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ORIGINAL ARTICLE

TRANSLATION, CULTURAL ADAPTATION, AND VALIDATION OF THE INDONESIAN VERSION OF THE QUALITY OF ONCOLOGY NURSING CARE SCALE (QONCS)

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ABSTRACT

A validated instrument is crucial for assessing oncology nursing care in Indonesia. This study focused on translating, adapting, and validating the QONCS among Indonesian cancer patients and families. Initial feedback from nursing academicians and pilot participants guided the adaptation process. Validation involved distributing the instrument via Google Forms to 8 cancer referral hospitals, gathering responses from 148 individuals. Confirmatory factor analysis (CFA) assessed validity, while Cronbach's alpha measured internal consistency. Synonyms and examples were added to enhance item clarity. Eight items were removed due to poor construct validity, resulting in improved statistics (r statistic: 0.653-0.818; average variance extracted: 0.742). The revised instrument demonstrated high reliability (Cronbach's alpha: 0.967). This study confirms the Indonesian QONCS version as a valid and reliable tool for evaluating oncology nursing care. It is recommended for oncology nurses to utilize the QONCS to enhance the quality of care provided.

Keywords: Oncology Nursing, *QONCS, Quality Assessment, Translation and Adaptation*

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INTRODUCTION

Currently, cancer is one of the most common and second-leading causes of death in developed and developing countries. There is a trend of elevating new cancer cases and cancer deaths in the world. There was an increase in new cancer cases from 18.0 million in 2018 to 19.3 million in 2020. In addition, cancer deaths escalated from 9.6 million deaths in 2018 to 10.0 million cancer deaths in the worldwide (Bray et al., 2018; Sung et al., 2021). More than half of cancer incidence (56.8%) and cancer deaths (64.9%) occur in developing countries, with rates predicted to be higher in the future. In Indonesia, there is no accurate data on cancer incidence and mortality. The GLOBOCAN predicts by combining the average incidence of neighboring countries (Malaysia, Brunei Darussalam), cancer registration at the Dharmais Cancer Center, and Southeast Asian and national mortality models. In 2018, GLOBOCAN estimated that 291 out of 100,000 Indonesian people suffered from cancer (Gondhowiardjo et al., 2021). The high incidence of cancer in Indonesia requires attention to the provision of good and quality health and nursing services.

Quality of service plays a vital role in the service industry, including health services to patients with cancer and their families. Quality care meets all the patients' needs, meaning low-quality nursing care is associated with neglect of the

nursing care necessary to accommodate the patient's needs. Encountering the health needs of cancer patients is the nurses' role and responsibility of nurses, including ensuring and stabilizing psychosocial conditions and monitoring the side effects of chemotherapy drugs and other medical procedures. Additionally, cancer patients demand more personalized care and better communication with healthcare providers. The quality of oncology nursing plays a crucial role in the survival and prognosis of patients with cancer (Deribe et al., 2021).

The chemotherapy process includes doctors' and nurses' preparations, patient preparation, medication preparation, implementation or management, and monitoring and evaluation (Neuss et al., 2016). The American Society of Clinical Oncology (ASCO) establishes four standards for chemotherapy services, including 1) creating a safe environment, determining staff and general policies, 2) planning a treatment and patient consent, 3) preparing and managing chemotherapy treatment, and 4) monitoring after chemotherapy, including toxicity and complications and compliance chemotherapy treatment (Neuss et al., 2016). Nursing service standards in chemotherapy encompass educational qualifications and certificates or training related to chemotherapy service standards. Chemotherapy supervision is carried out at least by a nurse with chemotherapy training experience. Nurse competencies consist of regularly checking the patient's condition and vital status, communicating well, providing clear information about chemotherapy procedures, and documenting the patient's identity and processes after chemotherapy (Neuss et al., 2016).

Charalambous & Adamakidou (2014) reported ten instruments assessing the quality of nursing care in hospital settings, and only one questionnaire was developed specifically to measure nursing care in oncology settings, The Oncology Patients' Perception of the Quality of Nursing Care Scale (OPPQNCS). This questionnaire has several theoretical and conceptual limitations that hinder its ability to evaluate nursing care. Further, Charalambous developed a new instrument, the Quality of Oncology Nursing Care Scale (QONCS), to settle the limitations of previous questionnaires. The QONCS was developed using holistic nursing care theories and concepts. As such, it is expected to be able to identify areas of nursing care that require attention or intervention. Furthermore, this QONCS has been translated and validated into various languages, including Arabic (Sharour et al., 2021) and Chinese (Li et al., 2019). The Arabic and Chinese versions of Cronbach's alpha are 0.83 – 0.89 and 0.946, respectively.

To assess various dimensions of the quality of nursing care in oncology, it is necessary to provide a comprehensive, valid, and reliable quality assessment tool in the Indonesian version. However, the Quality of Oncology Nursing Care Scale (QONCS) has not been translated and validated in Indonesian. Research questionnaires are frequently unavailable in specific languages, including Bahasa Indonesia. Also, the questionnaires are not always translated appropriately according to the other cultural and linguistic settings. Thus, the research results using these instruments cannot reflect what is intended to be measured. This study aims to translate the QONCS into the Indonesian version and test the validity and reliability of the translated QONCS among cancer patients undergoing treatment in Indonesia.

METHOD

Study design

This quantitative research type aimed to translate and validate the Indonesian version of QONCS. Data was collected from August to November 2023 and divided into three processes: translation, cultural adaptation, and validation.

Population and samples

The population in this study were cancer patients or family members who cared for cancer patients in Indonesia. Two groups of participants were recruited for this study. The first Group consisted of 30 participants for the adaptation process of the Indonesian version of the QONCS. Another Group was recruited by sending a Google Form link to 8 cancer referral hospitals in Indonesia to validate the Indonesian version of the QONCS. The sample size in this study was estimated based on the 34 QONCS items, and at least five or more subjects were recommended for one item when conducting the validation process (n = 5 x 34 items, n = 170) (Gunawan et al., 2021). A study by Gunawan et al. (2021) and Anthoine (2014) found that the sample size for construct validity ranges from 50 to >1000. Participants were collected by purposive sampling and selected based on inclusion criteria. The inclusion criteria were cancer patients undergoing treatment at a referral hospital in Indonesia or their families aged 17 or older. Cancer patients or family members of cancer patients with cognitive impairment, central nervous system metastases, and psychiatric disorders were excluded from the study.

Participants involved in the validation process were recruited from seven of eight cancer referral hospitals in Indonesia: University of North Sumatra Teaching Hospital, RSUP Dr. M. Djamil Padang, Arifin Achmad Regional General Hospital, RSUP Prof. Dr. Sardjito Yogyakarta, RSUP Dr. Kariadi Semarang, Tlogorejo General Hospital, M. Natsir Solok Regional General hospital, and Kayu Aro Regional General Hospital.

Instrument

This study applied sociodemographic characteristics instruments and QONCS. The QONCS was developed by Charalambous et al. through three phases. In the first phase, a literature review will identify the area of concern and points of interest. The second phase included a pilot study of the QONCS instrument and a validation phase through a multicenter study in 3 hospitals, four departments, and 418 cancer patients treated in an inpatient ward. The QONCS is considered capable of measuring quality nursing care in the oncology setting for patients with various cancer diagnoses and at different phases of the cancer trajectory with adequate reliability (Cronbach's alpha 0.95) and validity (Charalambous et al., 2017; Charalambous & Adamakidou, 2014). This instrument has been translated into various languages, including Arabic, Mandarin, and Indian.

This instrument consists of 5 subscales that assess dimensions of the quality of nursing care based on the patient's perceptions and expectations of the consideration received during hospitalization, including 1) Being supported and confirmed, 2) Spiritual caring, 3) Sense of belonging, 4) Being valued, and 5) Being respected. All 34 question items were assessed on a 5-point Likert scale (1 = completely disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = completely agree).

Translation, cultural adaptation, and validation process

1. QONCS translation process

The translation was validated following cross-cultural adaptation procedures based on (Beaton et al. (2000). After obtaining permission from Charalambous & Adamakidou (2014), the original QONCS author, backward-forward translation was carried out to translate QONCS into the Indonesian version. Two translators handled the translation independently. Translator 1 (P1) was familiar with the quality of nursing care examined in the questionnaire to provide a measurement perspective. Translator 2 (P2) is native and less driven by academic purposes, which may reflect the language used by the target population. Next, two peer reviewers from academics in the nursing field discussed the QONCS translation and reached a consensus. Two native English speakers with no medical background and unaware of the original version performed the back translation fluently. A native English speaker with a nursing background reviewed the translated version to ensure it reflected the same item content as the original version. The principal author collated feedback from peer review and reported the information attained to the team to accomplish a consensus.

2. Adaptation process

The adaptation process included a pilot study with 30 outpatient cancer patients at RSUP Dr. M. Djamil Padang to test the feasibility of the QONCS Indonesian version. Respondents are tested for their understanding and acceptance of the items to detect whether they are confusing or misleading after the translation process and consensus. The translated version was feasible if the questionnaire was considered easy to understand.

3. Validation process

At this stage, the construct validity and reliability of the Indonesian version of the QONCS were examined. Participants were excluded from the psychometric analysis if more than 13% of the items were missing from the Indonesian version of the QONCS.

Data collection

Data was collected from August to November 2023 and divided into three processes: translation, cultural adaptation, and validation. After the forward and backward translation, the first Indonesian version of QONCS was obtained and evaluated. In the cultural adaptation process, feedback from 30 cancer patients and family members who cared for cancer patients in the hospital were collected and reviewed after ethical clearance to develop the final version of QONCS in Indonesian.

In the validation process, online links to the final version of QONCS in Indonesia were distributed via social media platforms (WhatsApp, Facebook, and Instagram) from 1 August 2023 to 4 November 2023. If respondents joined through various media, duplicate respondents were removed based on their initials and the hospital where they were treated.

Data analysis

In the adaptation process, after team discussion, pilot data was compiled and analyzed to obtain the most appropriate word choices through consensus. If differences of opinion were encountered during this process, the problem was resolved through agreement. The characteristics of participants in the adaptation phase were analyzed by univariate analysis.

Validity and reliability tests were used to analyze the psychometric properties of the Indonesian version of QONCS. Confirmatory factor analysis with principal component analysis was run to examine construct validity. To describe construct validity, validity was measured using outer loading, AVE, and latent values. Reasonable construct validity standards were statistically above the r table, latent values, and AVE >0.5 (Fornell & Larcker, 1981). Cronbach's alpha was used to examine internal consistency, and a Cronbach's alpha value above 0.7 indicated a reliable instrument (Dijkstra & Henseler, 2015; Nunnally, 1994). All statistical analyses used Smart PLS version 3.0 Pro.

Ethical consideration

This research was approved by the Research Ethics Committee of RSUP Dr. M. Djamil Padang, with ethical letter number LB.02.02/5.7/420/2023 on 31 July 2023. The study obtained authorization and consent from the President Director of each hospital before commencement. Before data collection, the researchers explained the study's objectives, information confidentiality, and the participant's right to withdraw at any point. The study exclusively involved cancer patients and their families, with no participation of children under 16. All participants received an informed consent form granting permission to collect demographic data, complete the questionnaire, and use excerpts from publications and reports. The participants' identities remained anonymous throughout the analysis and presentation of the results.

RESULTS

Adaptation process

Table 1. Respondents' characteristics (n=30)

Characteristics	Mean (SD)	f	%
Age	46.07 (13.17) Min 18 Max 65		
Gender			
Male		10	33.3
Female		20	66.7
Educational level			
Master degree		1	3.3
Bachelor degree		4	13.3
Diploma degree		3	10.0
High-school		15	50.0
Junior-school		7	23.3
Work			
Civil servant		1	3.3
Teacher		1	3.3

Characteristics	Mean (SD)	f	%
Trader, self-employed		5	16.7
Farmer		4	13.3
Retired		1	3.3
Housewife/not working		16	53.3
Patient diagnosis			
Mammary cancer		7	23.3
Colon cancer		9	30.0
Rectal cancer		4	13.3
Prostate cancer		4	13.3
Lung cancer		2	6.7
Pharyngeal cancer		1	3.3
Lymphoma		2	6.7
Leukemia		1	3.3
Treatment room			
Surgery		20	66.7
Integrated diagnostic installation		10	33.3
Relationship with patients			
The patient		8	26.7
The patient's parent		2	6.7
Patient's child		6	20.0
Patient's husband or wife		8	26.7
Sibling		3	10.0
Other family members		3	10.0
Start treatment			
2016		1	3.3
2018		2	6.7
2019		3	10.0
2020		2	6.7
2021		2	6.7
2023		20	66.7

At this stage, an adaptation of the questionnaire was conducted for 30 respondents who met the inclusion criteria, and an respondents' characteristics were displayed in Table 1. Most respondents were female (66.7%), had a high school education (50.0%), and were either unemployed or engaged in household duties (53.3%).

Table 2. Revision of the Indonesian version of the QONCS questionnaire items based on the adaptation stage

Item	Original version	Forward and backward translation into Indonesian	Final version in Indonesian (along with notes on changes that have been made)
4	The nurse is emotionally supportive?	Perawat mendukung secara emosional?	Perawat mendukung dengan penuh perhatian? (The word emotionally is changed to attentively)
5	The nurse expresses a real interest in you?	Perawat mengungkapkan minat nyata kepada Anda?	Perawat menunjukkan perhatian kepada Anda? (The word expresses a real interest is changed to showing concern)
7	The nurse appears knowledgeable in relation to your condition?	Perawat tampak berpengetahuan tentang kondisi Anda?	Perawat mengetahui segala sesuatu tentang kondisi Anda? (The word knowledgeable is changed to know everything)
8	The nurse provides the information in a comprehensive way?	Perawat memberikan informasi secara komprehensif?	Perawat memberikan informasi secara lengkap dan seksama? (The word comprehensive way is changed to complete and thorough)
18	The nurse initiates the discussion around spiritual issues.	Perawat memulai diskusi seputar masalah spiritual.	Perawat memulai diskusi seputar masalah spiritual (rohani atau keyakinan agama). (Adding the word spiritual or religious beliefs to explain the word spiritual)
19	The nurse was interested in clarifying what your religious preferences are.	Perawat tertarik untuk mengklarifikasi apa preferensi agama Anda.	Perawat tertarik untuk menanyakan kembali apa yang menjadi pilihan keyakinan Anda. (The word clarifying is changed to ask again, and the word religious preference is changed to a choice of belief)
20	The nurse was available to discuss spiritual issues and encouraged this conversation.	Perawat bersedia untuk membahas masalah spiritual dan mendorong percakapan ini.	Perawat bersedia untuk membahas masalah spiritual (rohani atau keyakinan agama) dan mendorong percakapan ini. (Adding the word spiritual or religious beliefs to explain the word spiritual)
24	The nurse encouraged the presence of your family while receiving the care.	Perawat mendorong kehadiran keluarga Anda saat menerima perawatan.	Perawat mendukung kehadiran keluarga Anda saat menerima perawatan. (The word encourage is changed to support)

Following the participants' feedback during the adaptation process, several alterations were showed related to word selection structure (Table 2). A total of 8 items were modified by altering the word choices, incorporating synonyms, or providing illustrative examples to facilitate the accurate interpretation of the context or content by the participants. These modifications included the terms "emotionally" (item no. 4), "comprehensively" (item no. 8), "competently" (item no. 13), "clarify" (item no. 23), and "encourage" (item no. 24). Additionally, two respondents indicated that items 17-22 were less relevant due to the absence of spiritual discussions with nurses. For instance, several participants were unfamiliar with the term comprehensive, and thus, it was revised to complete and thorough ("secara lengkap dan seksama").

Validation process

Table 3. Partisipants' characteristics (n=148)

Characteristics	f	%
Age		
Adult (17-45 years)	101	68.2
Pre-elderly (46-59 years)	38	25.7
Elderly (> 60 years)	9	6.1
Gender		
Male	34	23.0
Female	114	77.0
Level of education		
Elementary (Junior High School)	60	40.5
Intermediate (High School)	52	35.1
Higher (Diploma/S1/S2/S3)	36	24.3
Work		
Civil servant	14	9.5
Self-employed	13	8.8
Private/honoray employees	17	11.5
Teacher, nurse	17	11.5
Workers, traders, farmers	11	7.4
Housewife/not working	66	44.6
Student	7	4.7
Retired	3	2.0
Medical diagnosis		
Carcinoma	45	30.4
Sarcoma	14	9.5
Hodgkin's lymphoma and leukemia	80	54.1
Myeloma	1	0.7
Tumor	8	5.4
Hospital		
Dr. M. Djamil Padang Hospital	88	59.5
Arifin Achmad Pekanbaru Hospital	13	8.8
Kariadi Semarang Hospital	34	23.0
Prof. Dr. Sardjito Yogyakarta Hospital	8	5.4
Tlogorejo Hospital	2	1.4
M. Natsir Solok Hospital	2	1.4
Kayu Aro Hospital	1	0.7
Relationship with patients		
Parent	99	66.9
Child	12	8.1
Siblings	3	2.0
Husbanf or wife	11	7.4
Other families	23	15.5

Psychometric test of the Indonesian version of the QONCS questionnaire on 148 respondents from various cancer referral hospitals in Indonesia also reported in this study (Table 3). Most respondents were in the adult age (68.2%) and female (77.0%), Most participants completed junior and senior high school education (75.6%) and worked as housewives or unemployed (44.6%) Additionally, a substantial number of patients were diagnosed with Hodgkin's lymphoma and leukemia (54.1%), treated at RSUP Dr. M. Djamil Padang (59.5%), and had a familial relationship with the patient's parents (66.9%).

To construct the model in this study, confirmatory factor analysis (CFA) was employed, resulting in the identification of eight items from the Indonesian version of the QONCS questionnaire (items 18, 19, 20, 21, 22, 23, 24, and 27) that exhibited a statistical r value below 0.4, lower than the r table value (**Figure 1a**). Subsequently, these eight question items were removed. After reanalysis through CFA, the statistical r value increased above the table r-value (**Figure 1b**).

Table 4. Latent variables correlations

	Age	Gender	Level of education	Work	Medical diagnosis	Hospital	Relationship with patients	Quality of oncology nursing care
Age	**1.000**	-0.052	-0.089	0.045	-0.217	0.041	0.143	0.261
Gender	-0.052	**1.000**	0.152	0.289	-0.117	0.026	-0.064	-0.167
Level of education	-0.089	0.152	**1.000**	0.413	-0.162	-0.032	-0.176	-0.175
Work	0.045	0.289	0.413	**1.000**	-0.135	-0.010	-0.167	-0.176
Medical diagnosis	-0.217	-0.117	-0.162	-0.135	**1.000**	0.016	0.009	-0.142
Hospital	0.041	0.026	-0.032	-0.010	0.016	**1.000**	0.223	0.186
Relationship with patients	0.143	-0.064	-0.176	-0.167	0.009	0.223	**1.000**	0.212
Quality of oncology nursing care	0.261	-0.167	-0.175	-0.176	-0.142	0.186	0.212	**0.742**

The Average Variance Extracted (AVE) value for the oncology nursing care quality variable exceeded 0.5 and was more significant than the value in the model construct, specifically 0.742 (Table 4). The formula for determining the latent values for exogenous variables (age, gender, education level, occupation, medical diagnosis, hospital where one is treated, relationship with the patient) and endogenous variable (quality of oncology nursing care) was as follows:

Latent value of exogenous variable = $\sqrt{1^2} = 1$

Endogenous variable latent value = $\sqrt{0.550^2} = 0.742$

As indicated in Table 5, the reliability of the questionnaire items was reported to be satisfactory, with a value of 0.967 (above the reliability standard of 0.7). Therefore, based on

the outer loading, AVE, latent reliability, and Cronbach's alpha values, all question items in the Indonesian version of the QONCS questionnaire were considered valid and reliable in elucidating each variable.

Table 5. Reliability test

	Cronbach's alpha	Composite reliability
Age	1.000	1.000
Gender	1.000	1.000
Level of education	1.000	1.000
Work	1.000	1.000
Medical diagnosis	1.000	1.000
Hospital	1.000	1.000
Relationship with patients	1.000	1.000
Quality of oncology nursing care	0.967	0.969

DISCUSSION

The current investigation supports the Indonesian version of the Quality of Oncology Nursing Care Scale (QONCS) questionnaire as a trustworthy and dependable tool for assessing the quality of oncology nursing care in Indonesia. Validity and reliability are essential when investigating the quality of a scale such as the Oncology Nursing Care Quality Scale. Validity pertains to the extent to which a scale measures its intended construct, while reliability refers to the consistency and stability of the measurement.

During the initial phase, translation and peer review were conducted by two experts, resulting in the acquisition of an Indonesian version of the questionnaire. The translation and peer review are critical steps in ensuring the linguistic and cultural equivalence of the questionnaire (Squires et al., 2013). This aligns with best practices in survey development, especially in cross-cultural research, where nuances in language can significantly impact responses (Sha & Gabel, 2020). This version required pilot testing to assure linguistic adaptation.

The pilot study is a valuable step to identify potential issues and refine the instrument before full-scale implementation (DeVellis, 2017). The modifications based on participant feedback demonstrate a commitment to linguistic adaptation and respondent understanding. Ensuring validity within the context of oncology nursing care necessitates confirming that the scale accurately reflects the pertinent quality dimensions within this field. This may entail consulting an oncology nursing expert to validate the items and ensure the scale captures the subtleties of care provided.

The initial construct model showed that questions 18, 19, 20, 21, 22, 23, 24, and 27 have outer loading values lower than 0.6. These questions relate to issues surrounding the nurse's concern for the patient's spiritual needs and the presence of the family during care. Indonesian people believe in the Oneness of God and uphold religious beliefs as fundamental. Indonesia adheres to Pancasila as a moral-spiritual guideline in all national development policies in various fields (Dimyati et al., 2021). Apart from that, family ties in Indonesian society are relatively high. Based on this situation, we recommend retaining this question item so that it can be used to evaluate the importance of paying attention to achieving spiritual needs in oncology nursing care and the family presence in accompanying the patient.

Conversely, reliability is crucial in obtaining consistent measurements over time and across different situations. This can be evaluated through test-retest reliability, where the scale is administered to the same group on two occasions with a time interval in between, and the scores are compared to assess consistency.

Collaborating with oncology professionals, conducting meticulous statistical analyses, and continuously refining the scale based on feedbacks are able to enhance the validity and reliability of the Oncology Nursing Care Quality Scale. Regular updates and revisions may also be necessary to align the scale with evolving oncology nursing standards and practices. Consulting an oncology nursing expert is prudent to ensure the scale's validity within the context of oncology nursing care (Polit & Yang, 2016). Experts provide insights into the nuances and specificities of care in this field, contributing to the instrument's content validity.

Collaborating with oncology professionals is crucial in developing and refining the Oncology Nursing Care Quality Scale. These professionals deliver a wealth of clinical experience and a deep understanding of the intricate aspects of oncology nursing. Their suggestions can contribute to the scale's face validity, ensuring it appears to measure what it intends to measure.

This study has both strengths and limitations. The robustness of investigation lies in its nature as an adaptation and validation study of QONCS conducted in several prominent cancer referral Indonesian hospitals situated in Java and Sumatra Islands. This empirical research offered substantial evidence of the validity and reliability of the instrument across a diverse range of participants' backgrounds. In contrast, a drawback of this study was the onlineinstrument distribution to respondents through Google form might lead a potential for participant bias. As a result, we recommend that future research employs paper-based instruments to engage participants from varied social, economic, and educational background.

The sample size calculation used the rule of thumb (five respondents for one statement item) was unmet. This is due to the study's hardship in finding samples according to the specified inclusion criteria, even conducted in several Indonesian hospitals. This was in line with the previous study reported that two critical factors in sample size consideration were ease access and the general quantity of the target population. The numbers in studies that involve patients, especially for special conditions, such as cancer patients, are generally small. Therefore, hospitals may only have a limited number of eligible patients, and not all of them are willing to participate in the field of study (White, 2022).

CONCLUSION AND RECOMMENDATION

In conclusion, after undergoing rigorous psychometric analysis, the Indonesian version of the QONCS has been proven as a valid and reliable instrument for evaluating the standard of oncology nursing care, as perceived by patients and their families, within the Indonesian context. This research implies the importance of using valid and reliable instruments in assessing the quality of care for oncology patients, which may help nurses to enhance their health services.

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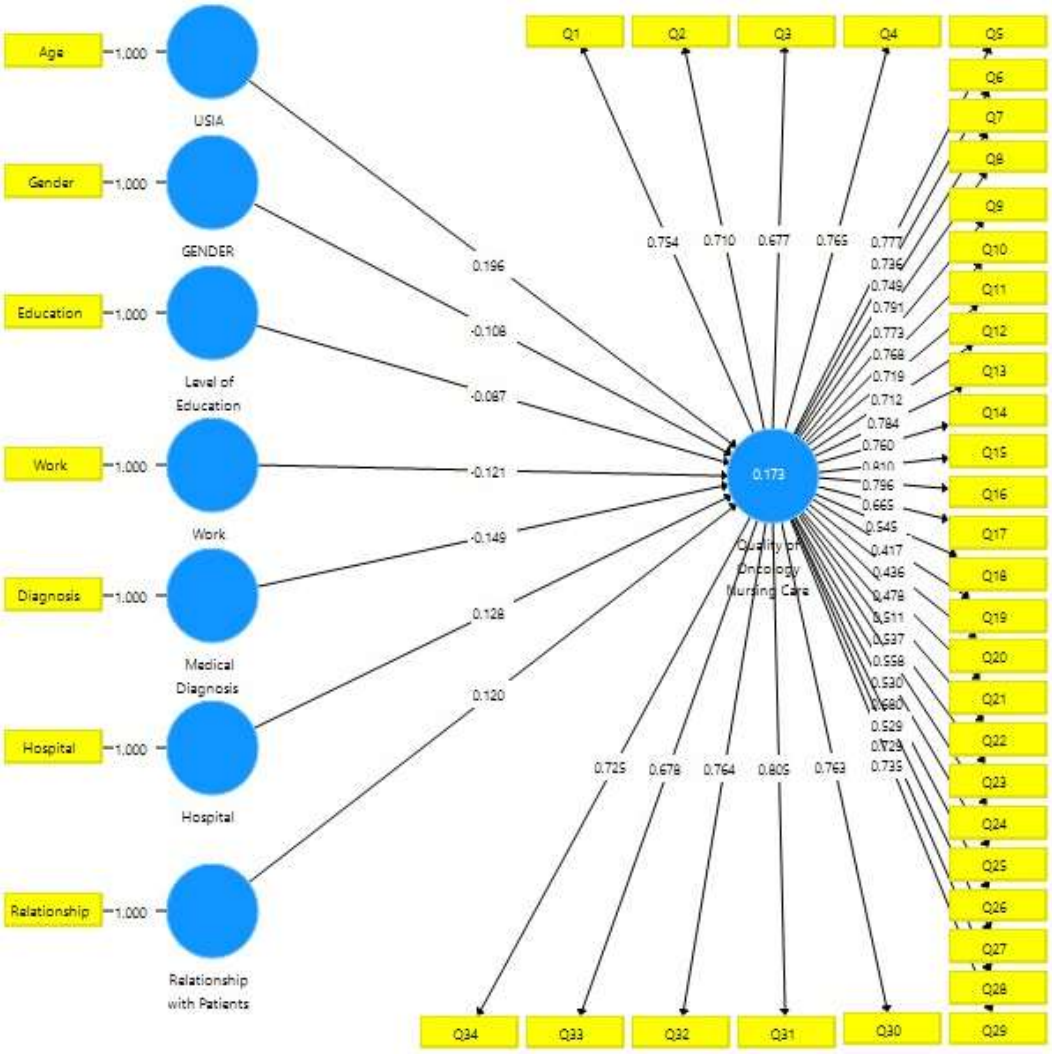

Figure 1a. Preliminary model construction

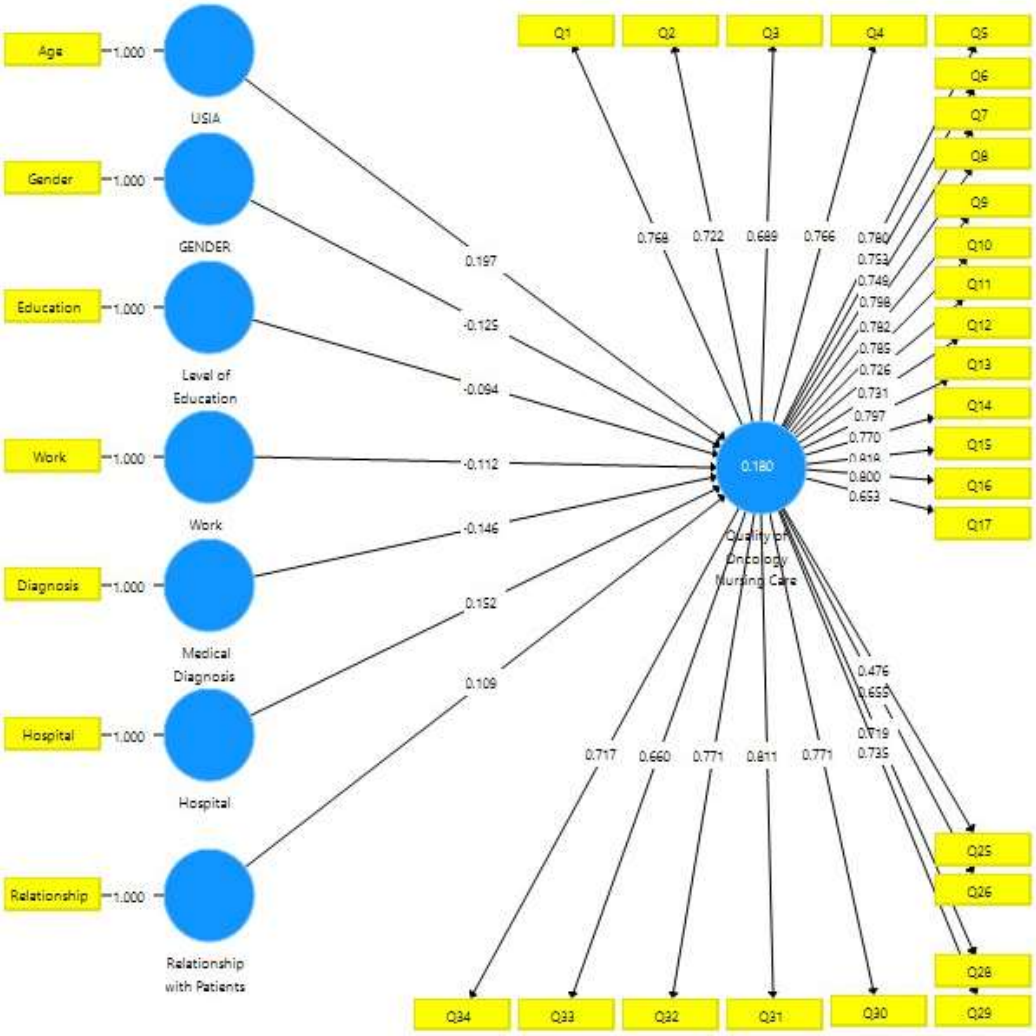

Figure 1b. Model construction after question items were removed