this examinations (possible range 0-9)

### 2) Work Family Balance Scale (WFB)

The WFB scale has 16 items (5 options) to measure conflict and facilitation between work and family life bidirectionally (work-to-family, family-to-work). This scale consists of 4 subscales: work-to-family conflict, family-to-work conflict, work-to-family facilitation, and family-to-work facilitation. Higher score of work-to-family conflict and family-to-work conflict means higher interrole conflict. And higher score of work-to-family facilitation and family-to-work facilitation means more positive facilitation. Only participants who have job respond to this scale.

WFB subscale 1: work-to-family conflict (5 items, possible range 5-25/ only employed person)

WFB subscale 2: family-to-work conflict (5 items, possible range 5-25/ only employed person)

WFB subscale 3: work-to-family facilitation (3 items, possible range 3-15/ only employed person)

WFB subscale 4: family-to-work facilitation (3 items, possible range 3-15/ only employed person)

## 7. Background examinations

State of employment

Marital status

State of habitation

Sum of family annual income

Level of satisfaction in annual income

## 1. Depression

### 1) Center for Epidemiologic Studies Depression Scale (CES-D)

The Japanese version of the scale, same as the original, comprises 20 items with 4 options.

This scale consists of 4 subscales as follows: somatic and retarded activity, depressed affect, positive affect, and interpersonal relations.

Higher scores indicate higher depressive symptoms.

A person with total score at and above 16 is considered to have clinically significant depressive tendency.

CES-D: total score of 4 subscales (20 items. possible range 0-60)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	6.0	6.2	133	5.8	6.1	248	5.7	6.0	291	6.8	6.3	243	8.5	8.0	120	6.3	6.4	1035
Female	8.2	7.9	149	7.8	6.9	273	7.3	7.1	260	7.3	7.0	233	9.3	8.5	123	7.8	7.3	1038
Total	7.2	7.2	282	6.9	6.6	521	6.4	6.6	551	7.1	6.7	476	8.9	8.3	243	7.1	6.9	2073

CES-D subscale 1: somatic and retarded activity (7 items. possible range 0-21)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	1.8	2.4	134	1.6	2.4	249	1.9	2.4	292	2.4	2.7	245	3.0	3.3	122	2.1	2.6	1042
Female	2.5	3.0	149	2.5	2.7	274	2.7	2.9	263	2.5	2.7	234	3.6	3.3	125	2.7	2.9	1045
Total	2.2	2.7	283	2.1	2.6	523	2.3	2.7	555	2.4	2.7	479	3.3	3.3	247	2.4	2.8	2087

CES-D subscale 2: depressed affect (7 items. possible range 0-21)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	1.4	2.1	133	1.4	2.0	249	1.2	2.0	293	1.6	2.1	245	2.0	2.8	121	1.4	2.2	1041
Female	2.1	2.8	149	2.1	2.6	274	1.7	2.8	263	1.6	2.7	235	2.3	3.2	126	1.9	2.8	1047
Total	1.8	2.6	282	1.7	2.4	523	1.4	2.4	556	1.6	2.4	480	2.2	3.0	247	1.7	2.5	2088

CES-D subscale 3: positive affect (4 items. possible range 0-12)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	2.5	2.4	134	2.6	2.5	250	2.4	2.4	294	2.6	2.6	247	3.2	2.8	122	2.6	2.5	1047
Female	3.2	2.7	149	3.0	2.6	273	2.8	2.6	263	3.0	2.6	237	3.2	2.9	128	3.0	2.7	1050
Total	2.9	2.6	283	2.8	2.5	523	2.6	2.5	557	2.8	2.6	484	3.2	2.9	250	2.8	2.6	2097

CES-D subscale 4: interpersonal relations (2 items. possible range 0-6)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	0.3	0.7	134	0.2	0.6	250	0.2	0.6	294	0.3	0.7	247	0.3	0.7	122	0.2	0.7	1047
Female	0.3	0.8	149	0.3	0.7	274	0.2	0.6	263	0.2	0.7	237	0.2	0.8	127	0.3	0.7	1050
Total	0.3	0.7	283	0.2	0.7	524	0.2	0.6	557	0.3	0.7	484	0.3	0.7	249	0.2	0.7	2097

CES-D: parameter of distribution using cutoff score (cutoff score=15/16)

		40-49yr		50-59yr		60-69yr		70-79yr		80yr-		Total	
		N	%	N	%	N	%	N	%	N	%	N	%
Under score of 16	Male	123	92.5	231	93.1	265	91.1	217	89.3	99	82.5	935	90.3
	Female	124	83.2	236	86.4	232	89.2	208	89.3	95	77.2	895	86.2
	Total	247	87.6	467	89.6	497	90.2	425	89.3	194	79.8	1830	88.3
At and above score of 16	Male	10	7.5	17	6.9	26	8.9	26	10.7	21	17.5	100	9.7
	Female	25	16.8	37	13.6	28	10.8	25	10.7	28	22.8	143	13.8
	Total	35	12.4	54	10.4	54	9.8	51	10.7	49	20.2	243	11.7

## 2. Subjective Well-being

### 1) Life Satisfaction Index-K (LSI-K)

The LSI-K has 9 items with 2- or 3-point response format to measure overall subjective well-being.

This scale also consists of 3 subscales including: satisfaction with life as a whole, psychological stability, and evaluation of own aging.

Response to 3-point scale is dichotomized when calculating total score, so that the possible total score range is 0 to 9. Higher scores indicate higher life satisfaction.

LSI-K: total score of 3 subscales (9 items. possible range 0-9)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	5.6	1.9	134	5.6	1.8	250	5.7	2.1	293	5.6	2.2	246	5.0	2.3	122	5.5	2.0	1045
Female	5.3	2.1	149	5.6	2.0	274	5.5	2.0	263	5.6	2.2	237	4.9	2.3	127	5.4	2.1	1050
Total	5.5	2.0	283	5.6	1.9	524	5.6	2.0	556	5.6	2.2	483	5.0	2.3	249	5.5	2.1	2095

LSI-K subscale 1: satisfaction with life as a whole (4 items. possible range 0-4)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	1.9	1.2	134	2.0	1.1	250	2.2	1.2	293	2.3	1.2	246	2.2	1.3	122	2.1	1.2	1045
Female	1.8	1.2	149	2.1	1.2	274	2.1	1.2	263	2.3	1.3	237	2.4	1.3	128	2.1	1.2	1051
Total	1.9	1.2	283	2.1	1.2	524	2.2	1.2	556	2.3	1.3	483	2.3	1.3	250	2.1	1.2	2096

LSI-K subscale 2: psychological stability (3 items. possible range 0-3)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	2.0	0.9	134	1.9	0.9	250	1.9	0.9	293	1.9	0.9	246	1.8	1.0	122	1.9	0.9	1045
Female	1.8	0.9	149	1.9	0.9	274	1.8	0.9	264	1.8	0.9	237	1.5	1.0	127	1.8	0.9	1051
Total	1.9	0.9	283	1.9	0.9	524	1.9	0.9	557	1.8	0.9	483	1.7	1.0	249	1.8	0.9	2096

LSI-K subscale 3: evaluation of own aging (2 items. possible range 0-2)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	1.7	0.6	134	1.7	0.6	250	1.6	0.6	293	1.4	0.7	246	1.0	0.8	123	1.5	0.7	1046
Female	1.7	0.6	149	1.6	0.6	274	1.6	0.7	264	1.5	0.7	237	1.0	0.8	128	1.5	0.7	1052
Total	1.7	0.6	283	1.6	0.6	524	1.6	0.7	557	1.5	0.7	483	1.0	0.8	251	1.5	0.7	2098



### 3. Personality

#### 1) Psychological Well-Being Scale (PWB)

This scale comprises 43 items (6 options) to measure psychological well-being.

This scale consists of 6 dimensions: personal growth, purpose in life, autonomy, self-acceptance, environmental mastery, and positive relations with others.

Higher scores indicate higher well-being.

PWB subscale 1: personal growth (8 items. possible range 8–48)

	40–49yr			50–59yr			60–69yr			70–79yr			80yr–			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	37.0	6.1	134	36.2	5.9	250	34.9	6.4	293	33.5	6.8	246	31.1	6.5	123	34.7	6.6	1046
Female	36.2	6.3	149	34.8	6.8	274	33.6	6.5	263	33.1	6.3	237	31.9	6.8	128	34.0	6.7	1051
Total	36.6	6.2	283	35.5	6.4	524	34.3	6.5	556	33.3	6.5	483	31.5	6.6	251	34.3	6.6	2097

PWB subscale 2: purpose in life (8 items. possible range 8–48)

	40–49yr			50–59yr			60–69yr			70–79yr			80yr–			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	34.5	7.3	134	34.9	6.6	250	36.1	6.4	293	35.6	6.6	246	35.0	6.6	123	35.4	6.7	1046
Female	33.2	7.4	149	33.9	7.4	274	34.5	7.1	263	35.4	6.3	237	34.8	7.2	128	34.4	7.1	1051
Total	33.8	7.3	283	34.4	7.1	524	35.3	6.8	556	35.5	6.4	483	34.9	6.9	251	34.9	6.9	2097

PWB subscale 3: autonomy (8 items. possible range 8–48)

	40–49yr			50–59yr			60–69yr			70–79yr			80yr–			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	33.6	5.7	134	33.6	5.1	250	34.9	5.1	293	34.7	5.2	246	34.7	5.1	123	34.4	5.2	1046
Female	33.1	5.3	149	32.2	5.7	274	34.2	5.3	264	34.0	5.4	237	33.6	5.4	128	33.4	5.5	1052
Total	33.3	5.5	283	32.8	5.5	524	34.6	5.2	557	34.4	5.3	483	34.2	5.2	251	33.9	5.4	2098

PWB subscale 4: self-acceptance (7 items. possible range 7–42)

	40–49yr			50–59yr			60–69yr			70–79yr			80yr–			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	29.0	5.1	134	29.2	4.8	250	30.1	4.7	293	29.7	4.9	246	29.9	4.9	121	29.6	4.9	1044
Female	27.8	5.6	149	28.0	5.3	274	29.2	5.0	264	29.0	5.0	237	30.3	5.2	128	28.7	5.2	1052
Total	28.3	5.4	283	28.6	5.1	524	29.7	4.9	557	29.4	5.0	483	30.1	5.0	249	29.2	5.1	2096

PWB subscale 5: environmental mastery (6 items. possible range 6–36)

	40–49yr			50–59yr			60–69yr			70–79yr			80yr–			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	25.4	3.8	134	25.3	3.6	250	25.7	3.9	293	25.7	4.2	246	25.4	4.6	123	25.5	4.0	1046
Female	24.6	3.7	149	24.9	4.3	274	25.1	4.2	264	25.1	4.4	237	25.6	4.6	128	25.0	4.2	1052
Total	25.0	3.7	283	25.1	4.0	524	25.4	4.0	557	25.4	4.3	483	25.5	4.6	251	25.3	4.1	2098

PWB subscale 6: positive relations with others (6 items. possible range 6–36)

	40–49yr			50–59yr			60–69yr			70–79yr			80yr–			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	23.8	4.4	133	23.4	4.4	250	24.1	4.3	293	24.6	4.2	246	24.8	4.2	123	24.1	4.3	1045
Female	24.0	4.6	149	24.2	4.3	274	24.4	4.6	263	25.6	4.2	237	25.4	4.6	128	24.7	4.5	1051
Total	23.9	4.5	282	23.8	4.4	524	24.3	4.4	556	25.1	4.2	483	25.1	4.5	251	24.4	4.4	2096

## 2) Attitude toward Death Scale for the middle-aged and elderly Adults (ATDS-A)

Multidimensional attitudes toward death are measured using 31-item scale (5 options).

Five subscales and an extra two indices of the scale are as follows: fear of death, belief in existence of afterlife, intention to live out own life, meaning of death for life, approval of death with dignity, experience of thinking over death, and frequency of thinking about death.

Higher scores indicate stronger tendency of each subscale or index.

NOTE: Construction of this scale was partially revised from the 7th wave.

ATDS-A subscale 1: fear of death (9 items. possible range 9–45)

	40–49yr			50–59yr			60–69yr			70–79yr			80yr–			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	24.6	7.3	134	23.4	7.1	248	21.9	6.8	288	21.6	7.0	241	20.1	7.7	111	22.4	7.2	1022
Female	23.2	7.7	148	23.4	7.7	272	21.6	7.2	255	21.1	6.6	225	20.5	6.4	112	22.1	7.3	1012
Total	23.9	7.5	282	23.4	7.4	520	21.7	7.0	543	21.4	6.8	466	20.3	7.1	223	22.2	7.2	2034

ATDS-A subscale 2: belief in existence of afterlife (4 items. possible range 4–20)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	10.5	3.6	134	10.9	3.5	248	9.5	3.8	288	9.4	3.8	241	10.2	4.1	111	10.0	3.8	1022
Female	11.9	3.3	148	12.1	3.2	272	10.9	3.4	255	11.1	3.6	225	11.1	3.8	112	11.4	3.5	1012
Total	11.2	3.5	282	11.5	3.4	520	10.1	3.7	543	10.2	3.8	466	10.7	4.0	223	10.7	3.7	2034

ATDS-A subscale 3: intention to live out own life (4 items. possible range 4-20)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	17.6	2.2	134	17.4	2.6	248	17.3	2.7	288	18.0	2.5	241	18.0	2.7	111	17.6	2.6	1022
Female	17.5	2.5	148	17.8	2.5	272	18.0	2.3	255	18.3	2.0	224	18.3	2.3	113	18.0	2.3	1012
Total	17.6	2.4	282	17.6	2.6	520	17.6	2.5	543	18.1	2.3	465	18.2	2.5	224	17.8	2.5	2034

ATDS-A subscale 4: meaning of death for life (5 items. possible range 5-25)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	15.1	3.6	134	15.5	3.4	248	15.3	3.5	288	15.8	3.5	241	16.5	3.6	110	15.6	3.5	1021
Female	15.4	3.1	148	15.8	3.3	272	15.7	3.2	255	16.3	3.2	223	16.8	4.0	111	15.9	3.3	1009
Total	15.2	3.4	282	15.6	3.4	520	15.5	3.4	543	16.1	3.4	464	16.6	3.8	221	15.7	3.4	2030

ATDS-A subscale 5: approval of death with dignity (3 items. possible range 3-15)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	12.7	1.9	134	12.6	2.1	248	12.9	1.8	288	12.9	1.9	241	12.6	2.5	111	12.8	2.0	1022
Female	12.7	1.9	148	13.0	1.6	272	13.0	1.7	255	13.3	1.6	225	13.2	2.0	112	13.1	1.7	1012
Total	12.7	1.9	282	12.8	1.9	520	13.0	1.8	543	13.1	1.8	466	12.9	2.3	223	12.9	1.9	2034

ATDS-A item 29: experience of thinking over death (1 item. possible range 1-5)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	2.8	1.2	134	2.7	1.1	248	2.6	1.1	289	2.5	1.1	241	2.7	1.2	110	2.6	1.1	1022
Female	2.9	1.2	148	2.9	1.1	272	2.8	1.1	255	2.7	1.1	225	2.9	1.1	113	2.8	1.1	1013
Total	2.8	1.2	282	2.8	1.1	520	2.7	1.1	544	2.6	1.1	466	2.8	1.2	223	2.7	1.1	2035

ATDS-A item 30: frequency of thinking about death (1 item. possible range 1-5)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	1.9	0.9	134	1.9	1.0	248	1.9	0.9	289	2.0	0.9	241	2.1	1.0	110	2.0	0.9	1022
Female	1.9	0.9	148	2.1	1.0	272	2.2	1.0	255	2.1	0.9	225	2.4	1.2	113	2.1	1.0	1013
Total	1.9	0.9	282	2.0	1.0	520	2.1	1.0	544	2.1	0.9	466	2.3	1.1	223	2.0	1.0	2035

#### 4. Activities of Daily Living (ADL)

##### 1) Tokyo Metropolitan Institute of Gerontology (TMIG) Index of Competence

This scale comprises 13 items to measure the higher-level competence including Instrumental self-maintenance, Intellectual activity, and Social role.

Each item has Yes (1)/No (0) response options.

Higher score indicates higher competence level.

TMIG index of competence: total score of 13 items (possible range 0–13)

	40–49yr			50–59yr			60–69yr			70–79yr			80yr–			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	11.7	1.4	134	11.9	1.2	250	12.0	1.2	294	11.9	1.6	247	11.3	2.3	123	11.8	1.5	1048
Female	11.9	1.4	149	12.2	1.1	274	12.2	1.1	264	12.4	1.0	236	11.2	2.3	128	12.1	1.4	1051
Total	11.8	1.4	283	12.0	1.2	524	12.1	1.2	558	12.1	1.3	483	11.3	2.3	251	12.0	1.4	2099

#### 5. Intelligence and cognitive function

##### 1) Wechsler Adult Intelligence Scale–Revised Short Forms (WAIS–R–SF)

This short form of WAIS–R provides cost-effective and useful estimates of intelligence particularly for elderly participants since their attention and motivation could diminish easily if testing becomes prolonged.

WAIS–R–SF has the following four subtests: information, similarities, picture completion, and digit symbol.

Estimated intelligence quotient (EIQ) is derived from all four subtests.

Intelligence level of individuals are ranked according to EIQ scores as low ( $EIQ < 80$ ), middle ( $80 \leq EIQ < 120$ ), and high ( $120 \leq EIQ$ ).

WAIS–R–SF: estimated intelligence quotient (EIQ)

	40–49yr			50–59yr			60–69yr			70–79yr			80yr–			Total		
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	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	114.6	12.9	135	123.3	10.7	249	123.3	11.5	294	118.0	14.2	246	107.3	14.7	120	119.1	13.6	1044
Female	116.9	14.4	148	122.1	11.7	274	122.4	10.8	264	116.1	13.8	236	102.1	13.4	128	117.7	14.1	1050
Total	115.8	13.7	283	122.7	11.2	523	122.8	11.2	558	117.1	14.0	482	104.6	14.2	248	118.4	13.9	2094

WAIS-R-SF: parameter of distribution by EIQ level

		40-49yr		50-59yr		60-69yr		70-79yr		80yr-		Total	
		N	%	N	%	N	%	N	%	N	%	N	%
low (EIQ<80)	Male	0	0.0	0	0.0	0	0.0	4	1.6	4	3.3	8	0.8
	Female	2	1.4	1	0.4	0	0.0	0	0.0	7	5.5	10	1.0
	Total	2	0.7	1	0.2	0	0.0	4	0.8	11	4.4	18	0.9
middle (80≤EIQ<120)	Male	91	67.4	87	34.9	95	32.3	122	49.6	91	75.8	486	46.6
	Female	78	52.7	95	34.7	85	32.2	136	57.6	111	86.7	505	48.1
	Total	169	59.7	182	34.8	180	32.3	258	53.5	202	81.5	991	47.3
high (120≤EIQ)	Male	44	32.6	162	65.1	199	67.7	120	48.8	25	20.8	550	52.7
	Female	68	45.9	178	65.0	179	67.8	100	42.4	10	7.8	535	51.0
	Total	112	39.6	340	65.0	378	67.7	220	45.6	35	14.1	1085	51.8

WAIS-R-SF subtest 1: information (29 items. possible range 0-29)

		40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
		Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male		17.3	5.0	135	18.7	4.9	249	19.0	5.5	294	17.2	5.7	247	15.0	5.9	122	17.8	5.6	1047





Male	72.6	11.0	135	71.1	11.9	250	61.6	11.1	294	48.1	12.5	246	35.4	11.6	121	59.1	17.0	1046
Female	77.7	10.2	149	74.3	11.4	274	65.3	11.3	264	51.1	12.2	236	35.4	9.8	128	62.6	17.7	1051
Total	75.3	10.9	284	72.8	11.8	524	63.3	11.3	558	49.6	12.4	482	35.4	10.7	249	60.8	17.5	2097

## 2) Short-term memory function

We also assessed the WAIS-R digit span test (forwards and backwards) for estimating participants' short-term memory function.

Short-term memory function: WAIS-R digit span (possible range 0-28)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	15.2	3.5	135	14.7	3.9	250	12.9	3.7	294	11.2	3.2	246	9.9	3.0	123	12.9	3.9	1048
Female	14.9	3.9	149	14.4	3.7	274	12.5	3.4	263	11.2	3.3	235	9.8	3.2	128	12.7	3.9	1049
Total	15.0	3.7	284	14.6	3.8	524	12.7	3.6	557	11.2	3.2	481	9.9	3.1	251	12.8	3.9	2097

## 3) Mini-Mental State Examination (MMSE)

MMSE is a brief, easily scored test of several cognitive functions.

This scale comprises questions concerning orientation in place and time, immediate and delayed recall of three words, attention and calculation, language and praxis, and visual construction.

Cognitive impaired person might fall in the total score of 23 or less in the scale.

MMSE: total score of 30 items (possible range 0-30)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	28.9	1.2	135	28.6	1.4	250	28.1	1.6	290	27.4	2.5	244	26.1	2.7	119	27.9	2.1	1038
Female	29.1	1.0	149	28.9	1.3	274	28.6	1.4	264	28.0	1.9	235	26.5	2.8	127	28.3	1.9	1049
Total	29.0	1.1	284	28.7	1.4	524	28.3	1.5	554	27.7	2.2	479	26.3	2.8	246	28.1	2.0	2087

MMSE: parameter of distribution using cutoff score (cutoff score=23/24)

		40-49yr		50-59yr		60-69yr		70-79yr		80yr-		Total	
		N	%	N	%	N	%	N	%	N	%	N	%
Score of 24 and over	Male	135	100.0	248	99.2	285	98.3	234	95.9	103	86.6	1005	96.8
	Female	149	100.0	273	99.6	264	100.0	226	96.2	114	89.8	1026	97.8
	Total	284	100.0	521	99.4	549	99.1	460	96.0	217	88.2	2031	97.3
Score of 23 or less	Male	0	0.0	2	0.8	5	1.7	10	4.1	16	13.4	33	3.2
	Female	0	0.0	1	0.4	0	0.0	9	3.8	13	10.2	23	2.2
	Total	0	0.0	3	0.6	5	0.9	19	4.0	29	11.8	56	2.7

## 6. Other measures

### 1) Life-events Checklist

By using a life event checklist (9 items), participants are asked to report the occurrence of each event between the 7th and this examinations in the NILS-LSA.

Total number of events experienced is calculated by summing up the responses to the list.

Total number of life events experienced between 7th and this examinations (possible range 0–9)

	40–49yr			50–59yr			60–69yr			70–79yr			80yr–			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	0.7	0.8	135	0.7	0.8	250	0.8	0.9	293	0.9	0.9	247	0.6	0.9	123	0.8	0.9	1048
Female	0.8	0.8	149	0.8	0.9	274	0.9	1.1	264	1.1	1.1	237	0.9	0.9	128	0.9	1.0	1052
Total	0.7	0.8	284	0.7	0.9	524	0.9	1.0	557	1.0	1.0	484	0.8	0.9	251	0.8	1.0	2100

## 2) Work Family Balance Scale (WFB)

The WFB scale has 16 items (5 options) to measure conflict and facilitation between work and family life bidirectionally (work-to-family, family-to-work).

This scale consists of 4 subscales: work-to-family conflict, family-to-work conflict, work-to-family facilitation, and family-to-work facilitation. Higher score of work-to-family conflict and family-to-work conflict means higher interrole conflict.

And higher score of work-to-family facilitation and family-to-work facilitation means more positive facilitation.

Only participants who have job respond to this scale.

WFB subscale 1: work-to-family conflict (5 items, possible range 5–25/ only employed person)

	40–49yr			50–59yr			60–69yr			70–79yr			80yr–			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	13.6	4.5	130	12.5	4.0	247	11.8	4.1	217	11.2	4.2	59	12.4	4.3	19	12.4	4.2	672
Female	12.6	4.9	120	12.2	4.4	210	11.5	4.4	117	11.0	5.2	48	8.5	4.2	11	12.0	4.7	506
Total	13.1	4.7	250	12.4	4.2	457	11.7	4.2	334	11.1	4.6	107	11.0	4.6	30	12.2	4.4	1178

WFB subscale 2: family-to-work conflict (5 items, possible range 5-25/ only employed person)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	9.0	3.4	130	8.8	3.1	247	8.6	3.3	217	9.2	3.7	59	11.3	4.6	19	8.9	3.4	672
Female	10.2	4.3	120	9.9	3.8	210	9.5	3.8	117	9.2	4.4	48	7.5	3.3	11	9.8	4.0	506
Total	9.6	3.9	250	9.3	3.5	457	8.9	3.5	334	9.2	4.0	107	9.9	4.5	30	9.3	3.7	1178

WFB subscale 3: work-to-family facilitation (3 items, possible range 3-15/ only employed person)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	9.2	2.4	130	9.3	2.3	247	9.3	2.5	215	9.3	2.8	59	10.7	2.9	19	9.3	2.5	670
Female	8.3	2.7	120	8.7	2.3	210	8.9	2.6	117	9.6	2.9	48	10.5	3.3	11	8.8	2.6	506
Total	8.8	2.6	250	9.0	2.3	457	9.1	2.6	332	9.4	2.8	107	10.6	3.0	30	9.1	2.5	1176

WFB subscale 4: family-to-work facilitation (3 items, possible range 3-15/ only employed person)

	40-49yr			50-59yr			60-69yr			70-79yr			80yr-			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male	10.2	2.1	130	10.1	2.3	247	9.9	2.4	217	10.1	2.7	59	11.1	2.6	19	10.1	2.3	672
Female	9.5	2.7	120	9.7	2.4	210	9.6	2.7	117	10.2	2.5	48	11.4	2.3	11	9.7	2.6	506
Total	9.8	2.4	250	9.9	2.3	457	9.8	2.5	334	10.1	2.6	107	11.2	2.5	30	9.9	2.4	1178

## 7. Background examinations

### State of employment

		40-49yr		50-59yr		60-69yr		70-79yr		80yr-		Total	
		N	%	N	%	N	%	N	%	N	%	N	%
Not recorded	Male	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Female	0	0.0	1	0.4	0	0.0	0	0.0	0	0.0	1	0.1
	Total	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0	1	0.0
Inoccupation	Male	4	3.0	3	1.2	75	25.5	187	75.7	101	82.1	370	35.3
	Female	1	0.7	8	2.9	30	11.4	55	23.2	82	64.1	176	16.7
	Total	5	1.8	11	2.1	105	18.8	242	50.0	183	72.9	546	26.0
Housewife or househusband	Male	0	0.0	0	0.0	1	0.3	1	0.4	3	2.4	5	0.5
	Female	28	18.8	56	20.4	117	44.3	133	56.1	35	27.3	369	35.1
	Total	28	9.9	56	10.7	118	21.1	134	27.7	38	15.1	374	17.8
Regular employment	Male	118	87.4	212	84.8	69	23.5	11	4.5	2	1.6	412	39.3
	Female	30	20.1	39	14.2	12	4.5	1	0.4	1	0.8	83	7.9
	Total	148	52.1	251	47.9	81	14.5	12	2.5	3	1.2	495	23.6
Non-regular employment	Male	0	0.0	6	2.4	88	29.9	27	10.9	3	2.4	124	11.8
	Female	84	56.4	146	53.3	86	32.6	24	10.1	3	2.3	343	32.6
	Total	84	29.6	152	29.0	174	31.2	51	10.5	6	2.4	467	22.2
Others (self-management, worker in agriculture, forestry and	Male	13	9.6	29	11.6	61	20.7	21	8.5	14	11.4	138	13.2
	Female	6	4.0	24	8.8	19	7.2	24	10.1	7	5.5	80	7.6

fishery, etc.)	Total	19	6.7	53	10.1	80	14.3	45	9.3	21	8.4	218	10.4
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### Marital status

		40-49yr		50-59yr		60-69yr		70-79yr		80yr-		Total	
		N	%	N	%	N	%	N	%	N	%	N	%
Unmarried	Male	13	9.6	15	6.0	7	2.4	1	0.4	0	0.0	36	3.4
	Female	22	14.8	8	2.9	5	1.9	3	1.3	2	1.6	40	3.8
	Total	35	12.3	23	4.4	12	2.2	4	0.8	2	0.8	76	3.6
Already married (covers unregistered marriage)	Male	119	88.1	223	89.2	275	93.5	231	93.5	110	89.4	958	91.3
	Female	122	81.9	234	85.4	226	85.6	172	72.6	34	26.6	788	74.9
	Total	241	84.9	457	87.2	501	89.8	403	83.3	144	57.4	1746	83.1
Separation	Male	1	0.7	2	0.8	1	0.3	0	0.0	0	0.0	4	0.4
	Female	4	2.7	4	1.5	2	0.8	1	0.4	0	0.0	11	1.0
	Total	5	1.8	6	1.1	3	0.5	1	0.2	0	0.0	15	0.7
Divorced	Male	1	0.7	7	2.8	5	1.7	2	0.8	0	0.0	15	1.4
	Female	1	0.7	20	7.3	9	3.4	5	2.1	3	2.3	38	3.6
	Total	2	0.7	27	5.2	14	2.5	7	1.4	3	1.2	53	2.5
Bereavement	Male	1	0.7	3	1.2	6	2.0	13	5.3	13	10.6	36	3.4
	Female	0	0.0	8	2.9	22	8.3	56	23.6	89	69.5	175	16.6
	Total	1	0.4	11	2.1	28	5.0	69	14.3	102	40.6	211	10.0

### State of habitation

		40-49yr		50-59yr		60-69yr		70-79yr		80yr-		Total	
		N	%	N	%	N	%	N	%	N	%	N	%
Living alone	Male	9	6.7	10	4.0	13	4.4	6	2.4	8	6.5	46	4.4
	Female	7	4.7	10	3.6	20	7.6	34	14.3	50	39.1	121	11.5
	Total	16	5.6	20	3.8	33	5.9	40	8.3	58	23.1	167	7.9
Husband and wife	Male	12	8.9	59	23.6	130	44.2	163	66.0	74	60.2	438	41.8
	Female	17	11.4	54	19.7	118	44.7	108	45.6	24	18.8	321	30.5
	Total	29	10.2	113	21.6	248	44.4	271	56.0	98	39.0	759	36.1
Others	Male	114	84.4	181	72.4	151	51.4	78	31.6	41	33.3	565	53.9
	Female	125	83.9	210	76.6	126	47.7	95	40.1	54	42.2	610	58.0
	Total	239	84.2	391	74.6	277	49.6	173	35.7	95	37.8	1175	55.9

Sum of family annual income

		40-49yr		50-59yr		60-69yr		70-79yr		80yr-		Total	
		N	%	N	%	N	%	N	%	N	%	N	%
Not recorded	Male	0	0.0	1	0.4	1	0.3	3	1.2	2	1.6	7	0.7
	Female	1	0.7	2	0.7	7	2.7	4	1.7	9	7.0	23	2.2
	Total	1	0.4	3	0.6	8	1.4	7	1.4	11	4.4	30	1.4
Less than 1,500,000yen	Male	2	1.5	1	0.4	9	3.1	4	1.6	5	4.1	21	2.0
	Female	2	1.3	4	1.5	7	2.7	13	5.5	20	15.6	46	4.4
	Total	4	1.4	5	1.0	16	2.9	17	3.5	25	10.0	67	3.2
Between 1,500,000 and 2,490,000 yen	Male	3	2.2	4	1.6	14	4.8	26	10.5	19	15.4	66	6.3

	Female	8	5.4	11	4.0	26	9.8	33	13.9	31	24.2	109	10.4
	Total	11	3.9	15	2.9	40	7.2	59	12.2	50	19.9	175	8.3
Between 2,500,000 and 3,490,000 yen	Male	1	0.7	2	0.8	45	15.3	83	33.6	33	26.8	164	15.6
	Female	5	3.4	16	5.8	55	20.8	59	24.9	19	14.8	154	14.6
	Total	6	2.1	18	3.4	100	17.9	142	29.3	52	20.7	318	15.1
Between 3,500,000 and 4,490,000 yen	Male	7	5.2	13	5.2	42	14.3	46	18.6	27	22.0	135	12.9
	Female	5	3.4	15	5.5	39	14.8	48	20.3	16	12.5	123	11.7
	Total	12	4.2	28	5.3	81	14.5	94	19.4	43	17.1	258	12.3
Between 4,500,000 and 5,490,000 yen	Male	17	12.6	20	8.0	29	9.9	24	9.7	11	8.9	101	9.6
	Female	23	15.4	34	12.4	27	10.2	25	10.5	5	3.9	114	10.8
	Total	40	14.1	54	10.3	56	10.0	49	10.1	16	6.4	215	10.2
Between 5,500,000 and 6,490,000 yen	Male	17	12.6	20	8.0	39	13.3	15	6.1	8	6.5	99	9.4
	Female	10	6.7	26	9.5	22	8.3	9	3.8	5	3.9	72	6.8
	Total	27	9.5	46	8.8	61	10.9	24	5.0	13	5.2	171	8.1
Between 6,500,000 and 7,490,000 yen	Male	23	17.0	26	10.4	27	9.2	12	4.9	2	1.6	90	8.6
	Female	26	17.4	26	9.5	22	8.3	7	3.0	1	0.8	82	7.8
	Total	49	17.3	52	9.9	49	8.8	19	3.9	3	1.2	172	8.2
Between 7,500,000 and 8,490,000 yen	Male	17	12.6	41	16.4	21	7.1	7	2.8	6	4.9	92	8.8
	Female	20	13.4	22	8.0	10	3.8	6	2.5	3	2.3	61	5.8
	Total	37	13.0	63	12.0	31	5.6	13	2.7	9	3.6	153	7.3
Between 8,500,000 and 9,990,000 yen	Male	12	8.9	42	16.8	21	7.1	12	4.9	1	0.8	88	8.4
	Female	17	11.4	41	15.0	14	5.3	16	6.8	5	3.9	93	8.8
	Total	29	10.2	83	15.8	35	6.3	28	5.8	6	2.4	181	8.6
Between 10,000,000	Male	32	23.7	77	30.8	42	14.3	13	5.3	8	6.5	172	16.4



and 19, 990, 000 yen	Female	29	19.5	72	26.3	31	11.7	14	5.9	13	10.2	159	15.1
	Total	61	21.5	149	28.4	73	13.1	27	5.6	21	8.4	331	15.8
More than 20, 000, 000 yen	Male	4	3.0	3	1.2	4	1.4	2	0.8	1	0.8	14	1.3
	Female	3	2.0	5	1.8	4	1.5	3	1.3	1	0.8	16	1.5
	Total	7	2.5	8	1.5	8	1.4	5	1.0	2	0.8	30	1.4

#### Level of satisfaction in annual income

		40-49yr		50-59yr		60-69yr		70-79yr		80yr-		Total	
		N	%	N	%	N	%	N	%	N	%	N	%
Not recorded	Male	1	0.7	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
	Female	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Total	1	0.4	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
Very satisfied	Male	6	4.4	21	8.4	24	8.2	25	10.1	14	11.4	90	8.6
	Female	20	13.4	34	12.4	31	11.7	28	11.8	30	23.4	143	13.6
	Total	26	9.2	55	10.5	55	9.9	53	11.0	44	17.5	233	11.1
Satisfied	Male	50	37.0	98	39.2	104	35.4	84	34.0	51	41.5	387	36.9
	Female	56	37.6	93	33.9	89	33.7	91	38.4	50	39.1	379	36.0
	Total	106	37.3	191	36.5	193	34.6	175	36.2	101	40.2	766	36.5
Not determined	Male	32	23.7	62	24.8	80	27.2	77	31.2	34	27.6	285	27.2
	Female	31	20.8	71	25.9	92	34.8	63	26.6	27	21.1	284	27.0
	Total	63	22.2	133	25.4	172	30.8	140	28.9	61	24.3	569	27.1
Unsatisfied	Male	34	25.2	51	20.4	74	25.2	48	19.4	20	16.3	227	21.6

	Female	26	17.4	64	23.4	42	15.9	40	16.9	12	9.4	184	17.5
	Total	60	21.1	115	21.9	116	20.8	88	18.2	32	12.7	411	19.6
Very unsatisfied	Male	12	8.9	18	7.2	12	4.1	13	5.3	4	3.3	59	5.6
	Female	16	10.7	12	4.4	10	3.8	15	6.3	9	7.0	62	5.9
	Total	28	9.9	30	5.7	22	3.9	28	5.8	13	5.2	121	5.8