

# New, Valid, and Reliable Indonesian Version of the Quality of Life Assessment Instrument Based On the Health Condition: Health-Related Quality of Life With Six Dimensions

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## ABSTRACT

The assessment of health-related quality of life (HRQoL) is a critical component of patient-reported outcome (PRO), as PRO can provide insight into the disease progression and potentially influence clinical decision-making processes. A wide array of quality of life (QoL) assessment instruments is available in Indonesia, encompassing both generic and specific instruments. However, there is a notable absence of instruments designed to assess respondents' functions in relation to their health status. The present study aims to translate, adapt and validate a new QoL assessment instrument based on health status, designated as HRQ-6D (Health-Related Quality of Life, Six Dimensions). The study employed forward and backward translations. The study population comprised individuals residing in Yogyakarta city, aged 18 and above, who consented to participate in the study. Exclusion criteria included incomplete questionnaire data. The questionnaires were disseminated in the Yogyakarta area from September to October 2023. The study used Pearson correlation coefficient, Cronbach's alpha test, and Student's t-test to assess the validity and reliability test. A total of 69 respondents were recruited for this study, with the majority being female (60.9%) and over 60 years of age (80.9%). The reliability test yielded a Cronbach's alpha value between 0.60 and 0.75. All items in the questionnaire demonstrated convergent and discriminant validity. The health status of the respondents was categorized as follows: 59.4% were classified as healthy, while 1.4% had multiple health conditions and had been hospitalized more than three times due to their conditions. The HRQ-6D can be implemented as the new Indonesian language version of the QoL assessment instrument, supported by the validity and reliability assessments. This questionnaire can be used to measure HRQoL in the Indonesian population based on the health status, but it should be noted that the interpretation of QoL is not interchangeable with real health condition.

**Keywords:** HR-QoL; HRQ-6D; Indonesian version; health condition; validity and reliability

## INTRODUCTION

A pharmaceutical concept that has gained significant traction in recent years is the enhancement of patients' quality of life (QoL). Since the year 2000, there has been a surge in research initiatives that explore the patients' quality of life as a treatment outcome (Kheir et al., 2004; Staquet

et al., 1996). Health-related quality of life (HRQoL) can be defined as an assessment of an individual's actual condition from different perspectives, including physical, mental and social dimensions (Rautenberg et al., 2022). This underscores the necessity for instruments capable of assessing patients' conditions, especially in cases of chronic

diseases or those requiring new, expensive and complicated medications (Cohen et al., 2023; Han et al., 2024; Haraldstad et al., 2019).

Research endeavors aimed at evaluating patients' quality of life in relation to particular treatments has been undertaken around the world. For example, the KDQoL SF-36 (Sharma et al., 2023) and the Stroke-Specific Quality of Life Scale (SSQoL-12) (Fong et al., 2023) have been utilized to assess QoL in chronic kidney disease patients and stroke survivors, respectively. Additionally, several instruments are available to measure the QoL of children afflicted with specific psychiatric disorders (Hertz-Palmor & Gothelf, 2022). The importance of these instruments has necessitated the definition of both generic and specific instruments that have been already adapted and validated in local languages. The assessment of HRQoL is a component of the pharmacotherapy objective and can be used to predict patient survival. In the context of pharmacotherapy outcomes, HRQoL can serve as an effectiveness parameter, as the results of HRQoL assessments following drug treatment demonstrate disease progression and/or the efficacy of the drugs (Schaafsma, 2005). The assessment of HRQoL transcends the confines of specific diseases or demographics, encompassing the broader context of the general population or community. A number of studies have assessed HRQoL in general populations using the 12-Item Short Form Health Survey (SF-12) (Bally et al., 2024), the European Quality of Life 5-Dimension 5-Level (EQ-5D-5L) (Siqeca et al., 2022), and the Health Utilities Index Mark 3 (HUI3) (Hirdes et al., 2018) questionnaires.

A number of generic instruments have been adapted and validated in the Indonesian language. These include the European Quality of Life Questionnaire Five-Dimension (EQ-5D) (Purba et al., 2017), the Short Formulary Questionnaire 36 (SF 36) (Sabaan & Perwitasari, 2016), and the WHO QoL BREF questionnaire (Skevington et al., 2004). In addition, some specific questionnaires have also been adapted and validated in the Indonesian language. These include the EORTC-QLQ-C30 and the St. George's Respiratory Questionnaire (SGRQ) (Adnan et al., 2014; Perwitasari et al., 2011). The HRQ-6D, a generic instrument for assessing health-related quality of life, encompasses six domains: "pain", "physical strength", "emotion", "self-care", "mobility," and "perception of future health" (Bujang et al., 2023). This instrument is novel in its assessment of not only, physical, emotional, mobility, self-care, and pain, but also the

perception of future health. This facet is of particular importance, as it enables healthcare providers to provide more comprehensive education to the patients regarding their diseases and treatment options. The generic questionnaire instruments available in the Indonesian language evaluate individuals' well-being based on the inclusion and exclusion criteria of the study. In the event that these instruments are implemented in healthy individuals, the state of being healthy necessitates an additional assessment or clinical context. In such instances, the HRQ-6D proves of capable of measuring an individual's actual health status, given its incorporation of health status question items. The present study, therefore, sought to translate, adapt, and validate a new QoL assessment instrument, namely the HRQ-6D (Health-Related Quality of Life, 6-Dimension), based on health condition.

## **MATERIALS AND METHODS**

The initial HRQ-6D questionnaire was developed in English and subsequently translated into Malay. The questionnaire encompassed three dimensions: health, body function, and future perception. The health dimension consisted of three domains (six questions), including "pain", "physical energy", and "emotion". The body function dimension comprised the "mobility" and "self-care" domains (four questions). The perception dimension consisted of a single domain, namely "perception of future health," with two questions (Bujang et al., 2023).

The validity and reliability procedures of HRQ-6D followed instrument translation procedures, which entailed backward-forward translations (Koller et al., 2007). The backward translations were conducted independently by two lecturers of the department of English of a university. The research team then compared the two versions of forward translations and adapted them to the Indonesian context. No discrepancies were found between the two versions, and the Indonesian language version of HRQ-6D was thus defined. The subsequent procedure was backward translations, which were conducted independently by two native speakers. Subsequently, a comparison was made between the two versions of backward translations and the original version of HRQ-6D. This comparison revealed no significant discrepancies. A focus group discussion, attended by the researchers, was conducted to address potential discrepancies between the two versions. The discrepancies pertained to words: "lack" and

"lacking", "unwell" and "unhealthy", and "tired" and "worn out". The discussion concluded that the intended meaning of the words was similar across both versions.

The validation test was conducted by administering the translated version of the instrument to 69 subjects, with the number of the subjects defined based on the number of the questions in the questionnaire multiplied by five to ten (Krabbe, 2016). Convergent, discriminant and known group validity were conducted to ensure the generalizability of the validation results. Thus the valid and reliable questionnaire can be implemented in a population that is similar to the population of the present study. The inclusion criteria included individuals over the age of 18 residing in Yogyakarta City who consented to participate in the present study. Exclusion criteria involved participants whose questionnaires were not completely filled out. The questionnaires were distributed directly to the subjects in the Yogyakarta area from September to October 2023. Those who were willing to participate were given information about the study and provided with informed consent. The selection of Yogyakarta as the study site was informed by its reputation as a prominent educational hub and a popular tourist destination, attracting visitors from across the country seeking educational opportunities or leisure. This choice was strategic, as it enabled the researchers to access a diverse population within the area. The subjects provided informed consent in accordance with the Ethical Clearance, which bears the reference number SKep/464/KEP/VIII/2023. The subjects' health statuses were defined using parameters from a previous study (Bujang et al., 2023).

Pearson correlation and Cronbach's alpha analysis were performed to define the convergent and discriminant validities and reliability. The convergent validity was met if the correlation between item and its domain reached 0.40. The discriminant validity was met if the correlation between item and its domain was higher than the correlation among item and other domains. The criteria of Cronbach's alpha value followed the category of acceptable value (van Griethuisen et al., 2015). To define the known-groups validity based on the subjects characteristics, the Student's t-test and Kruskal-Wallis test were conducted (Perwitasari et al., 2011). One of the subjects' characteristics that could be associated with the

quality of life is health status, which describe the optimal condition of the subjects. There are five categories of health status:

Category 1: Subjects who report feeling healthy (have never been diagnosed with any medical condition, and have never been hospitalized except for child delivery); Category 2: Subjects who have been diagnosed with one or more medical conditions, but have not been hospitalized (except in cases of child delivery); Category 3: Subjects who have been diagnosed with one or more medical conditions and have been hospitalized due to the condition progression or complications; Category 4: Subjects who have been diagnosed with one or more medical conditions and have been hospitalized more than three times due to the condition progression and complications; Category 5: Subjects who are dependent on medicine and/or medical procedure(s) and/or medical equipment in order to maintain life.

## **RESULTS AND DISCUSSION**

A total of 69 respondents were recruited in this study, and the characteristics of the respondents (Table I). Most of the respondents was female (60.9%), adults aged 60 years or older (86.9%), married (86.9%), had educational attainment of secondary (high) school diploma or equivalent (71%), and had a job (56.5%).

The majority of the subjects were found to have no medical conditions (65.2%) and were not on any regular medication (78.3%). Up to 53.6% of the subjects had a BMI in the overweight or obese category. Furthermore, than fifty percent of the subjects (59.4%) were classified as Category 1, indicating a state of good health, and one subject was found to have multiple medical conditions and had been hospitalized more than three times due to these conditions or their complications (Category 4).

The present study demonstrated the strong validity and reliability of the HRQ-6D questionnaire in the Indonesian language. The Cronbach's alpha value for each domain ranged from 0.60 to 0.75 (Table II), t. A previous study mentioned that a Cronbach' alpha value of 0,60 can be considered acceptable for new studies, exploratory studies, complex construct studies, and studies with fewer items in a scale (Trizano-Hermosilla & Alvarado, 2016). For future studies, it is recommended to increase the sample size to achieve a higher Cronbach's alpha value.

Table I Overview of the Respondents' Characteristics (n=69)

Variable		Frequency (N)	Percentage (%)
Sex	- Female	42	60.9
	- Male	27	39.1
Age	- ≤ 60 yo	60	86.9
	- >60 yo	9	13.1
Marital status	- Married	60	86.9
	- Widowed/Not married	9	13.1
Educational attainment	- Secondary (high) school diploma or equivalent	49	71.0
	- Higher education diploma	20	29.0
Employment status	- Employed/Self-employed	39	56.5
	- Out of work	30	43.5
Current health condition status	- No health conditions	45	65.2
	- Presence of health condition(s)	24	34.8
Taking any regular medication	- Yes	15	21.7
	- No	54	78.3
BMI	- Underweight	6	8.7
	- Normal	26	37.7
	- Overweight and Obese	37	53.6
Health Status	- Category 1	41	59.4
	- Category 2	7	10.1
	- Category 3	20	29.0
	- Category 4	1	1.4
<b>Variable</b>		<b>mean ± SD</b>	
Age (yo)		48.20±12.21	
BMI (kg)		24.84±4.32	

BMI: Body Mass Index

Table II. Reliability Test of Indonesian Language Version of HRQ-6D

Domains (in Indonesian Language)	Cronbach's alpha
Sickness (Sakit)	0.60
Physical Energi (Energi fisik)	0.60
Emotions (Emosi)	0.75
Mobility (Mobilitas)	0.75
Self-care (Perawatan Diri)	0.60
Perceptions of future health (Persepsi terhadap kesehatan di masa mendatang)	0.72

The acceptable value of Cronbach's alpha in this study is between 0.60 and 0.75 (Trizano-Hermosilla & Alvarado, 2016).

The convergent validity was adequate, indicating that the instruments measured the same construct (>0.50) (Table III). The validity and reliability of a research instrument refer to its accuracy and consistency (Ranganathan et al., 2024). The HRQ-6D has been demonstrated to evaluate the quality of life based on respondents' health conditions. A previous study with a large number of respondents showed that there is an association between HRQ-6D scores across all dimensions and respondents' health status

(Bujang et al., 2023). Questionnaires with a broad spectrum, like HRQ-6D, are generally applicable to both healthy and sick respondents across different ages and health conditions (Pequeno et al., 2020).

The application of HRQ-6D in Indonesia is anticipated in the future, given the prevalence of diseases with minimal or non-existent symptoms, often referred to as "silent killer" diseases, such as cancer and hypertension. In comparison to previous instruments, the HRQ-6D provides results based on the subjects' actual health status.

Table III. The Results of the Convergent and Discriminant Validity Analyses of the Indonesian Language Version of HRQ-6D

Statements	Sickness	Physical energy	Emotions	Mobility	Self-care	Perceptions of future health
I feel pain in all parts of my body - Pearson Correlation Sig. (2-tailed)	<b>.866**</b> <b>.000</b>	.252 .052	.324* .012	.066 .617	.278* .032	-.130 .320
I feel unwell - Pearson Correlation Sig. (2-tailed)	<b>.815**</b> <b>.000</b>	.239 .066	.456** .000	.241 .064	.282* .029	.014 .918
I feel lacking in physical energy - Pearson Correlation Sig. (2-tailed)	.184 .159	<b>.850**</b> <b>.000</b>	.367** .004	.068 .064	.226 .082	.154 .239
I feel worn out, even when resting - Pearson Correlation Sig. (2-tailed)	.309* .016	<b>.820**</b> <b>.000</b>	.463** .000	.181 .166	.428** .001	.281* .030
I feel depressed - Pearson Correlation Sig. (2-tailed)	.370** .004	.421** .001	<b>.910**</b> <b>.000</b>	.390** .002	.519** .000	.232 .075
I feel anxious - Pearson Correlation Sig. (2-tailed)	.454** .000	.467** .000	<b>.881**</b> .000	.435** .001	.427** .001	.105 .426
I experience difficulty in moving from one place to another place - Pearson Correlation Sig. (2-tailed)	.280* .030	.171 .192	.563** .000	<b>.868**</b> <b>.000</b>	.472** .000	.046 .729
My movements are slower than for a person of my age - Pearson Correlation Sig. (2-tailed)	.086 .511	.113 .392	.334** .009	<b>.952**</b> <b>.000</b>	.269* .038	.156 .233
I have problems in meeting my daily needs for self-care - Pearson Correlation Sig. (2-tailed)	.187 .153	.261* .044	.619** .000	.415** .001	<b>.831**</b> <b>.000</b>	.265* .041
I have problems in doing housework - Pearson Correlation Sig. (2-tailed)	.366** .004	.385** .002	.280* .030	.222 .001	<b>.848**</b> <b>.000</b>	.094 .474
I am worried that I will suffer poor health in the next 5 years - Pearson Correlation Sig. (2-tailed)	.019 .887	.305* .018	.229 .078	.040 .759	.223 .086	<b>.890**</b> <b>.000</b>
I am worried that I will have a shorter life than people of my age - Pearson Correlation Sig. (2-tailed)	-.156 .234	.147 .263	.109 .109	.182 .165	.149 .254	<b>.880**</b> <b>.000</b>

\*\* : significant p-value; Bold font indicates that the convergent and discriminant validity has been met.

Table IV. The Association of Subjects' Characteristics and HRQ-6D Domains

Subjects' characteristics	Sickness Mean ± SD	Physical energy Mean ± SD	Emotions Mean ± SD	Mobility Mean ± SD	Self-care Mean ± SD	Perceptions of future health Mean ± SD
<b>Sex</b>						
Male	74.07±12.17	69.63±12.85	78.52±7.69	78.89±6.97	77.03±10.30	72.22±13.10
Female	73.81±13.78	73.81±13.60	80±9.87	82.38±6.55	80.71±6.39	72.85±14.53
P-value	0.935	0.207	0.511	<b>0.039*</b>	0.071	0.854
<b>Age</b>						
≤ 60 yo	73.83±13.41	73.67 ± 12.88	79.67±8.63	81±6.81	79±8.77	71.5±14.47
>60 yo	74.44±11.30	62.22 ± 13.01	77.78±12.02	81.11±7.81	81.11±3.33	80±5
P-value	0.897	<b>0.015*</b>	0.563	0.964	0.479	0.087
<b>Marital status</b>						
Married	75±12.14	73±13.06	79.67 ± 9.38	80.83±6.96	79.83±8.13	73.67±13.01
Widowed/Not married	66.67±17.32	66.67±15	77.78 ± 6.67	82.22±6.67	75.55±8.82	65.55±18.10
P-value	0.074	0.187	0.563	0.576	0.149	0.103
<b>Educational attainment</b>						
Secondary (high) school diploma or equivalent	73.47±13.31	71.22±14.08	78.77±9.49	80.41±6.44	78.57±8.89	73.87±12.88
Higher education diploma	75±12.77	74.5±11.46	81 7.88	82.5±7.86	81±6.40	69.5±16.05
P-value	0.662	0.360	0.358	0.255	0.272	0.238
<b>Employment status</b>						
Employed/Self-employed	74.10±13.71	72.05±13.41	80±7.94	80.77±8.07	77.69±10.12	71.28±14.89
Out of work	73.67±12.45	72.33±13.56	78.67±10.41	81.33±5.07	81.33±4.34	74.33±12.50
P-value	0.892	0.931	0.548	0.738	0.069	0.369
<b>Current health condition status</b>						
No health conditions	74±13.88	72.44±14.16	79.55±9.03	80.89±7.33	78.89±9.58	71.33±14.55
Presence of health condition(s)	73.75±11.72	71.67±12.04	79.17±9.28	81.25±6.12	80±5.10	75±12.51
P-value	0.940	0.820	0.867	0.837	0.599	0.299
<b>Taking any regular medication</b>						
No	74.26±13.11	73.33±13.17	80±8.68	81.11±7.18	79.25±8.87	71.85±14.28
Yes	72.67±13.34	68±13.73	77.33±10.32	80.67±5.93	79.33±5.93	75.33±12.46
P-value	0.679	0.173	0.316	0.827	0.976	0.395
<b>BMI</b>						
Underweight	73.33±10.33	61.67±18.35	80±12.65	83.33±8.16	81.67±4.08	66.67±20.66
Normal	75.38±14.20	75.38±12.72	80.77±8.91	82.30±8.63	80±11.31	72.30±15.57
Overweight and Obese	72.97±12.88	71.62±12.36	78.38±8.66	79.73±4.99	78.38±6.01	73.78±11.39
P value	0.501	0.153	0.654	0.415	0.426	0.809
<b>Health Status</b>						
Category 1	75.36±13.05	72.92±13.64	80±10	81.46±8.23	79.51±9.73	70±15.65
Category 2	68.57±10.69	70±12.91	77.14±7.56	80	77.14±7.56	74.28±15.11
Category 3	72.5±14.09	71.5±13.87	79±7.88	81±4.47	79.5±5.10	78±6.96
Category 4	80	70	80	70	80	60
P-value	0.249	0.871	0.756	0.120	0.904	0.075

\*: significant p-value

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If researchers implement this questionnaire in the general population, the results can be used to inform health policy decisions tailored to the needs of the population. Hypertension, a major cause of mortality in Indonesia, can be detected using this questionnaire. The government can then use the results of the quality of life assessment to plan facilities and services to prevent complications from hypertension (Wang et al., 2018).

There are several generic instruments for assessing quality of life available in the Indonesian language that have been used in some studies in Indonesia, including the Short Formulary 36 (SF-36) (Rachmawati et al., 2014) (Novitasari et al., 2016) (Sabaan & Perwitasari, 2016) and EuroQol-5 Dimension (EQ-5D) (Purba et al., 2017). The HRQ-6D is distinctive in that it categorizes the response based on their health status. In comparison to the SF-36, the HRQ-6D employs a simpler format with a lesser number of questions. The HRQ-6D commences with questions pertaining to pain, physical function, and emotions, which are components of the "health" domain. Questions regarding mobility and self-care are classified under the "body" domain, while those concerning the perception of future health are scored under "functions" domain. This approach differs from the EQ-5D, which begins with physical perspectives and is assumed to reflect physical function (Bujang et al., 2023; Purba et al., 2017).

There is another simple QoL questionnaire, the SF-6D, which is derived from the SF-36. This questionnaire has six dimensions with six domains: physical function, role limitation, social function, pain, mental health, and vitality. The SF-6D differs from other questionnaires in its specific items in the role limitation and vitality dimensions, which are not included in the SF-36 (Wang & Poder, 2023). The Indonesian language version of the SF-6D questionnaire has been tested for validity and reliability among residents in the city of Yogyakarta, with a Cronbach's alpha coefficient value of 0.752 ( $r > 0.5$ ), indicating good reliability. The SF-6D questionnaire was also used to measure HRQOL in hemodialysis patients in Yogyakarta, and it demonstrated good internal consistency, as indicated by a Cronbach's alpha value of 0.771 (Andayani et al., 2020; Fatimah et al., 2021).

The number of studies on the HRQ-6D is limited; the present study identified only one other study (Bujang et al., 2023), conducted in Malaysia. The present study used a different process, beginning with the forward and backward

translations. The minimum Cronbach's alpha value in the present study was less than the minimum Cronbach's alpha value in the previous study. This discrepancy could be attributed to variations in subjects characteristics or the study's location, as well as the few number of items in the scale. The previous study in Malaysia did not assess convergent, discriminant, and known-group validities, which are met by the results of this study.

The association between subjects' characteristics and six domains of HRQ-6D, revealing a statistically significant association (0.039) between sex and the "mobility" domain, as well as association (0.015) between age and the "physical energy" domain (Table IV). The findings underscore the established link between aging and diminished quality of life, particularly in the physical dimension. Moreover, advanced age is associated with a decline in motor functions (Krawczyk-Suszek & Kleinrok, 2022).

As illustrated in Table 5, an association was identified between HRQ-6D dimensions and subjects' characteristics. Sex was found to be associated with body function dimension. Contrary to the findings of a previous study conducted in Malaysia, the present study revealed that health status was not associated with all dimensions. This discrepancy could be attributed to the smaller sample size in the present study.

The "mobility" dimension exhibited analogous results to those of prior studies concerning global trends of insufficient physical activity. Previous studies indicated that women exhibited higher quality of life due to their mobility for recreation or transportation. They demonstrated greater consistency in engaging in mobility activities due to other needs, such as social needs and shopping activities (Pollard and Wagnild, 2017; Song et al., 2023). A 2016 prevalence study of physical activity in Southeast Asia revealed that 17.6% of men and 16.9% of women exhibited insufficient physical activity, with the proportion among men being marginally higher than among women (Guthold et al., 2018). Notably, lower physical activity has been associated with diminished quality of life (Elliot & Green, 2024).

The present study's limitations stem from its modest sample size, which hinders the attainment of higher reliability and validity. Additionally, the study did not include an equal number of respondents across diverse health statuses.

Table V. The Association Between Subjects' Characteristics and HRQ-6D Dimensions

Subjects' characteristics	Health Mean ± SD	Body Function Mean ± SD	Perception Mean ± SD	Total HRQ-6D Mean ± SD
Sex				
Male	74.07 ± 8.23	77.96 ± 6.83	72.22 ± 13.10	75.06 ± 6.94
Female	75.87 ± 10.19	81.55 ± 5.89	72.85 ± 14.53	77.26 ± 7.14
P-value	0.445	<b>0.024*</b>	0.854	0.211
Age				
≤ 60 yo	75.72 ± 9.39	80 ± 6.64	71.5 ± 14.47	76.44 ± 7.30
>60 yo	71.48 ± 9.59	81.11 ± 5.46	80 ± 5	76.11 ± 5.89
P-value	0.212	0.635	0.087	0.897
Marital status				
Married	75.88 ± 9.41	80.33 ± 6.56	73.67 ± 13.01	77.00 ± 6.98
Widowed/Not married	70.37 ± 8.73	78.89 ± 6.00	65.55 ± 18.10	72.40 ± 6.92
P-value	0.103	0.536	0.103	0.070
Educational attainment				
Secondary (high) school diploma or equivalent	74.49 ± 9.85	79.49 ± 6.39	73.87 ± 12.88	76.05 ± 7.41
Higher education diploma	76.83 ± 8.41	81.75 ± 6.54	69.5 ± 16.05	77.25 ± 6.35
P-value	0.354	0.190	0.238	0.530
Employment status				
Employed/Self-employed	75.38 ± 9.16	79.23 ± 7.57	71.28 ± 14.89	75.98 ± 7.59
Out of work	74.88 ± 9.97	81.33 ± 4.53	74.33 ± 12.50	76.94 ± 6.47
P-value	0.831	0.183	0.369	0.581
Current health condition status				
No health conditions	75.33 ± 10.28	79.89 ± 7.19	71.33 ± 14.55	76.18 ± 7.96
Presence of health condition(s)	74.86 ± 7.86	80.63 ± 4.96	75 ± 12.51	76.80 ± 5.24
P-value	0.845	0.656	0.299	0.732
Taking any regular medication				
No	75.86 ± 9.53	80.19 ± 6.86	71.85 ± 14.28	76.63 ± 7.34
Yes	72.66 ± 9.01	80 ± 5	75.33 ± 12.46	75.55 ± 6.29
P-value	0.249	0.923	0.395	0.606
BMI				
Underweight	71.67 ± 10.69	82.50 ± 6.12	66.67 ± 20.66	74.44 ± 6.20
Normal	77.18 ± 9.96	81.15 ± 8.75	72.30 ± 15.57	77.69 ± 8.73
Overweight and Obese	74.32 ± 8.85	79.05 ± 4.22	73.78 ± 11.39	75.81 ± 5.88
P value	0.367	0.351	0.809	0.810
Health Status				
Category 1	76.09 ± 10.21	80.49 ± 7.73	70 ± 15.65	76.54 ± 7.93
Category 2	71.90 ± 6.62	78.57 ± 3.78	74.28 ± 15.11	74.52 ± 6.29
Category 3	74.33 ± 8.92	80.25 ± 4.12	78 ± 6.96	76.91 ± 5.75
Category 4	76.67	75	60	73.33
P-value	0.374	0.396	0.075	0.455

\*: significant p-value

## CONCLUSION

The Indonesian version of HRQ-6D has demonstrated validity and reliability following its adaptation to the Indonesian context, suggesting its potential use in measuring QoL. However, further validation is necessary for its application in particular disease contexts. The adaptation of HRQ-6D in Indonesia for general populations offers advantages, including its capacity to assess health status through the instrument's question items.

This assessment can serve as a screening method for planning the health policy. Future studies with larger sample size are necessary to further refine the questionnaire.

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**CONFLICT OF INTEREST**

The authors declare that they have no conflicts of interest.

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