質問票によるQOL測定用具の妥当性検証

1, 異文化適合性(Cross cultural Validity)
2, 言語的解釈妥当性(Liguistical Validity)
3, 領域構成妥当性(Construct Validity)
4, 判別妥当性(Discriminative Validity)
5, 評価妥当性(Evaluation Validity)
6, 解釈妥当性(Interpretability)
7, 真の変化とノイズを混合しない妥当性(High Signal-to-noise ratio Validity)
8, 内的整合性・再現妥当性(Reliability)
　異文化適合性(Cross cultural Validity)および
　言語的解釈妥当性(Liguistical Validity)

Table 2 : Distribution of single attribute level by age-group (%)

Level ／ Attributes	Vision n=3752	Hearing n=3752	Speech n=3752	Ambulation n=3752	Dexterity n=3752	Emotion n=3752	Cognion n=3752	Pain n=3752
Level 1	39.1	91.7	91.7	98.6	98.7	43.6	49.3	44.1
Level 2	58.8	4.1	4.1	0.9	1.0	49.4	5.0	47.7
Level 3	1.3	4.0	4.0	0.5	0.2	6.1	28.7	6.5
Level 4	0.4	0.2	0.2	0.1	0.0	0.7	14.6	1.4
Level 5	0.4	0.1	0.1	0.1	0.1	0.2	2.3	0.3
Level 6	0.03	0.0	N.A.	0.03	0.0	N.A.	0.1	N.A.

N.A. Not applicable; There is no level 6 for that attribute.

Table3 : Mean Utility Scores (Single Attribute, Multiattribute Global HUI3) and VAS score by Age Group

age-group	n	single attributes									
		Vision**	Hearing**	Speech**	Ambulation**	Dexterity**	Emotion**	Cognition**	Pain**	Global**	VAS**
0-19	136	0.97±0.08	1.00±0.00	0.96±0.12	1.00±0.01	1.00±0.01	0.92±0.13	0.88±0.19	0.93±0.14	0.85±0.18	0.82±0.19
20-29	661	0.97±0.05	1.00±0.00	0.98±0.08	1.00±0.01	1.00±0.01	0.93±0.09	0.93±0.13	0.94±0.09	0.87±0.13	0.86±0.14
30-39	1113	0.97±0.05	1.00±0.04	0.99±0.06	1.00±0.03	1.00±0.03	0.93±0.09	0.92±0.13	0.94±0.09	0.87±0.13	0.85±0.13
40-49	871	0.97±0.06	1.00±0.05	0.97±0.08	1.00±0.02	1.00±0.01	0.93±0.10	0.90±0.14	0.94±0.09	0.83±0.16	0.82±0.15
50-59	583	0.95±0.06	0.99±0.08	0.97±0.10	1.00±0.01	1.00±0.01	0.93±0.09	0.89±0.14	0.94±0.07	0.82±0.16	0.81±0.14
60-69	212	0.95±0.06	0.99±0.07	0.99±0.05	1.00±0.03	1.00±0.02	0.96±0.05	0.91±0.11	0.93±0.08	0.87±0.11	0.79±0.17
70 and over	176	0.94±0.09	0.93±0.20	0.97±0.09	0.94±0.14	0.98±0.08	0.95±0.07	0.85±0.19	0.87±0.19	0.74±0.24	0.67±0.22
all age	3,752	0.96±0.06	0.99±0.07	0.98±0.08	1.00±0.04	1.00±0.02	0.93±0.09	0.91±0.14	0.94±0.10	0.85±0.15	0.83±0.15

Values represent the arithmetic means±SD * ; $p<0.05$, ** ; $p<0.01$ by ANOVA (among age-group)

Table4 : Mean utility scores (single attribute, multiattribute global HUI3)and VAS score by personal characteristic variables

		age	Attributes and single utility scores			
Variables and category	n	avg±std	Vision	Hearing	Speech	Ambulation
Education						
Student	194	19.88 ± 3.07	0.96 ± 0.08	1.00 ± 0.00	0.98 ± 0.07	1.00 ± 0.00
Low	1515	46.06 ± 12.87	0.96 ± 0.06	0.99 ± 0.08	0.97 ± 0.10	1.00 ± 0.05
High	1743	37.67 ± 10.84	0.96 ± 0.05	1.00 ± 0.05	0.99 ± 0.06	1.00 ± 0.03
Marital status						
Married	2413	44.63 ± 11.54	0.96 ± 0.06	0.99 ± 0.06	0.98 ± 0.08	1.00 ± 0.03
Divorced	131	42.84 ± 10.93	0.97 ± 0.04	1.00 ± 0.02	0.99 ± 0.05	0.99 ± 0.06
Widowed	103	70.50 ± 11.79	0.94 ± 0.08	0.94 ± 0.19	0.96 ± 0.10	0.95 ± 0.12
Single	894	27.77 ± 8.89	0.97 ± 0.06	1.00 ± 0.03	0.97 ± 0.09	1.00 ± 0.04
Gender						
Male	2540	40.61 ± 12.12	0.96 ± 0.06	0.99 ± 0.07	0.97 ± 0.08	1.00 ± 0.04
Female	1030	42.03 ± 18.38	0.96 ± 0.06	0.99 ± 0.07	0.99 ± 0.07	0.99 ± 0.05
Annual family income						
0-10000USD	442	37.90 ± 19.73	0.96 ± 0.06	1.00 ± 0.04	0.98 ± 0.09	0.99 ± 0.06
10000-50000USD	1182	37.50 ± 15.38	0.96 ± 0.06	0.99 ± 0.07	0.98 ± 0.08	1.00 ± 0.04
More than 50000USD	1763	43.38 ± 8.73	0.96 ± 0.05	0.99 ± 0.06	0.98 ± 0.08	1.00 ± 0.02
Employment						
Seeking work or part time	149	69.13 ± 14.55	0.94 ± 0.11	0.94 ± 0.20	0.97 ± 0.10	0.94 ± 0.16
Student	217	20.08 ± 3.76	0.96 ± 0.07	1.00 ± 0.00	0.97 ± 0.09	1.00 ± 0.00
House wife	376	49.56 ± 14.96	0.96 ± 0.05	0.99 ± 0.04	0.99 ± 0.05	1.00 ± 0.02
Others	2800	40.01 ± 10.79	0.96 ± 0.05	1.00 ± 0.05	0.98 ± 0.08	1.00 ± 0.02
Inter-human relationship in work site						
Excellent	445	37.30 ± 12.44	0.97 ± 0.06	1.00 ± 0.03	0.99 ± 0.07	1.00 ± 0.02
Good	1230	38.90 ± 11.36	0.97 ± 0.05	1.00 ± 0.04	0.98 ± 0.06	1.00 ± 0.01
Fair	1213	40.25 ± 11.30	0.96 ± 0.06	1.00 ± 0.06	0.97 ± 0.09	1.00 ± 0.02
Bad	133	38.73 ± 9.70	0.97 ± 0.05	0.98 ± 0.09	0.95 ± 0.11	1.00 ± 0.02
Very bad	30	39.26 ± 9.15	0.98 ± 0.03	0.96 ± 0.19	0.93 ± 0.16	1.00 ± 0.00
Inter-human relationship in family						
Excellent	883	39.84 ± 14.06	0.97 ± 0.05	1.00 ± 0.03	0.99 ± 0.06	1.00 ± 0.05
Good	1446	40.83 ± 13.30	0.96 ± 0.06	0.99 ± 0.06	0.98 ± 0.07	1.00 ± 0.03
Fair	1056	42.43 ± 14.60	0.96 ± 0.06	0.99 ± 0.07	0.97 ± 0.10	1.00 ± 0.04
Bad	85	38.45 ± 13.11	0.96 ± 0.08	0.96 ± 0.19	0.96 ± 0.11	0.99 ± 0.07
Very bad	18	36.83 ± 10.42	0.98 ± 0.03	0.94 ± 0.24	0.94 ± 0.14	1.00 ± 0.00
Number of chronic disease						
3 and over	78	58.91 ± 16.79	0.94 ± 0.11	0.93 ± 0.21	0.95 ± 0.12	0.97 ± 0.08
2	222	52.41 ± 17.48	0.95 ± 0.08	0.98 ± 0.13	0.97 ± 0.09	0.98 ± 0.08
1	877	44.36 ± 15.19	0.96 ± 0.07	0.99 ± 0.06	0.97 ± 0.09	0.99 ± 0.05
0	2400	38.30 ± 12.25	0.97 ± 0.05	1.00 ± 0.04	0.98 ± 0.07	1.00 ± 0.03

value represent the arthmetic means ±SD

Table4-2 : Mean utility scores (single attribute, multiattribute global HUI3) and VAS score by personal characteristic variables

Variables and category	Dexterity	Emotion	Cognition	Pain	Global	VAS
Education						
Student	1.00 ± 0.01	0.93 ± 0.11	0.92 ± 0.14	0.95 ± 0.11	0.89 ± 0.13	0.85 ± 0.17
Low	1.00 ± 0.03	0.92 ± 0.10	0.89 ± 0.15	0.93 ± 0.11	0.81 ± 0.18	0.81 ± 0.16
High	1.00 ± 0.02	0.94 ± 0.08	0.93 ± 0.13	0.94 ± 0.08	0.88 ± 0.12	0.85 ± 0.14
Marital status						
Married	1.00 ± 0.02	0.94 ± 0.09	0.91 ± 0.13	0.94 ± 0.09	0.85 ± 0.15	0.83 ± 0.15
Divorced	1.00 ± 0.01	0.92 ± 0.10	0.90 ± 0.13	0.94 ± 0.10	0.85 ± 0.14	0.81 ± 0.17
Widowed	0.98 ± 0.06	0.94 ± 0.08	0.84 ± 0.20	0.90 ± 0.16	0.76 ± 0.23	0.68 ± 0.21
Single	1.00 ± 0.03	0.91 ± 0.11	0.91 ± 0.15	0.94 ± 0.11	0.85 ± 0.15	0.84 ± 0.15
Gender						
Male	1.00 ± 0.03	0.93 ± 0.10	0.91 ± 0.14	0.94 ± 0.10	0.84 ± 0.16	0.82 ± 0.15
Female	1.00 ± 0.02	0.94 ± 0.08	0.92 ± 0.13	0.93 ± 0.09	0.87 ± 0.13	0.83 ± 0.16
Annual family income						
0-10000USD	0.99 ± 0.04	0.94 ± 0.10	0.92 ± 0.14	0.93 ± 0.12	0.87 ± 0.16	0.83 ± 0.17
10000-50000USD	1.00 ± 0.03	0.92 ± 0.10	0.91 ± 0.14	0.93 ± 0.10	0.84 ± 0.16	0.83 ± 0.16
More than 50000USD	1.00 ± 0.01	0.93 ± 0.09	0.91 ± 0.13	0.94 ± 0.09	0.84 ± 0.15	0.82 ± 0.15
Employment						
Seeking work or part time	0.97 ± 0.10	0.95 ± 0.08	0.85 ± 0.20	0.89 ± 0.18	0.75 ± 0.25	0.67 ± 0.23
Student	1.00 ± 0.01	0.93 ± 0.11	0.92 ± 0.15	0.94 ± 0.13	0.88 ± 0.14	0.85 ± 0.17
House wife	1.00 ± 0.02	0.96 ± 0.07	0.93 ± 0.11	0.94 ± 0.08	0.90 ± 0.10	0.84 ± 0.14
Others	1.00 ± 0.01	0.93 ± 0.10	0.91 ± 0.13	0.94 ± 0.09	0.84 ± 0.15	0.83 ± 0.14
Inter-human relationship in work site						
Excellent	1.00 ± 0.01	0.96 ± 0.09	0.94 ± 0.11	0.95 ± 0.08	0.91 ± 0.12	0.87 ± 0.14
Good	1.00 ± 0.01	0.94 ± 0.08	0.93 ± 0.12	0.95 ± 0.08	0.87 ± 0.12	0.85 ± 0.13
Fair	1.00 ± 0.01	0.91 ± 0.09	0.89 ± 0.15	0.93 ± 0.09	0.82 ± 0.15	0.81 ± 0.15
Bad	1.00 ± 0.02	0.85 ± 0.16	0.84 ± 0.19	0.88 ± 0.14	0.72 ± 0.22	0.76 ± 0.17
Very bad	1.00 ± 0.02	0.83 ± 0.21	0.79 ± 0.19	0.87 ± 0.21	0.69 ± 0.25	0.78 ± 0.22
Inter-human relationship in family						
Excellent	1.00 ± 0.03	0.96 ± 0.09	0.93 ± 0.13	0.95 ± 0.07	0.90 ± 0.13	0.87 ± 0.14
Good	1.00 ± 0.02	0.94 ± 0.07	0.92 ± 0.13	0.94 ± 0.08	0.85 ± 0.14	0.83 ± 0.15
Fair	1.00 ± 0.02	0.90 ± 0.10	0.89 ± 0.15	0.92 ± 0.12	0.80 ± 0.17	0.79 ± 0.16
Bad	0.99 ± 0.03	0.85 ± 0.17	0.84 ± 0.19	0.89 ± 0.19	0.74 ± 0.24	0.78 ± 0.20
Very bad	1.00 ± 0.00	0.77 ± 0.30	0.83 ± 0.27	0.88 ± 0.23	0.66 ± 0.30	0.72 ± 0.21
Number of chronic disease						
3 and over	0.99 ± 0.04	0.92 ± 0.13	0.83 ± 0.17	0.86 ± 0.14	0.72 ± 0.22	0.64 ± 0.23
2	0.99 ± 0.03	0.92 ± 0.12	0.88 ± 0.16	0.88 ± 0.15	0.77 ± 0.19	0.72 ± 0.19
1	1.00 ± 0.03	0.93 ± 0.10	0.90 ± 0.14	0.92 ± 0.12	0.82 ± 0.17	0.79 ± 0.16
0	1.00 ± 0.02	0.93 ± 0.09	0.92 ± 0.13	0.95 ± 0.07	0.87 ± 0.13	0.85 ± 0.13

value represent the arthmetic means ±SD

Table5 : Linear regression estimates for model of multiattribute global HUI3 utility score as a function of personal characteristic variables

Variables and category	coefficient	P Value	95% confidence Intervals	
Education				
Student	0.048	0.131	-0.014	0.110
Low	-0.054	0.000	-0.066	-0.043
High (baseline)				
Marital status				
Married	0.021	0.007	0.006	0.036
Divorced	0.025	0.079	-0.003	0.053
Widowed	-0.009	0.731	-0.061	0.043
Single(baseline)				
Gender				
Male	-0.040	0.000	-0.055	-0.025
Female (baseline)				
Annual family income				
0-10000USD	-0.003	0.836	-0.036	0.029
10000-50000USD	-0.012	0.061	-0.025	0.001
More than 50000USD (baseline)				
Employment				
Seeking work or part time	0.068	0.054	-0.001	0.137
Student	-0.044	0.160	-0.106	0.017
House wife	0.025	0.188	-0.012	0.062
Others (baseline)				
Inter-human relationship in work site				
Excellent	0.162	0.000	0.110	0.214
Good	0.152	0.000	0.102	0.203
Fair	0.120	0.000	0.070	0.171
Bad	0.030	0.277	-0.024	0.085
Very bad (baseline)				
Inter-human relationship in family				
Excellent	0.146	0.000	0.080	0.212
Good	0.118	0.000	0.052	0.183
Fair	0.095	0.005	0.029	0.160
Bad	0.027	0.471	-0.046	0.099
Very bad (baseline)				
Age	-4.57E-04	1.63E-01	-1.10E-03	1.85E-04
Number of chronic disease				
three and more	-0.057	0.022	-0.106	-0.008
two	-0.072	0.000	-0.096	-0.047
one	-0.025	0.000	-0.037	-0.012
none (baseline)				
Constant	0.667	0.000	0.584	0.750
R2				0.192

Table6 : Mean Utility Scores (Single Attribute, Multiattribute Global HUI3)and VAS score by Type of Chronic disease

		age	attributes									
Chronic disease	n	avg±std	Vision	Hearing	Speech	Ambulation	Dexterity	Emotion	Cognition	Pain	Global	VAS
No chronic disease	2,570	38.30±12.25	0.97±0.05	1.00±0.04	0.98±0.07	1.00±0.03	1.00±0.02	0.93±0.09	0.92±0.13	0.95±0.07	0.87±0.13	0.85±0.13
Allergy	152	41.77±12.76	0.97±0.05	0.98±0.10	0.95±0.11	0.99±0.04	1.00±0.01	0.92±0.09	0.88±0.16	0.91±0.11	0.76±0.19	0.76±0.17
Cardiopulmonary disease	187	47.50±17.22	0.96±0.07	0.98±0.13	0.96±0.10	0.99±0.03	1.00±0.02	0.91±0.14	0.89±0.16	0.90±0.14	0.79±0.20	0.73±0.19
Musculo-skeletal disorder	131	49.34±15.05	0.95±0.07	0.98±0.10	0.97±0.08	0.98±0.07	0.99±0.03	0.92±0.11	0.86±0.15	0.83±0.16	0.73±0.19	0.74±0.20
Hypertension	301	58.76±13.67	0.95±0.08	0.98±0.13	0.97±0.10	0.98±0.08	0.99±0.05	0.94±0.08	0.89±0.13	0.92±0.12	0.80±0.18	0.73±0.19
Hyper Lipidemia	19	56.79±13.60	0.93±0.13	1.00±0.00	0.99±0.04	0.98±0.07	0.99±0.06	0.98±0.04	0.94±0.11	0.90±0.15	0.83±0.16	0.81±0.13
Metabolic disease	117	55.45±13.30	0.95±0.08	0.98±0.10	0.95±0.12	0.99±0.05	1.00±0.02	0.94±0.07	0.87±0.16	0.92±0.10	0.78±0.20	0.71±0.21
Visual & hearing disorder	71	68.17±13.20	0.94±0.09	0.96±0.16	0.97±0.09	0.96±0.11	0.99±0.03	0.95±0.05	0.86±0.16	0.89±0.16	0.75±0.21	0.67±0.23
Central nervous disorder	111	43.91±17.89	0.94±0.10	0.97±0.16	0.96±0.11	0.97±0.12	0.99±0.05	0.91±0.10	0.84±0.19	0.85±0.17	0.74±0.21	0.75±0.21
Malignant tumor	22	59.82±13.09	0.93±0.12	0.95±0.21	0.97±0.09	0.97±0.13	0.99±0.06	0.95±0.06	0.92±0.16	0.87±0.22	0.82±0.24	0.70±0.26
Gastrointestinal disorder	179	49.52±13.96	0.95±0.08	0.97±0.14	0.97±0.09	0.99±0.06	0.99±0.03	0.93±0.08	0.89±0.14	0.91±0.13	0.80±0.18	0.74±0.18

Values represent the arithmetic means±standard deviations

Table7 : Linear regression estimates for model of utility score (single attribute, multiattribute global HUI3) and VAS score as a function of age and type of chronic disease

Chronic disease	attributes n=3762								global	VAS
	Vision	Hearing	Speech	Ambulation	Dexterity	Emotion	Cognition	Pain	n=3762	n=3576
(constant)	0.983	1.023	0.983	1.014	1.005	0.918	0.952	0.961	0.912	0.911
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Age	-4.39E-04	-6.63E-04	-2.67E-05	-4.14E-04	-1.69E-04	4.29E-04	-8.82E-04	-3.69E-04	-1.25E-03	-1.58E-03
	0.000	0.000	0.794	0.000	0.000	0.000	0.000	0.003	0.000	0.000
Allergy	-0.007	-0.005	-0.013	6.06E-05	0.002	-0.011	-0.021	-0.021	-0.032	-0.028
	0.018	0.129	0.002	0.976	0.204	0.026	0.004	0.000	0.000	0.000
Cardiopulmonary disease	1.05E-04	-0.012	-0.014	2.08E-04	3.66E-04	-0.024	-0.010	-0.027	-0.040	-0.068
	0.981	0.015	0.020	0.944	0.847	0.001	0.326	0.000	0.001	0.000
Musculo-skeletal disorder	-0.002	0.002	-0.004	-0.003	-0.008	-0.011	-0.028	-0.097	-0.079	-0.063
	0.740	0.749	0.621	0.462	0.007	0.309	0.078	0.000	0.000	0.000
Hypertension	-0.004	-0.002	-0.003	-0.003	-0.001	-0.002	-1.54E-04	-0.008	-0.016	-0.053
	0.247	0.638	0.520	0.273	0.362	0.685	0.986	0.181	0.110	0.000
Hyper Lipidemia	-0.020	0.021	0.015	-0.003	-0.008	0.044	0.045	-0.025	0.019	0.029
	0.132	0.170	0.413	0.718	0.147	0.042	0.156	0.253	0.577	0.394
Metabolic disease	-0.005	0.005	-0.027	0.002	0.003	0.002	-0.027	-0.010	-0.045	-0.075
	0.441	0.449	0.001	0.683	0.255	0.835	0.059	0.318	0.003	0.000
Visual & hearing disorder	-0.013	-0.013	-0.005	-0.030	-0.002	0.009	-0.024	-0.025	-0.056	-0.084
	0.088	0.145	0.651	0.000	0.626	0.477	0.194	0.046	0.006	0.000
Central nervous disorder	-0.016	-0.014	-0.013	-0.018	-0.011	-0.014	-0.057	-0.055	-0.076	-0.056
	0.006	0.036	0.100	0.000	0.000	0.140	0.000	0.000	0.000	0.000
Malignant tumor	-0.042	-0.063	-0.031	-0.040	-0.016	0.007	-0.013	-0.100	-0.055	-0.191
	0.013	0.001	0.179	0.000	0.028	0.808	0.753	0.000	0.207	0.000
Gastrointestinal disorder	-0.004	-0.017	-0.004	0.002	-0.002	-0.002	-0.011	-0.017	-0.029	-0.054
	0.368	0.001	0.522	0.448	0.296	0.805	0.338	0.025	0.019	0.000
No chronic disease (baseline)										
R^2	0.024	0.036	0.010	0.052	0.024	0.011	0.021	0.060	0.055	0.112

value represents regression coefficient (upper line) and p-value (lower line)

Table8 : Kendall correlation between HUI3 single attribute score (n=3785)

		HUI3 Attributes							
		Vision	Hearing	Speech	Ambulation	Dexterity	Emotion	Cognition	Pain
HUI3 Attributes									
Vision	coefficient	1.00	0.06	0.06	0.05	0.05	0.02	0.09	0.09
	p-value		0.00	0.00	0.00	0.00	0.15	0.00	0.00
Hearing	coefficient		1.00	0.15	0.20	0.15	0.02	0.08	0.07
	p-value			0.00	0.00	0.00	0.17	0.00	0.00
Speech	coefficient			1.00	0.09	0.13	0.15	0.27	0.17
	p-value				0.00	0.00	0.00	0.00	0.00
Ambulation	coefficient				1.00	0.46	0.02	0.07	0.14
	p-value					0.00	0.23	0.00	0.00
Dexterity	coefficient					1.00	0.04	0.10	0.10
	p-value						0.02	0.00	0.00
Emotion	coefficient						1.00	0.22	0.24
	p-value							0.00	0.00
Cognition	coefficient							1.00	0.27
	p-value								0.00
Pain	coefficient								1.00
	p-value								

Figure1 : Relationship between multiattribute global HUI3 utility score and self-rated health

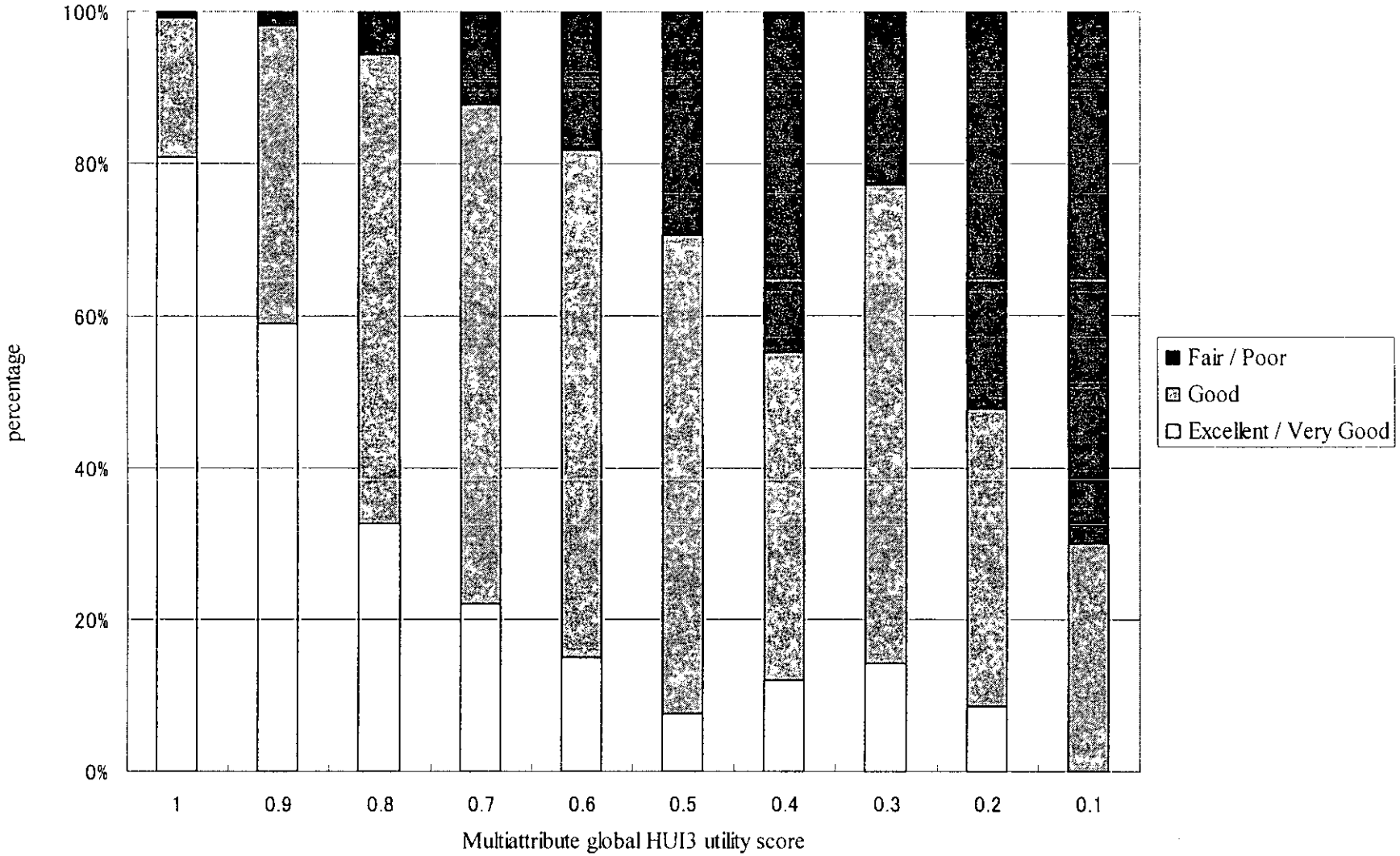
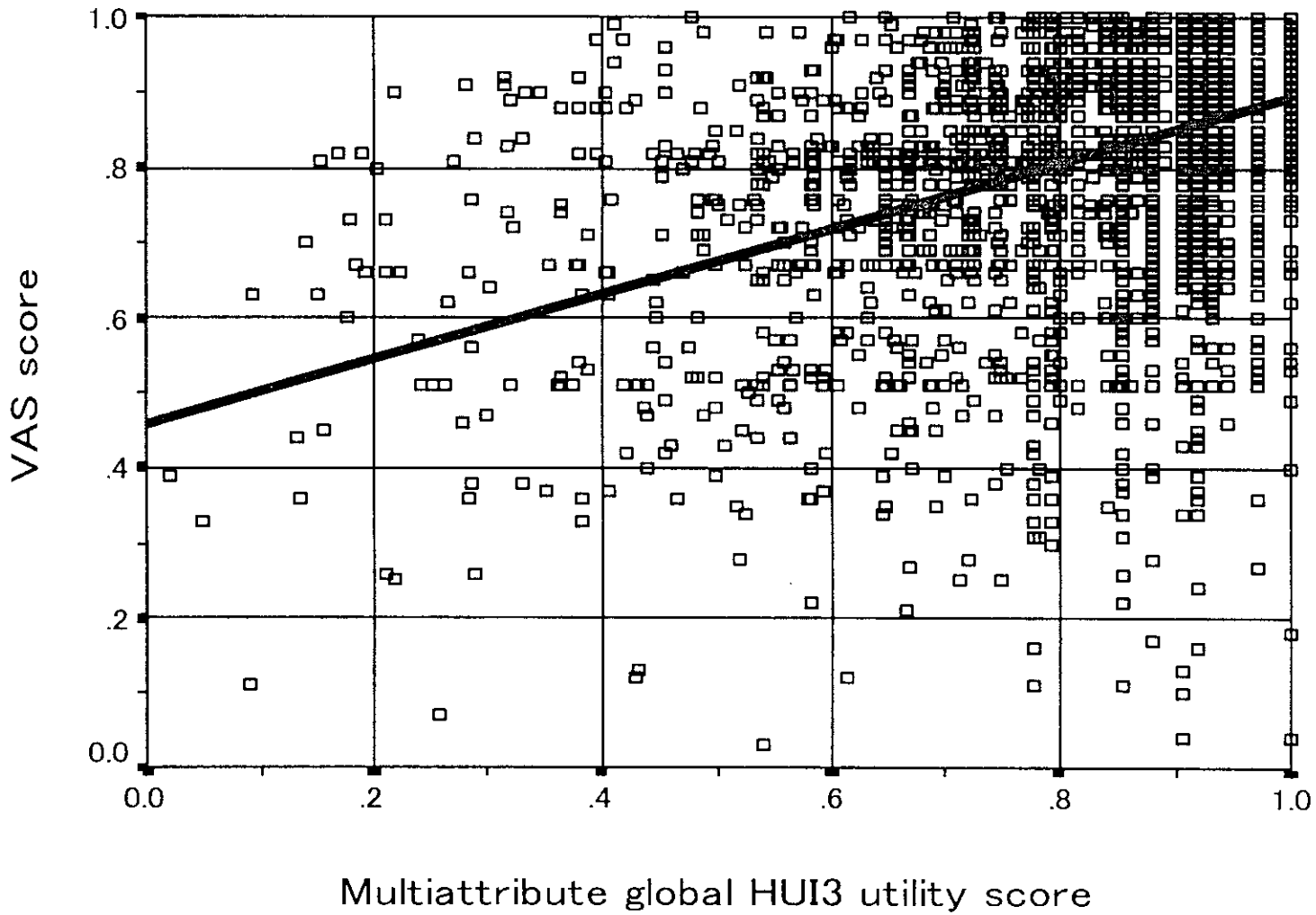


Figure2 : Relationship between multiattribute global HUI3 utility score and VAS score (r2=0.190)



Result

Table1 : Mean Utility Scores (Single Attribute, Multiattribute Global HUI2 and HUI3)and VAS score by Age Group

age-group	n	single attributes										
		Vision**	Hearing**	Speech**	Ambulation**	Dexterity**	Emotion**	Cognition**	Pain**	HUI 2**	HUI 3**	VAS**
0-19	136	0.97±0.08	1.00±0.00	0.96±0.12	1.00±0.01	1.00±0.01	0.92±0.13	0.88±0.19	0.93±0.14	0.87 ± 0.13	0.85±0.18	0.82±0.19
20-29	661	0.97±0.05	1.00±0.00	0.98±0.08	1.00±0.01	1.00±0.01	0.93±0.09	0.93±0.13	0.94±0.09	0.88 ± 0.10	0.87±0.13	0.86±0.14
30-39	1113	0.97±0.05	1.00±0.04	0.99±0.06	1.00±0.03	1.00±0.03	0.93±0.09	0.92±0.13	0.94±0.09	0.89 ± 0.09	0.87±0.13	0.85±0.13
40-49	871	0.97±0.06	1.00±0.05	0.97±0.08	1.00±0.02	1.00±0.01	0.93±0.10	0.90±0.14	0.94±0.09	0.88 ± 0.10	0.83±0.16	0.82±0.15
50-59	583	0.95±0.06	0.99±0.08	0.97±0.10	1.00±0.01	1.00±0.01	0.93±0.09	0.89±0.14	0.94±0.07	0.86 ± 0.09	0.82±0.16	0.81±0.14
60-69	212	0.95±0.06	0.99±0.07	0.99±0.05	1.00±0.03	1.00±0.02	0.96±0.05	0.91±0.11	0.93±0.08	0.87 ± 0.09	0.87±0.11	0.79±0.17
70 and over	176	0.94±0.09	0.93±0.20	0.97±0.09	0.94±0.14	0.98±0.08	0.95±0.07	0.85±0.19	0.87±0.19	0.82 ± 0.15	0.74±0.24	0.67±0.22
all age	3,752	0.96±0.06	0.99±0.07	0.98±0.08	1.00±0.04	1.00±0.02	0.93±0.09	0.91±0.14	0.94±0.10	0.88 ± 0.10	0.85±0.15	0.83±0.15

Values represent the arithmetic means±SD * ; $p<0.05$, ** ; $p<0.01$ by ANOVA (among age-group)

Table2 : Mean utility scores of HUI2 and HUI3 by personal characteristic variables

		age	Utility scores		
Variables and category	n	avg±std	HUI 2	HUI 3	VAS
Education					
Student	194	19.88 ± 3.07	0.89 ± 0.10	0.89 ± 0.13	0.85 ± 0.17
Low	1515	46.06 ± 12.87	0.87 ± 0.11	0.81 ± 0.18	0.81 ± 0.16
High	1743	37.67 ± 10.84	0.88 ± 0.09	0.88 ± 0.12	0.85 ± 0.14
Marital status					
Married	2413	44.63 ± 11.54	0.88 ± 0.09	0.85 ± 0.15	0.83 ± 0.15
Divorced	131	42.84 ± 10.93	0.87 ± 0.10	0.85 ± 0.14	0.81 ± 0.17
Widowed	103	70.50 ± 11.79	0.82 ± 0.14	0.76 ± 0.23	0.68 ± 0.21
Single	894	27.77 ± 8.89	0.87 ± 0.11	0.85 ± 0.15	0.84 ± 0.15
Gender					
Male	2540	40.61 ± 12.12	0.88 ± 0.10	0.84 ± 0.16	0.82 ± 0.15
Female	1030	42.03 ± 18.38	0.87 ± 0.10	0.87 ± 0.13	0.83 ± 0.16
Annual family income					
0-10000USD	442	37.90 ± 19.73	0.87 ± 0.12	0.87 ± 0.16	0.83 ± 0.17
10000-50000USD	1182	37.50 ± 15.38	0.87 ± 0.10	0.84 ± 0.16	0.83 ± 0.16
More than 50000USD	1763	43.38 ± 8.73	0.88 ± 0.09	0.84 ± 0.15	0.82 ± 0.15
Employment					
Seeking work or part time	149	69.13 ± 14.55	0.82 ± 0.15	0.75 ± 0.25	0.67 ± 0.23
Student	217	20.08 ± 3.76	0.88 ± 0.11	0.88 ± 0.14	0.85 ± 0.17
House wife	376	49.56 ± 14.96	0.88 ± 0.08	0.90 ± 0.10	0.84 ± 0.14
Others	2800	40.01 ± 10.79	0.88 ± 0.09	0.84 ± 0.15	0.83 ± 0.14
Inter-human relationship in work site					
Excellent	445	37.30 ± 12.44	0.91 ± 0.09	0.91 ± 0.12	0.87 ± 0.14
Good	1230	38.90 ± 11.36	0.89 ± 0.08	0.87 ± 0.12	0.85 ± 0.13
Fair	1213	40.25 ± 11.30	0.86 ± 0.10	0.82 ± 0.15	0.81 ± 0.15
Bad	133	38.73 ± 9.70	0.81 ± 0.13	0.72 ± 0.22	0.76 ± 0.17
Very bad	30	39.26 ± 9.15	0.81 ± 0.15	0.69 ± 0.25	0.78 ± 0.22
Inter-human relationship in family					
Excellent	883	39.84 ± 14.06	0.90 ± 0.09	0.90 ± 0.13	0.87 ± 0.14
Good	1446	40.83 ± 13.30	0.88 ± 0.09	0.85 ± 0.14	0.83 ± 0.15
Fair	1056	42.43 ± 14.60	0.85 ± 0.10	0.80 ± 0.17	0.79 ± 0.16
Bad	85	38.45 ± 13.11	0.82 ± 0.16	0.74 ± 0.24	0.78 ± 0.20
Very bad	18	36.83 ± 10.42	0.76 ± 0.22	0.66 ± 0.30	0.72 ± 0.21
Number of chronic disease					
3 and over	78	58.91 ± 16.79	0.81 ± 0.13	0.72 ± 0.22	0.64 ± 0.23
2	222	52.41 ± 17.48	0.81 ± 0.13	0.77 ± 0.19	0.72 ± 0.19
1	877	44.36 ± 15.19	0.86 ± 0.10	0.82 ± 0.17	0.79 ± 0.16
0	2400	38.30 ± 12.25	0.89 ± 0.09	0.87 ± 0.13	0.85 ± 0.13

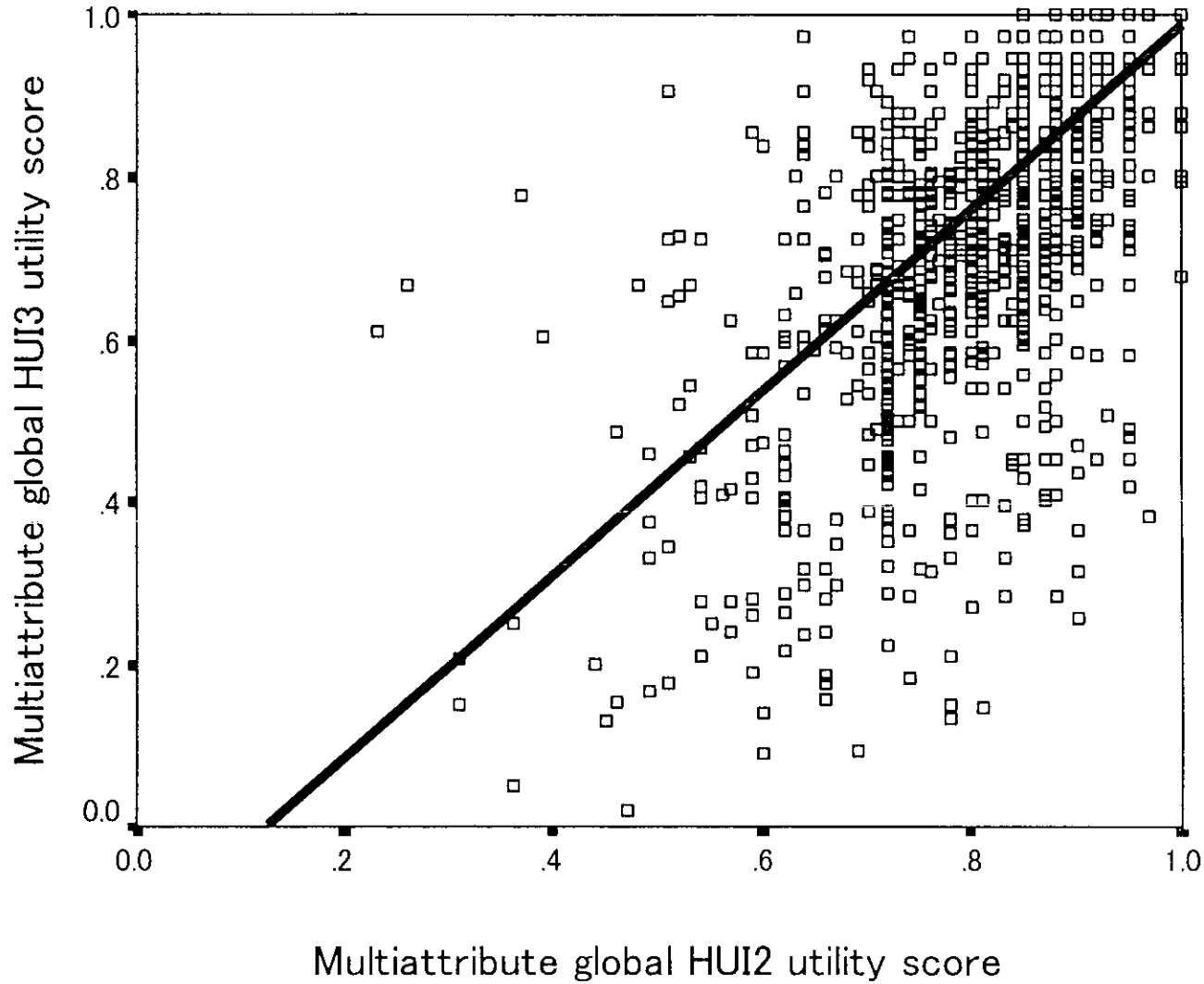
value represent the arthmetic means ±SD

Table4 : Survey linear regression estimates for model of utility score of HUI2, HUI3 and VAS score as a function of age and type of chronic disease

Chronic disease	HUI 2 n=3762	HUI 3 n=3762	VAS n=3576
(constant)	0.907	0.912	0.911
	0.000	0.000	0.000
age	-5.23E-04	-1.25E-03	-1.58E-03
	0.000	0.000	0.000
Allergy	-0.029	-0.032	-0.028
	0.000	0.000	0.000
Cardiopulmonary disease	-0.024	-0.040	-0.068
	0.001	0.001	0.000
Musculo-skeletal disorder	-0.061	-0.079	-0.063
	0.000	0.000	0.000
Hypertension	-0.016	-0.016	-0.053
	0.010	0.110	0.000
Hyper Lipidemia	0.033	0.019	0.029
	0.133	0.577	0.394
Metabolic disease	-0.021	-0.045	-0.075
	0.034	0.003	0.000
Visual & hearing disorder	-0.035	-0.056	-0.084
	0.007	0.006	0.000
Central nerves disorder	-0.066	-0.076	-0.056
	0.000	0.000	0.000
malignant tumor	-0.074	-0.055	-0.191
	0.008	0.207	0.000
Gastro intestinal disorder	-0.018	-0.029	-0.054
	0.021	0.019	0.000
No chronic disease (baseline)			
R^2	0.060	0.055	0.112

value represents regression coefficient (upper line) and p-value (lower line)

Figure3 : Relationship between multiattribute global HUI3 utility score and HUI2 score (r2=0.521)



O-4-8

April 13 (Fri.) 15:50-17:55 Room E

Japanese Health Utilities Index Mark 3 (HUI3): Measurement Properties in a Community Sample

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The McMaster Health utilities index Mark 2 and 3 (HUI2 and HUI3) are generic multiattribute, preference-based system for assessing health-related quality of life (HRQOL). This study presents the translation procedures of Japanese HUI2 and 3 and measurement properties in a community sample. Forward and back translations were done in cooperation with the developers of HUI. Acceptability, comprehensibility of questionnaires and test-retest reliability were assessed. In community survey with total of 3860 people (age:41 ± 14.3, male/female:2651/1209) the Canadian scoring function was used to calculate utility score. Construct validity was assessed by examining the relationship between 20 personal characteristics and utility score. Linear regression estimates demonstrated a significant negative relation between HUI3 utility score and low education, male gender, poor inter-human relationship, older age, and a higher number of chronic disease. Single-attribute utility scores were associated with chronic conditions in the manner expected. The community sample were relatively healthy. More than 90% of respondents were distributed in level 1 and 2 in all attributes except cognition. Interpretability of utility score was assessed by estimation of relationship between VAS, self-rated health and utility score. Independence of attributes was assessed. For only three of the 28 possible cross comparison among the eight attributes were correlations co-efficients greater than 0.25. Translation and adaptation of the HUI3 questionnaire into Japanese was successful, but the sample size and selection bias limit the interpretation of our study conclusions.

O-5-1

April 13 (Fri.) 9:30-10:35 Room F

The Communication Pattern of Japanese Experienced Nurses-From Paper Simulation of the Conversation with Terminally Ill Patient-

Kazuko Kikui *(Department of Nursing, Kawasaki University of Medical Welfare, Japan)*, Reiko Ryder Shimazaki *(Kawasaki University of Medical Welfare, Japan)*, Yoshiko Futoyu *(Kawasaki University of Medical Welfare, Japan)*, Mieko Yamaguchi *(Graduate School of Okayama University, Japan)*, Harumi Katayama *(Graduate School of Kawasaki University of Medical Welfare, Japan)*

Communication is one of the clue to promote QOL. Terminally ill patients are likely to know about the diagnosis and the prognosis of their own illness. According to the traditional medical norm, only doctors have the authorized role to tell on this issue. However, patients often ask nurses about their illness. This research investigates how Japanese experienced nurses respond when they are asked prognosis from patients.

The data were collected from 37 head nurses using semi structured questionnaire or paper simulation. Questionnaire items were: 1) narrative statement, 2) psychology of nurses, 3) behaviors besides narration.

1. The data were analyzed using contents analysis methods to categorize the communication patterns.

2. Categories were structured according to attitudes of nurses to respond the patient's requests.

175 statements were categorized in 11 groups. 5 communication patterns of nurses were identified from 11 categories: 1) confirming the patient's feeling and understanding of their illness, 2) offering help physically and emotionally, 3) giving information about prognosis, 4) talking nurses' philosophy on life and death, 5) escaping from patient's question.

Communication pattern is influenced by nurses' counseling ability, medical/ethical norm and personality as well as their motivation to develop interpersonal relationship.

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以降 P.154-172 は雑誌/図書等に掲載された論文となりますので、下記の資料をご参照ください。

HUI3(Health Utilities Index 3)を用いた職域における健康効用値測定の試み.
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産業衛生学雑誌. 43 巻臨増 Page249. 2001.3

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医療経済効果からみた高脂血症治療の意義. (座談会)
五島雄一郎, 横山信治, 森口尚史, 松井研一.
日本医事新報. No.4013. P. 37-45. 2001.3.24

高脂血症治療薬(スタチン)に関する医療経済分析の現状と日本の課題. (高脂血症治療の進歩)
森口尚史, 五島雄一郎
日本臨床, 59 巻増刊 高脂血症 (下) Page513-517. 2001.3

Evaluation of management strategies by using pharmacogenomics in patients with histologically severe chronic hepatitis C virus genotype 1b. A Decision analysis.

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Short Title; Evaluation of management strategies in patients with histologically severe chronic hepatitis C virus genotype 1b.

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Word count; 3483 words
Number of tables and figures; Five.

Abstract

Background; The management for Interferon (IFN) therapy for histologically severe chronic hepatitis C virus genotype 1b [HCV-1b (F3)] is controversial.

Objective;
To develop disease management strategies for HCV-1b (F3).

Design;
A decision analysis using Markov decision analysis model was performed for the six disease management strategies by using pharmacogenomics.

Setting; Japanese teaching hospital.

Data Sources: Clinical data in Japanese teaching hospital and available published data.

Patients; HCV-1b (F3) patients.

Intervension; IFN therapy.

Measurements; QALYs (Quality Adjusted Life Years).

Results of base case analysis; IFN monotherapy was considered favorable for HCV-1b (F3) patients aged 40 to 60 years.

Results of sensitivity analyses; IFN monotherapy should be applied for HCV-1b (F3) patients aged 40 and 50 years at a dose of at least 432 MU. For HCV-1b (F3) patients aged 60 years, IFN monotherapy was not unavilable, if they had no amino-acid mutation in the NS5A 2209-2248 and the virus load was 0.5 Meq/ml or more. IFN + Ribavirin therapy may be the first-line treatment for HCV-1b (F3) patients aged 40 to 60 years, if the combination therapy maintains the HCV-1b (F3) patient QOL score of 0.4 or higher, improves the CR rate to 8.25% to 8.95% or higher, and controls the progression rate of liver disease per year to 8.31% to 8.42% or lower.

Conclusions;
An effective disease management strategies for advanced genotype 1b HCV disease has been developed.

Introduction

Hepatitis C virus (HCV) is a major causes of cirrhosis and hepatocellular carcinoma (HCC) worldwide (1) (2). In order to prevent transition to cirrhosis or HCC, it is necessary to treat HCV. However, interferon (IFN) monotherapy and IFN + Ribavirin therapy (combination therapy) are complex therapies with adverse effects (1) (3).

It has been known that the therapeutic effect of IFN treatment varies depending on the genotype. Chronic hepatitis C of genotype 1b (HCV-1b) is resistant to IFN and most frequently seen worldwide (37-80%) (4) (5) (6) (7) (8). For example, the sustained response rate to IFN monotherapy on HCV-1b is as low as 10% to 25% in Japan and 10% or less in Europe and in the U.S.(9). Also, it has been known that the therapeutic effect of IFN therapy decreases with the progression of hepatic fibrosis. Indeed, the SR of patients with histologically severe hepatitis C virus 1b (hereinafter referred to as "HCV-1b (F3)) to IFN monotherapy was 3.3% to 22.5% in three reports (10) (11) (12) and our clinical study.

On the other hand, according to a recent report, the SR rate of HCV type 1 is significantly improved by combination therapy, as compared with IFN monotherapy.

For example, Solko et al. reported that the SR rate was 8% when IFN monotherapy was performed in HCV type 1 patients without cirrhosis, and the SR rate was improved to 33% when combination therapy was performed (13). Particularly, the SR rate in patients with HCV-1b improved from 13% with IFN monotherapy to 23.3% with combination therapy (14). However, the effect of IFN monotherapy or combination therapy against HCV-1b (F3) is still insufficient. Irrespective of the genotype, the incidence of HCC in HCV (F3) patients is 5.34% per year, which is remarkably high compared with the incidence in patients with mild fibrosis (F0/F1) (0.45%) and in patients with moderate fibrosis (F2) (1.99%) (15).

In addition, both IFN monotherapy and combination therapy are very expensive and cause adverse effects. Therefore, it is necessary to develop disease management strategies that are effective for patients with HCV-1b (F3). However, such strategies have not been developed yet.

Recent reports on HCV-1b have indicated that the therapeutic effect of IFN monotherapy can be predicted based on the HCV RNA level and the number of amino-acid mutations in the 2209-2248 region of NS5A (Interferon sensitivity determining region: ISDR) (2) (16) (17) (18) (19) (20) (21) (22).