Health-Related Quality of Life of Patients with HPV-Related Cancers in Indonesia

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ABSTRACT

Background: Human papillomavirus (HPV)-related cancers are a serious concern in developing countries. Valid estimates of a country-specific health-related quality of life (HRQOL) for patients with HPV-related cancers provide a substantial tool in determining the burden of the disease. Objectives: To investigate the HRQOL of patients with HPV-related cancers in Indonesia. Methods: The HRQOL of patients with HPV-related cancers (cervical, uterine, nasopharyngeal, head and neck, and anogenital cancer) was assessed using the EuroQol five-dimensional questionnaire (EQ-5D). Validity and reliability were assessed by means of construct validity and test-retest reliability methods, respectively. Subsequently, the EQ-5D utility index was calculated using the Thailand value set. Results: The EQ-5D came out as a valid and reliable questionnaire for measuring the HRQOL of patients with HPV-related cancers in Indonesia. From a total of 520 patients diagnosed with HPV-related cancers, 404 patients were included after fulfilling the inclusion criteria, and so 116 patients finally participated in the study. The mean age of the patients was 47.5 ± 12.03 years. Most of the patients were women (56.0%) and married (97.4%), and less than half of them had finished high school (32.7%). Moreover, the proportions of nasopharyngeal, cervical, head and neck, anogenital, and uterine cancers in the study population were 29.3%, 24.6%, 22.4%, 14.2%, and 9.5%, respectively. The average HRQOL of the patients with HPV-related cancers was 0.69 ± 0.10, with the highest and lowest estimates applying to uterine cancer (0.84 ± 0.29) and head and neck cancer (0.58 ± 0.33), respectively. Conclusions: The HRQOL of patients with HPV-related cancers was found to be reduced to a certain extent in our study for Indonesia. Keywords: cervical cancer, health-related quality of life, HPV-related cancer, human papillomavirus, Indonesia.

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Introduction

Human papillomavirus (HPV) infections are a well-established cause of not only cervical cancer [1–4] but also other cancers, including head and neck, anogenital (anus, vulva, vagina, and penis), uterine, and nasopharyngeal cancers [5,6]. In addition, the global burden of HPV-related cancers is increasing, and developing countries, including Indonesia, bear a high proportion of this burden [7]. For example, data reported by the Ministry of Health in Indonesia showed that HPV-related cancers, especially cervical and nasopharyngeal cancers, were among the 10 cancers with the highest incidence and mortality rate in Indonesia [8].

Various health technologies such as chemotherapy [9,10], prevention strategies [11–14], new hormonal therapies [15,16], and clinical practice guidelines [17] are constantly developed and changed to combat cancer. The implementation of these health technologies has resulted in a wide range of improvements in outcome measures, with success being influenced by cancer type, study site, outcome measure, or even the cancer treatment and prevention itself [18,19]. Nevertheless, various, and sometimes life-threatening, side effects from the treatments could possibly occur, and the health technologies as well as their side effects occasionally influence not only the health status of the patients but also their social and emotional well-being.

Conflicts of interest: D. Setiawan has received the Directorate General of Higher Education Scholarship, Ministry of National Education, Indonesia. M. J. Postma reports grants and personal fees from various pharmaceutical industries, potentially not interested in the subject matter, during the conduct of the study; grants and personal fees from various pharmaceutical industries, potentially not interested, outside the submitted work; and 3% of stocks of Ingress Health. A. Dusafritri, G. F. Galistiani, A. D. I. van Asselt declare that they have no conflicts of interest. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

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Within this broad variety of issues, the need for comparability of outcomes has been recognized and the term “health-related quality of life” (HRQOL) for this purpose is widely accepted [20,21]. HRQOL generally captures the complete health state of an individual because it includes several important health parameters from, for example, the physical, psychological, and social health dimensions [22]. Any reduction in the value of HRQOL reflects a reduction in the health of the individual. Therefore, HRQOL is able to convey important information for assessing the overall burden of a disease and the effectiveness of interventions as well.

With regard to cancer disease, HRQOL measurement tools may be classified as generic, general cancer, cancer-site-specific, and cancer-problem-specific. General cancer, cancer-site-specific, and cancer-problem-specific HRQOL measurement tools generally provide more detailed information in a single cancer-type or cancer-related problem, whereas an ultimate advantage of generic HRQOL measurement tools is that because they can be implemented over a wide range of conditions and interventions, they enable comparison of outcomes across diseases [23,24]. One example of a generic questionnaire is the EuroQol five-dimensional questionnaire (EQ-5D), which was developed by the EuroQol group and is widely used across the world [25–27]. Further advantages of the EQ-5D are that it has only five questions and it is easy to administer and complete. The EQ-5D is of two types: the three-level EQ-5D (EQ-5D-3L) and the more recently developed version with five levels (EQ-5D-5L). Several studies support both the validity and the sensitivity of the EQ-5D in patients with cancer [24,28]. Nevertheless, some studies suggest that the EQ-5D-5L has less ceiling effects and better discriminative abilities with potentially more power to detect differences between groups as compared with the EQ-5D-3L [29,30].

Indonesia-specific HRQOL of HPV-related cancers provides initial information in decision-making processes because it will assist subsequent processes such as cost-utility analyses. Subsequently, this will allow for comparing outcomes of interventions for HPV-related cancers with the outcomes of other interventions, within as well as outside the area of HPV-related cancers. The purpose of this study was to investigate the HRQOL of patients with HPV-related cancers in Indonesia using the EQ-5D-5L.

### Methods

A descriptive cross-sectional study was conducted, directed at the HRQOL of patients with HPV-related cancers in Indonesia. The study was divided into two main activities, consisting of pilot testing and the main study. Notably, this study was approved by the ethics committee of the Faculty of Medicine, Gadjah Mada University, Yogyakarta, Indonesia.

### Pilot Study

Initially, a pilot study was conducted to evaluate the validity and reliability of the EQ-5D for patients with HPV-related cancers in the specific Indonesian setting. A convenience sample of 30 patients with HPV-related cancers was recruited from Dadi Keluarga Public Hospital, Purwokerto, Indonesia. On the recruitment day (day 0), patients filled out both the EQ-5D-5L and the European Organization for Research and Treatment of Cancer Quality-of-Life Questionnaire C30 (EORTC QLQ-C30), a cancer-specific questionnaire. On day 14, patients filled out the EQ-5D-5L a second time.

As mentioned, the EQ-5D is a generic quality-of-life instrument developed by the EuroQol group and contains five questions and a visual analogue scale (VAS). The questions comprise five different dimensions, that is, mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. We adopted the updated version of the EQ-5D containing five levels of severity on each dimension because it was considered to be more sensitive and reliable compared with the previous three-level version (EQ-5D-3L). In addition, the VAS records a patient’s self-rated health perception, graded between 0 (worst) and 100 (best).

The EORTC QLQ-C30 is a disease-specific questionnaire developed mainly to assess the quality of life of patients with cancer. It consists of three different scales: functional (15 questions), symptoms (13 questions), and global quality of life (2 questions). The EORTC QLQ-C30 was chosen as the comparator in the validation process because the Indonesian version has been validated [31] and some questions, particularly on global health status, physical function, role function, emotional function, and pain, have been identified as significant predictors of the EQ-5D outcomes according to several mapping studies [32–35]. Therefore, construct validity testing, that is, assessing whether the EQ-5D can be interpreted as a meaningful measure of quality of life, was performed by measuring the correlation between each mapped question of the EQ-5D and the EORTC QLQ-C30 because they have the same construct (convergent validity method) [36]. Each of the EORTC QLQ-C30 subscales was considered to be correlated with an EQ-5D dimension when the statistically significantly Pearson correlation coefficient indicated so [22,24,25]. Furthermore, the value of the Pearson correlation coefficient represents the magnitude and the direction of the correlation [37].

To ensure the reliability of the EQ-5D, the two measurements (day 0 and day 14) were compared within patients to assess test-retest reliability [38]. This method was chosen because in patients with cancer, significant changes in quality of life rarely occur within a 14-day interval and although a clear recommendation to avoid recall bias is scarcely available and often debatable, this 14-day interval is considered sufficient to avoid recall bias [39]. Test-retest reliability represents measurement stability, using intraclass coefficients (ICCs) [40,41]. ICC values were interpreted as follows: weak agreement if the ICC is lower than 0.40, good agreement if the ICC lies between 0.40 and 0.75, and excellent agreement if the ICC is 0.75 or higher [41]. In addition, the Cronbach’s α was calculated to assess internal consistency, that is, to determine whether the EQ-5D questions together measure the same construct of the HRQOL of patients with HPV-related cancers. Internal consistency was considered to be good if the Cronbach’s α was higher than or equal to 0.80 [38].

### Main Study

All registered patients from 2010 to 2015 in Margono Public Hospital, Purwokerto, Indonesia, were screened for their eligibility. Inclusion criteria were as follows: patients were older than 18 years, were diagnosed with any HPV-related cancer (cervical, uterine, nasopharyngeal, head and neck, or anogenital cancer), and had received any care in the hospital. Patients with chronic disease comorbidity were excluded. A clinical convenient sample was implemented for all patients who were eligible and received and signed informed consent before both the EQ-5D and the EORTC QLQ-C30 were filled out while the patient’s sociodemographic and clinical information, such as age, sex, education level, and diagnosis of cancer, were collected from medical records. These two separate data sets were matched according to the medical record number for each patient.

Each dimension of the EQ-5D-5L is presented as a dichotomous outcome: no problem (answer level 1) or problems (answer levels 2–5). Furthermore, a major outcome provided by the EQ-5D
is an index-based value (utility index) allowing the calculation of quality-adjusted life-years [42]. This utility index, ranging from lower than 0 (worse than death) to 1 (perfect health), is generated by transforming patients’ responses to the five questions, using a country-specific value set. Because an Indonesia-specific value set is not available yet, the utility index was calculated using the Thai value set and subsequently presented by cancer type [43].

Statistical analysis was performed to identify the differences of both the EQ-5D utility index and the EQ-5D VAS score on the basis of the study characteristics and cancer groups. Because the results of the Shapiro-Wilk normality test showed that both parameters were not normally distributed (P value of 0.000 for both parameters), a nonparametric test was implemented. The Mann-Whitney U test was used for the variables sex and marital status, whereas the Kruskal-Wallis H test was used for education level and cancer groups.

Results

Pilot Study

The age of the patients in the pilot study ranged from 22 to 68 years with a mean of 51.5 ± 11.5 years (data not shown). Most of the patients were women (56.7%) and diagnosed with head and neck cancer (70.0%), followed by cervical cancer at 13.4% and nasopharyngeal cancer at 10.0% (data not shown). According to the ICCs generated from test-retest reliability, each subscale in the Indonesian version of the EQ-5D had an excellent agreement (≥0.75). The EQ-5D VAS scores had a good agreement with the ICC of 0.73. In addition, the EQ-5D had a good internal consistency because the value of Cronbach α was higher than 0.80 (Table 1).

There were significant relationships between almost all the dimensions of the Indonesian version of the EQ-5D with mapped subscales of the EORTC QLQ-C30 including physical function, role function, fatigue, and pain. Only the mobility dimension of the EQ-5D seemed uncorrelated with the social function subscale of the EORTC QLQ-C30. Meanwhile, only the global health status subscale of the EORTC QLQ-C30 correlated with the EQ-5D anxiety/depression dimension, whereas only the cognitive function subscale correlated with the pain/discomfort dimension. The EQ-5D VAS was apparently correlated with all the EQ-5D dimensions and the EORTC QLQ-C30 subscales, except cognitive function (Table 2). Strong correlations were generated by some of the EQ-5D dimensions and the EORTC QLQ-C30 subscales, such as between self-care and physical function, usual activities and physical function, and pain/discomfort and pain, with correlation coefficients of −0.870, −0.855, and 0.842, respectively.

Main Study

From the hospital database, a total of 520 patients were identified for this study of whom 374 were eligible for inclusion and subsequently, if possible, were visited at their home. Finally, 116 patients were included in the study (Fig. 1).

The mean age of the patients was 47.5 ± 12.03 years (range 18–75 years). Most of the patients were women (56.0%) and married (97.4%), and less than half of them had finished high school (32.7%). Moreover, the proportions of nasopharyngeal, cervical, head and neck, anogenital, and uterine cancers in the study population were 29.3%, 24.6%, 22.4%, 14.2%, and 9.5%, respectively (Table 3).

The statistical analysis showed that utility index was not statistically significantly different with respect to most of the patients’ characteristics at baseline, except for education level (P = 0.039). Nevertheless, because the analysis was performed using nonparametric methods, the specific differences in each group could not be identified. Furthermore, the EQ-5D VAS score was not statistically significantly different with respect to patients’ characteristics.

On the basis of information collected using the Indonesian version of the EQ-5D-5L (Table 4), the highest reduction on the mobility dimension was seen in cervical cancer (46.42%). With regard to the self-care dimension, only a few patients with HPV-related cancers (<20%) encountered problems. Meanwhile, almost half (41.38%) of the patients reported difficulties on the usual activity dimension. Problems on the pain/discomfort dimension

| Table 1 – Reliability test of the EQ-5D for patients with HPV-related cancer. |
|-----------------------------|----------|----------|
| Dimension                  | ICC      | Cronbach α |
| Mobility                   | 0.97     | 0.84     |
| Self-care                  | 0.95     |          |
| Usual activities           | 0.79     |          |
| Pain/discomfort            | 0.64     |          |
| Anxiety/depression         | 0.82     |          |
| EQ-5D VAS                  | 0.73     |          |

EQ-5D, EuroQol five-dimensional questionnaire; HPV, human papillomavirus; ICC, intraclass correlation coefficient; VAS, visual analogue scale.

| Table 2 – Convergent validity reflected with Pearson correlation coefficients. |
|-----------------------------|----------|----------|----------|----------|----------|----------|
| EORTC QLQ-C30               | Mobility | Self-care | Usual activities | Pain/discomfort | Anxiety/depression | EQ-5D VAS  |
| Global health status        | −0.198   | −0.08    | −0.081   | −0.288   | −0.482   | 0.489    |
| Physical function           | −0.777   | −0.870   | −0.855   | −0.502   | −0.616   | 0.691    |
| Role function               | −0.675   | −0.534   | −0.719   | −0.613   | −0.481   | 0.618    |
| Emotional function          | −0.535   | −0.456†  | −0.327   | −0.337   | −0.592   | 0.426†   |
| Cognitive function          | 0.114    | 0.059    | −0.025   | −0.490†  | 0.06     | −0.023   |
| Social function             | −0.304   | −0.406†  | −0.364†  | −0.498   | −0.433†  | 0.363†   |
| Fatigue                     | 0.498    | 0.430†   | 0.400†   | 0.520    | 0.519    | −0.027   |
| Pain                        | 0.536    | 0.503    | 0.625    | 0.842    | 0.538    | −0.663   |

EORTC QLQ-C30, European Organization for Research and Treatment of Cancer Quality-of-Life Questionnaire C30; EQ-5D, EuroQol five-dimensional questionnaire; VAS, visual analogue scale.

† Significantly correlated at the P < 0.01 level.

§ Significantly correlated at the P < 0.05 level.
were heterogeneous. Patients with nasopharyngeal cancer reported a high proportion of pain/discomfort issues (67.65%), whereas none of the patients with uterine cancer reported pain/discomfort. In addition, a high proportion of patients with nasopharyngeal cancer (55.88%), cervical cancer (53.85), and anogenital cancer (53.57%) experienced anxiety/depression problems. In contrast, patients with uterine cancer reported a high proportion of pain/discomfort issues (67.65%), whereas none of the patients with uterine cancer reported pain/discomfort.

The overall value of the EQ-5D VAS for all included patients with HPV-related cancers was relatively high (77.38 ± 6.42), ranging from 72.05 ± 25.55 to 88.54 ± 14.60 for anogenital cancer and uterine cancer, respectively. The utility index was also moderately high (0.69 ± 0.10) for the overall patient population included. The highest value for the EQ-5D utility index was found in uterine cancer (0.84 ± 0.29), followed by nasopharyngeal cancer (0.75 ± 0.30), anogenital cancer (0.68 ± 0.35), cervical cancer (0.61 ± 0.39), and head and neck cancer (0.58 ± 0.33). Finally, the Kruskal-Wallis test showed that both utility index and VAS were not statistically significantly different because the P values were 0.059 and 0.144, respectively.

Discussion

Our study shows that there are various reductions in the HRQOL of patients with HPV-related cancers in Margono Public Hospital, PURWOKERTO, INDONESIA. Although the reference utility index for the healthy population in Indonesia is not available yet, two studies showed that the utility index in a healthy population in Sri Lanka and South Australia was 0.85 (95% confidence interval 0.84–0.87) and 0.91 (95% confidence interval 0.90–0.91), respectively. These findings are apparently congruent with a study from Australia that suggested that the HRQOL of patients with HPV-related cancers ranged from 0.57 to 0.79 [44]. In particular, our finding on head and neck cancer is similar to findings in studies from Italy (0.69 ± 0.30) and Australia (0.58 ± 0.50), but these findings were considerably lower than the finding in a study from Canada (0.83 ± 0.14) [44–46]. Several studies in patients with cervical cancer reported similar utility indexes, such as an Italian study (0.58 ± 0.31), a US study (0.68), and a study in another region of Indonesia using the EQ-5D-3L and the Malaysian value set (0.76 ± 0.20) [45,47,48]. Furthermore, the utility indexes for anogenital cancer and nasopharyngeal cancer from this study were slightly higher compared with what were found in Italy (0.50 ± 0.26) and Australia (0.58 ± 0.05), respectively [44,45]. The differences in utility indexes across studies might be caused by several issues including different perceptions of health across populations and countries as partly represented by the different value sets [49], several characteristics including age and education [50], and also the use of different types of EQ-5D (notably, 5L and 3L) [30,51].

According to our study, the most commonly reported problems by all types of patients with HPV-related cancers were pain/discomfort followed by anxiety/depression. These findings were considerably strengthened by previously published studies in patients with cervical cancer [48] and gynecological cancer [31] in Indonesia using the EQ-5D and the EORTC QLQ-C30, respectively. The finding of zero cases of pain/discomfort reported by patients with uterine cancer may have been caused by the small number of patients, or the fact that patients were fully adapted to their condition. Nevertheless, most studies on the HRQOL of patients with cancer explained that the pain/discomfort dimension had the highest proportion of problems reported in comparison with other dimensions in the EQ-5D [25,27,52,53]. Although several recommendations on cancer-related pain management exist [17,54], cancer-related pain, commonly caused by both the cancer itself and the cancer treatment, is still an important issue [55,56].

The EQ-5D was found to be a reliable and valid instrument for measuring the HRQOL of patients with HPV-related cancers in Indonesia, as evidenced by excellent agreement on test-retest

<p>| Table 3 – Characteristics of the study population (N = 116). |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|</p>
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>Percent</th>
<th>EQ-5D index</th>
<th>P value</th>
<th>EQ-5D VAS</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (y)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean ± SD</td>
<td>47.53 ± 12.03</td>
<td>44.0</td>
<td>0.66 (0.34)</td>
<td>0.891</td>
<td>75.86 (16.79)</td>
<td>0.398</td>
</tr>
<tr>
<td>Range</td>
<td>18–75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>51</td>
<td>44.0</td>
<td>0.67 (0.36)</td>
<td>76.12</td>
<td>22.83</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>65</td>
<td>56.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education level</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>No schooling</td>
<td>4</td>
<td>3.4</td>
<td>0.87 (0.16)</td>
<td>83.75</td>
<td>11.09</td>
<td></td>
</tr>
<tr>
<td>Elementary school</td>
<td>74</td>
<td>63.8</td>
<td>0.61 (0.38)</td>
<td>73.08</td>
<td>22.75</td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>31</td>
<td>26.7</td>
<td>0.81 (0.18)</td>
<td>81.58</td>
<td>14.43</td>
<td></td>
</tr>
<tr>
<td>Undergraduate</td>
<td>7</td>
<td>6.0</td>
<td>0.59 (0.52)</td>
<td>77.86</td>
<td>14.10</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>113</td>
<td>97.4</td>
<td>0.67 (0.35)</td>
<td>76.08</td>
<td>20.39</td>
<td></td>
</tr>
<tr>
<td>Not married</td>
<td>3</td>
<td>2.6</td>
<td>0.72 (0.48)</td>
<td>73.33</td>
<td>20.82</td>
<td></td>
</tr>
</tbody>
</table>

EQ-5D, EuroQol five-dimensional questionnaire; VAS, visual analogue scale.

*Significantly different at the p.
Table 4 – Frequency of reported problems, EQ-5D index, and VAS by cancer type, dimension level, and neck cancer (n = 26).

<table>
<thead>
<tr>
<th>Dimension Level</th>
<th>Nasopharyngeal cancer (n = 34)</th>
<th>Cervical cancer (n = 28)</th>
<th>Head and neck cancer (n = 30)</th>
<th>Anogenital cancer (n = 17)</th>
<th>Uterine cancer (n = 11)</th>
<th>HPV-related cancer (n = 11)</th>
<th>( n = 34 )</th>
<th>( n = 28 )</th>
<th>( n = 17 )</th>
<th>( n = 11 )</th>
<th>( n = 11 )</th>
<th>( n = 116 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility (%)</td>
<td>No problems 26 (76.47)</td>
<td>10 (58.82)</td>
<td>14 (88.64)</td>
<td>5 (83.33)</td>
<td>2 (18.18)</td>
<td>81 (69.83)</td>
<td>75.47 ± 0.75</td>
<td>74.82 ± 0.25</td>
<td>76.03 ± 0.15</td>
<td>72.05 ± 0.35</td>
<td>88.54 ± 0.14</td>
<td>77.38 ± 0.62</td>
</tr>
<tr>
<td></td>
<td>Problems* 8 (23.53)</td>
<td>7 (41.18)</td>
<td>2 (11.36)</td>
<td>2 (16.67)</td>
<td>1 (18.18)</td>
<td>35 (29.17)</td>
<td>69.53 ± 0.75</td>
<td>63.18 ± 0.25</td>
<td>63.97 ± 0.15</td>
<td>65.95 ± 0.35</td>
<td>72.66 ± 0.14</td>
<td>62.92 ± 0.62</td>
</tr>
<tr>
<td>Self-care (%)</td>
<td>No problems 31 (91.18)</td>
<td>24 (64.29)</td>
<td>21 (83.33)</td>
<td>13 (76.47)</td>
<td>11 (100.00)</td>
<td>103 (88.79)</td>
<td>80.33 ± 0.67</td>
<td>74.00 ± 0.25</td>
<td>74.62 ± 0.15</td>
<td>71.82 ± 0.35</td>
<td>87.04 ± 0.14</td>
<td>73.58 ± 0.62</td>
</tr>
<tr>
<td></td>
<td>Problems* 5 (18.82)</td>
<td>9 (25.71)</td>
<td>5 (16.67)</td>
<td>3 (16.67)</td>
<td>0 (0.00)</td>
<td>10 (8.82)</td>
<td>19.67 ± 0.67</td>
<td>16.00 ± 0.25</td>
<td>16.38 ± 0.15</td>
<td>18.18 ± 0.35</td>
<td>12.96 ± 0.14</td>
<td>16.42 ± 0.62</td>
</tr>
<tr>
<td>Usual activity (%)</td>
<td>No problems 15 (44.12)</td>
<td>5 (17.86)</td>
<td>3 (10.00)</td>
<td>3 (17.65)</td>
<td>1 (9.09)</td>
<td>12 (10.68)</td>
<td>74.41 ± 0.67</td>
<td>70.71 ± 0.25</td>
<td>70.59 ± 0.15</td>
<td>67.27 ± 0.35</td>
<td>79.38 ± 0.14</td>
<td>69.18 ± 0.62</td>
</tr>
<tr>
<td></td>
<td>Problems* 19 (55.88)</td>
<td>14 (51.85)</td>
<td>12 (40.00)</td>
<td>14 (82.35)</td>
<td>9 (90.91)</td>
<td>48 (41.38)</td>
<td>25.59 ± 0.75</td>
<td>19.29 ± 0.25</td>
<td>19.41 ± 0.15</td>
<td>12.73 ± 0.35</td>
<td>20.62 ± 0.14</td>
<td>18.82 ± 0.62</td>
</tr>
<tr>
<td>Pain/discomfort (%)</td>
<td>No problems 11 (32.35)</td>
<td>13 (46.43)</td>
<td>14 (53.85)</td>
<td>8 (46.15)</td>
<td>11 (100.00)</td>
<td>57 (49.14)</td>
<td>66.15 ± 0.75</td>
<td>71.43 ± 0.25</td>
<td>71.59 ± 0.15</td>
<td>68.18 ± 0.35</td>
<td>78.57 ± 0.14</td>
<td>68.57 ± 0.62</td>
</tr>
<tr>
<td></td>
<td>Problems* 19 (55.88)</td>
<td>15 (53.57)</td>
<td>14 (53.85)</td>
<td>7 (41.18)</td>
<td>1 (9.09)</td>
<td>56 (48.28)</td>
<td>33.85 ± 0.75</td>
<td>28.57 ± 0.25</td>
<td>28.41 ± 0.15</td>
<td>21.82 ± 0.35</td>
<td>21.43 ± 0.14</td>
<td>21.43 ± 0.62</td>
</tr>
<tr>
<td>Anxiety/depression (%)</td>
<td>No problems 15 (44.12)</td>
<td>13 (46.43)</td>
<td>12 (40.00)</td>
<td>10 (58.82)</td>
<td>10 (90.91)</td>
<td>60 (51.72)</td>
<td>57.14 ± 0.67</td>
<td>62.86 ± 0.25</td>
<td>62.59 ± 0.15</td>
<td>54.55 ± 0.35</td>
<td>69.38 ± 0.14</td>
<td>69.38 ± 0.62</td>
</tr>
<tr>
<td></td>
<td>Problems* 19 (55.88)</td>
<td>15 (53.57)</td>
<td>14 (53.85)</td>
<td>7 (41.18)</td>
<td>1 (9.09)</td>
<td>56 (48.28)</td>
<td>42.86 ± 0.67</td>
<td>37.14 ± 0.25</td>
<td>37.41 ± 0.15</td>
<td>35.45 ± 0.35</td>
<td>30.62 ± 0.14</td>
<td>30.62 ± 0.62</td>
</tr>
</tbody>
</table>

The EQ-5D index, mean ± SD 75.47 ± 0.75, 74.82 ± 0.25, 76.03 ± 0.15, 72.05 ± 0.35, 88.54 ± 0.14, and 77.38 ± 0.62.

EQ-5D VAS, mean ± SD 74.01 ± 0.67, 74.00 ± 0.25, 74.62 ± 0.15, 71.82 ± 0.35, 79.38 ± 0.14, and 73.58 ± 0.62.

Among the limitations of this study was that the cancer substages could not be presented because the medical records or hospital database did not provide sufficient information. Cancer stage information is valuable in cancer treatment because guidelines generally provide treatment recommendations on the basis of cancer stage. The lack of information about the substage of each cancer might be a reason why no cases of pain/discomfort got reported by patients with uterine cancer. It may indeed be the case that patients with cancer were in the early stage of cancer. A possible explanation for the unavailability of data on cancer stage is that the documentation process in the hospitals concerned might not be standardized; there may even be a lack of standard operating procedures altogether in this area. An Indonesian-specific EQ-5D value set is practically acceptable [66].
information for respondent versus nonrespondent patients could increase the generalizability of the results. Therefore, further study should also collect the data from nonrespondent patients.

The descriptive cross-sectional approach used in this study limits the amount of information provided. Further research adopting a comparative cohort study could be an interesting option for providing the complete picture, including the ratio of HPV-related cancers’ utility indexes compared with a healthy population in Indonesia. Nevertheless, this study provides a significant addition to the literature on HPV-related cancers’ utility values in Indonesia by implementing a valid and reliable questionnaire and coming up with findings mostly consistent with various other studies in the same field in other regions of the world.

Further research into the HRQOL of patients with precancer, substages of cancer, or even HPV-related genital warts is worthwhile in completing the information on the full scale of consequences of HPV infections in Indonesia. In terms of the decision-making process, a cost-effectiveness analysis on HPV-related cancer prevention strategies using our findings will provide useful information for decision makers in Indonesia.

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REFERENCES


