

Development of comfort instrument in breast cancer patients: mixed methods study

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ABSTRACT

The discomfort in breast cancer patients can lead to depression and the desire to die early. The nurses need to know the patient's discomfort as a basis for providing interventions. Previous studies reported that there is no valid and reliable breast cancer comfort assessment instrument applied in Indonesia. This study aimed to produce a valid and reliable comfort assessment instrument for breast cancer patients. This research used mixed-methods; the qualitative stage started with in-depth interviews with five participants completed with Colaizzi analysis and after that a comfort instrument was developed. The instrument development results were tested for the reliability and validity by assessing the content validity index (CVI), Product Moment validity, and Cronbach's alpha reliability on 100 respondents which were selected by purposive sampling. The qualitative study found five basic themes of comfort assessment: physiological comfort, psycho-spiritual, environmental, socio-cultural, and economic. The total of 30 questionnaire items were produced. Product moment test, results of 29 items r count: 0.361 and Cronbach's alpha test results of 0.915. There were 29 items of instruments for assessing the comfort of breast cancer patients that were valid and reliable that can be applied in Indonesia.

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1. INTRODUCTION

Breast cancer ranks first and becomes the first contributor to death from cancer in women in Indonesia. According to Global Burden of Cancer data for 2020, the number of new cases of breast cancer in Indonesia reached 68,858 cases (16.6%) of the total 396,914 cases of cancer and the number of deaths reached more than 22 thousand cases [1], [2]. Breast cancer patients in Indonesia generally come to the hospital in an advanced stage with complaints of severe discomfort [3]. Physical and psychological stressors are experienced because of the verdict of the disease, pain and the treatment process, fear and worry, hope of recovery and success of the treatment program [4], [5]. In general, the medical treatment measures to save the breast cancer patients include a mastectomy and a series of chemotherapy. The actions after a mastectomy cause pain discomfort and psychologically cause self-image problems, feeling not like a woman anymore. Chemotherapy actions cause side effects of nausea, vomiting, anorexia, weight loss, insomnia, fatigue, hair loss, early menopause, sexual intercourse difficulties, fear of further treatment programs, prolonged discomfort resulting in depression, and the desire to die sooner [6], [7].

Nurse as part of the health team at the hospital is expected to provide nursing care that pays attention to the aspects of comfort [8], [9]. The measurement of the comfort of breast cancer patients is the first initial identification that must be carried out by the nurses to determine further actions in an effort to increase the comfort and quality of life. The care focusing on comfort can improve the body's immune system, namely tumour necrosis factor alpha (TNF α) and Interleukin-2 (IL-2) and reduce blood cortisol levels, so that the sufferers are more relaxed and it makes the physical condition of the breast cancer sufferers better, increases the immunity which has positive benefits in dealing with the malignancy of the disease [7]. The aspects of comfort that receive less attention in breast cancer patients have an impact on the increased severe physical complaints, feelings of uselessness, depression, and the decreased quality of life which can increase mortality [10]. Based on the importance of comfort for the breast cancer patients, an instrument is needed that can be used to measure the comfort level of breast cancer patients as a basis for providing further treatment, especially in Indonesia.

The results of the literature review found the results of studies that developed comfort instruments and instruments related to breast cancer care. The study in Cuba produced 33 instrument items to measure the quality of the life of breast cancer patients. The measurement includes the physical domain and psychological relationships as well as social and family relationships. The instrument was developed by means of a literature study which was proven to be valid and reliable through construct validity, discriminant validity, test-retest reliability, predictive validity, and interpretability [11]. Research at Taheren found 49 items of the breast cancer prevention behavior instruments which were identified qualitatively. The analysis results of the Cronbach's alpha coefficient >0.68 and intraclass correlation coefficient >0.71 so that the instrument is declared valid and reliable [12]. In Thailand, it was found 59 items of care awareness instrument for the cervical cancer, developed through the stages of literature study and semi-structured interviews which proved their validity using a face scale and content analysis [13]. In Australia, they succeeded in developing a 12-item comfort behavior questionnaire: The Patient Evaluation of Emotional Comfort Experienced (PEECE) which is valid and reliable with product moment analysis and Cronbach's alpha [14]. Literature review studies also mention that there is a Comfort Behavior Scale (CBS) instrument developed by Kolcaba used to measure comfort in children treated in intensive care and has been used in Sweden, China, Portugal, Norway and Italy [15]. The Hospice Comfort Questionnaire (HCQ) instrument by Kolcaba has been proven to be applicable in Korea. This instrument measures general comfort for the hospitalized patients, developed based on observations and literature studies [16]. Based on the results of these studies, there is no instrument to measure the comfort level of the breast cancer sufferers and evidence of its application in Indonesia. The aim of the research is to produce a valid and reliable instrument for measuring the comfort level of breast cancer patients that can be used according to culture in Indonesia. The instrument was developed through a mixed-method, preceded by in-depth interviews, instrument development, content and construct validity as well as validity and reliability through instrument trials on breast cancer patients.

2. RESEARCH METHOD

The study design of this research uses mixed methods with a qualitative study with a phenomenological approach, through in-depth interviews to explore the comfort experience of breast cancer sufferers, and resulting in a theme analysis as the basis for the preparation of the instrument. The next step is the quantitative analysis of the validity and reliability. The research sample was breast cancer patients who had received treatment and were visiting the surgical and surgical oncology polyclinic at PKU Muhammadiyah Gamping Hospital, Yogyakarta, Indonesia. The participants involved in the qualitative study were five participants and they were involved in the quantitative study. The quantitative study to test the validity and reliability of the results of the development instrument involved 100 participants, which were selected by purposive sampling. Inclusion criteria: willing to be research subjects, vital signs within the normal normal range, stable, conscious and able to communicate well. Exclusion criteria: Subjects did not cooperatively answer questions or did not complete the questionnaire completely. Ethical Considerations of the research carried out has been approved by the ethics board of PKU Muhammadiyah Gamping Hospital Yogyakarta Indonesia no.096/KEP-PKU/III/2022, with the research permit no. 0683/PL.24.2/III/2022.

The qualitative research was conducted through in-depth interviews assisted with the interview guidelines. The results of the interviews were made into transcripts, data triangulation, and themes analysis. Based on the analysis of themes, an instrument for assessing the comfort of breast cancer patients was developed. The content validity index (CVI) of the draft instrument was evaluated by experts. Each expert rated the relevance of each item using the scale: 1= not relevant, 2= somewhat relevant, 3= quite relevant, and 4= very relevant. Then, labels 3 and 4 are interpreted as relevant =1, and labels 1 and 2 are interpreted as irrelevant. The average score >0.90 means valid content. A total of 30 items of the questionnaire were scored on a four-point Likert scale, ranging from 1 to 4 (1 always, 2+often, 3= sometimes, and 4= never). The total

score is classified into: less comfortable as =29-57, quite comfortable as =58-87, and comfortable as =88-116. Qualitative data analysis applied Colaizzi's method. The production of the comfort instrument was conducted by researching the validity content of the CVI index with valid criteria for I-CVI results >0.90. The results of the fieldtesting instrument were tested for its validity and reliability. For the validity test, the Pearson Product was used. The instrument is declared valid if the r-count is higher than the r-table at a significance level of 5%. For the reliability test, the instrument is declared reliable if Cronbach's alpha value is higher than r table.

3. RESULTS AND DISCUSSION

3.1. Results

Qualitative study interviews were conducted with 5 participants of breast cancer patients at PKU Muhammadiyah Gamping General Hospital, Yogyakarta. The results of the recorded interviews, transcripts were made, read repeatedly to determine coding, categories and themes. The results of the qualitative analysis produce five themes, namely: physiological comfort; psychospiritual comfort; environmental comfort; sociocultural comfort; economic convenience as shown in Table 1. Based on the coding, the categories and themes obtained as well as the literature study, a breast cancer patient comfort level questionnaire was compiled. Resulted in 30 questionnaire items distributed in five dimensions shown in Table 2.

Table 1. Five themes of the identification comfort assessment of breast cancer patients

Themes	Categories	Transcript
Physiological comfort	The comfort of physical activity	"I feel sluggish, lack of energy, get tired easily, so I just lie down a lot" (P1) "it feels like suffering, unable to carry out normal activities" (P2) "I feel very suffering with this pain, nothing feels bad" (P3) "I feel weak easily, I feel dizzy easily, it hurts...." (P4)(P5)
	The convenience of Nutritional Needs	"I don't like to eat it" (P-2) "...anything doesn't taste good; eating isn't good either" (P3) "...no appetite" (P4)
	Sleep rest comfort	"I don't sleep well, I often wake up, especially when there is pain..." (P1) "When it hurts, it's hard to sleep" (P-2) "When it hurts, I can't sleep..." (P3)
Psychospiritual comfort	Psychological comfort	"Sad and tired of undergoing a series of treatments" (P2) "must be sad and worried " (P3) "I become irritable, irritated..." (P-1) " "I like to lose hope that I can't heal and the condition is getting worse" (P2)
	Spiritual Comfort	"I have difficulty doing prostration, the pain appears" (P5) "I surrender to this test, all the power of Allah (P5)
Environmental comfort	Hospital environment comfort	"I can't stand the smell of medicine in the hospital; I just want to go home immediately" (P2) "The hospital is noisy, noisy...the smell of the hospital...it's just better at home" (P3) "Comfortable at home than a hospital" (P4)
Sociocultural comfort	Husband and family support	"I find it difficult to talk about my illness with my husband, I don't want my husband and children to be sadder"(P1) (P2) "My husband helps me when I need help" (P4) (P5)
	Social support	"I'm happy that my friends support me, someone comes, calls, and supports me through WhatsApp" (P1) (P5) "I often ask friends who are in the same situation as me to motivate myself" (P3) (P4) (P5)
	Support health workers	"The Officers are good, friendly, support me, polite, speak well" (P1) "Yes, the nurses are friendly and kind" (P2) (P4)
Economic convenience	Roles	"I can't do my homework and, in the community, as usual" (P1)(P2) "Become less active in the village and social activities" (P4)
	Living expenses and medical needs	"I don't work, health insurance is the main financing source, I have to be smart to save on transportation and daily costs" (P2) "I am no longer productive at work, I take a lot of rest, I expect a lot from insurance other than the needs that are supported by the insurance." (P3). "Those who think about family costs, but if insurance can fulfill them, it helps us" (P4)

Description: P1: participant 1; P2: participant 2; P3: participant 3; P4: participant 4; P5: participant 5

The results of the comfort level questionnaire question items in breast cancer patients were then tested for the validity of the reliability. Content validity test with expert judgment and reliability test was conducted on 100 breast cancer respondents undergoing treatment at PKU Muhammadiyah Gamping General Hospital, Yogyakarta, Indonesia. Most respondents aged 30-40 years (40%), 60% senior high school education and 53% had breast cancer less than one year shown in Table 3. The results of the expert judgment

validity test and Cronbach's alpha statistical analysis showed that 29 items with a score >0.90 and 1 item with a result <0.90 were omitted because they were not core questions. The results of the analysis of the validity and reliability of instrument data are shown in Table 4.

Table 2. Breast cancer comfort level questionnaire

No	Dimensions	Items	Amount
1	Physiological comfort	1. My body lacks strength 2. I have physical weakness 3. I suffer with the treatment measures that I underwent 4. I get dizzy easily 5. I get tired easily 6. I have lost my appetite 7. I often feel pain at the site of the breast 8. I often experience sleep disturbances	8
2	Psychospiritual comfort	9. I feel sad with this pain 10. I get angry easily 11. I'm afraid that I can't recover 12. I'm afraid the condition is getting worse 13. I experienced limitations in carrying out worship	5
3	Environmental comfort	14. I don't like the smell of drugs 15. I don't like being hospitalized 16. The environment in the hospital is noisy and crowded	3
4	Sociocultural comfort	17. I experienced communication problems with my husband 18. Husband does not care and helps care needs 19. I don't like that many contact me 20. I don't like visiting friends 21. I don't like to talk to fellow cancer survivors 22. Health workers are not friendly 23. I don't like communicating with health workers 24. Health workers did not respond and help my complaints 25. I have lost my role as a housewife since this illness 26. I have lost my social role in society since this illness	10
5	Economic convenience	27. I have lost my income with this illness 28. I'm thinking about my living and treatment accommodation needs 29. The health insurance program is of little use to me 30. My breast cancer treatment costs a lot of money	4
Total			30

Table 3. The characteristics of the respondents

Characteristics	Mean + Standard deviation (SD)	Frequency	Percentages
Age	42.96+12.09		
20-30 years old		10	10%
30-40 years old		40	40%
40-50 years		16	16%
50-60 years		24	24%
60-70 years old		100	10%
Total			100%
Education	2.93+1.01		
Elementary school		10	10%
Junior high school		13	13%
Senior highschool		60	60%
Bachelors		17	17%
Total		100	100%
The duration of illness			
<1 year		53	53%
1-2 years	1.66+0.80	27	27%
2-3 years		20	20%
Total		100	100%

Table 4. The results of the analysis of the validity and reliability of the instrument

No	Dimensions	Items	Product moment (r count)	Sig. (2-tailed)	Cronbach's alpha (r count)
1	Physiological comfort	1-8	>0.361	< 0.05	0.915
2	Psychospiritual comfort	9-13	>0.361	< 0.05	
3	Environmental comfort	14-16	>0.361	< 0.05	
4	Sociocultural comfort	17-26	>0.361	< 0.05	
5	Economic convenience	27-29	>0.361	< 0.05	
		30	<0.361	>0.05	

3.2. Discussion

In a qualitative study with independent interviews with five participants, the results found five domain themes including: physiological comfort, psychospiritual comfort, environmental comfort, sociocultural comfort, and economic comfort. The findings presented in Table 1 illustrate the five important components of Swanson's comfort theory resulting in the development of a breast cancer comfort instrument formula consisting of 30 items (Table 2). Based on the 30 questionnaire items produced, a content validity index (CVI) test was carried out by three experts in the field of palliative care and the results obtained were that the average I-CVI category was valid. Even though question no. 30 had the lowest CVI result, the average I-CVI was greater than 0.90, so all questionnaire items were declared good.

The results of this breast cancer comfort instrument were different from the previous comfort instrument. This instrument was developed according to the characteristics of the condition of breast cancer patients in Indonesia. Based on the results of the qualitative data, the information on the comfort experience of breast cancer patients during treatment was found, which had not been found in the previous comfort instruments. Based on the results of the in-depth interviews, it was found that the questionnaire items were categorized into themes according to Kolcaba's theory: physical comfort, psychospiritual, environmental, and sociocultural. Comfort instruments have previously been adapted in the United States, United Kingdom, Netherlands, Brazil, Spain, Portugal, Germany, Italy, Sweden, France, and Israel. Comfort instruments include pediatric, adult, and elderly patients. Comfort parameters are measured from physiological and emotional changes, however, not paying attention to the spiritual and sociocultural aspects [17], [18]. Another finding of this study is the economic comfort, in which in Kolcaba's theory it is the part of the socio-cultural dimension. However, this finding is developed as a separate dimension because financing for breast cancer in Indonesia is an important issue in determining the comfort of patients undergoing treatment. In Indonesia, economic problems require special attention because it is a low-middle country category [19].

The findings of the theme on physiological comfort include items such as reduced energy, experiencing physical weakness, suffering from nursing actions, dizziness, tiredness, loss of appetite, pain, and disturbed sleep or rest. This physical comfort item is found in the characteristics of breast cancer patients in Indonesia, which are not entirely the same as the physical comfort characteristics of patients in foreign countries. Physical comfort on the HCQ includes feeling more relaxed, having difficulty in breathing, and feeling nauseous. This may happen because the physical condition of Indonesian people is different from the physical condition of people in other countries. Research states that physical complaints due to illness vary in different countries. The most extreme complaints occurred in the sick community in Poland, followed by France, Hungary, Poland, and Sweden. With standard ratings varying from -1.85 to 2.48 [20].

In the theme of psycho-spiritual comfort, the result items include the feelings of sadness and worry, irritability, fear of not being able to heal, worrying about worsening conditions, and limitations in carrying out worship. The psychological instrument items resulted are unique for the characteristics of psychological complaints in palliative conditions in Indonesia. In terms of spirituality, the characteristics of the community are having spiritual beliefs and carrying out worship orderly. High resignation and belief that God will give the best for him makes his psychological and spiritual condition also improve. Physical obstacles that occur during illness become a problem in doing worship, so they need help to facilitate the patients in doing worship. The results of the study stated that the aspect of carrying out spiritual worship is an important thing for asking for help from God in healing. Limitations in carrying out worship are the problems that can affect patient comfort [21].

The results on the theme of environmental comfort include dislike the smell of drugs, dislike being hospitalized, and the hospital environment is noisy and crowded. This adds to the patient's psychological stressor. The hospital efforts create conditions that are no different from home settings, for example, layout, tranquility, cleanliness, adequate lighting, and good air circulation. Creating interaction with family is no different from being at home and the atmosphere in the hospital is not much different from the situation at home, so palliative care such as breast cancer in a hospital with a comfortable environment avoids the increase of psychological problems that will support the patient's recovery [22], [23].

In the sociocultural theme, the result items are the communication problems with husbands, husband care, visits by friends and relatives, friendliness, communication with health workers, and roles as housewives and as the members of the community. The items in this socio-cultural dimension are typical for Indonesian people who have diverse cultures. The difficulty to discuss the illness with the spouse or friend may be caused by the feeling of not wanting the partner to be worry and be sad. Meanwhile, talking to people who have the same fate will strengthen and provide comfort. Social roles cannot be carried out since suffering from illness can affect patient comfort, so support from the community is needed in undergoing treatment. The results of the study explain that the support from family, friends, fellow people who experience the same disease, health workers, and the community will support the patient's self-confidence and psychology [24]. The last theme is the domain of economic comfort with the items found include the decreased income, thinking about living and accommodation costs during illness, and health insurance

programs. The items found have similarities with Problems and Needs in Palliative Care (PNPC) instruments from abroad but have been used in Indonesia, so they have similarities with those experienced in Indonesia. Economic convenience and health insurance coverage are positively correlated to the patient comfort and improved patient health status outcomes [25].

Based on the findings of the themes covering the 5 domains, expert judgment was then carried out, by conducting a content validity index (CVI) involving 3 experts in the field of palliative care. CVI is the most commonly used quantitative method of assessing content validity [26]. The CVI test includes 4 aspects of assessment, namely: relevance, clarity, simplicity, and ambiguity. The experts rated each question with a range of values one – four. The dichotomy of ordinal scores one and two means irrelevant or a score of 0, while the dichotomy of scores three and four means that it is relevant to a score of 1. The results show an average I-CVI score of three experts of 0.94, indicating greater than 0.90 so that based on the results of the validity content as a whole the results are good and acceptable. However, there are CVI results from item no. 30, namely "Breast cancer treatment costs a lot of money", getting a result of 0.33. Based on expert advice, item no. 30 is to be eliminated because it has been represented by item no. 28, namely "I think about the cost of living and the need for treatment accommodation" and item no. 29, namely "The health insurance program is not useful for me". Based on these considerations, discussions were held with experts to wait for the results of the construct validity test by testing the respondents.

Construct validity is a type of quantitative validity based on empirical data in the field [27]. Construct validity test was conducted on 100 breast cancer patients, using 30 items of comfort assessment instrument. The distribution of respondent data including age, education and length of illness are all homogeneous, with a standard deviation value lower than the average value as shown in Table 3. High school education level is seen as a fairly good level of education in the perception of accepting ideas and technology, making it easier to make decisions [28], so that the results of filling out the questionnaire with the majority of respondents having high school/vocational high school education can provide representative results. The majority of respondents aged 30-40 years are of healthy productive age, where reproductive hormones are produced and function effectively and the risk of experiencing breast cancer is higher. Age maturity supports good mental development in dealing with problems and making decisions in the treatment of illness [29], this also supports the representative questionnaire data given by the respondents. The duration of suffering from breast cancer affects therapeutic efforts that have an impact on the body's functional performance, strength, endurance and muscle mass. Undergoing breast cancer treatment for one year is the optimal period in improving the quality of life which affects the level of comfort. The longer exposure to a condition, the more experienced a person is in feeling social support which has an impact on the range of comfort experienced during the illness [30].

Based on the results of the product moment validity test, 29 valid items were produced, but there was 1 item no. 30 which was not valid. This item was omitted from the breast cancer comfort instrument because the statement was represented in item 29 namely "underutilized health insurance programs". Furthermore, on the 29 valid statement items carried out by the Cronbach's alpha test, the results obtained were 0.915 which were declared reliable as presented in Table 4. Based on these results, there are 29 acceptable breast cancer comfort questionnaire items. This is supported by other studies that say the instrument is valid, then its reliability can be accepted [31]. The comfort level instrument for breast cancer patients, consisting of 29 items of this statement can be recommended to be used to measure the comfort level of breast cancer patients in Indonesia in particular and its application can be developed in other countries with further research according to the cultural characteristics of each country. Research limitations, the number of samples that fit the inclusion criteria was obtained in a relatively long time, because at the start of the study the hospital was working with a government health insurance agency. After cooperating with insurers, breast cancer patients undergoing treatment at the hospital are increasing.

4. CONCLUSION

The development of an instrument for assessing breast cancer patients' comfort was based on Kolcaba's Comfort Theory, conducted through a qualitative study of in-depth interviews with breast cancer patients. The results were carried out by CVI testing and field trials to test the validity of the reliability. Twenty-nine instrument items that are valid and reliable after the CVI test was created and the product moment validity and Cronbach's alpha reliability test were carried out on 100 respondents. These findings are relevant to Kolcaba's Comfort Theory, which resulted in the development of a general comfort assessment instrument. The findings of this study are more specific in assessing the comfort of breast cancer patients. This comfort instrument is vital for nurses to apply to assessing the comfort level of breast cancer patients so that appropriate nursing implementations can be given to contribute to improving the patient's quality of life.

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REFERENCES

- [1] M. J. Merino, "Breast," in *Gattuso's Differential Diagnosis in Surgical Pathology*, vol. 419, Elsevier, 2022, pp. 721–762.
- [2] Ministry of Health of the Republic of Indonesia, *Action plan for activities of the directorate of family health*. Jakarta, Indonesia: Ministry of Health of the Republic of Indonesia, 2020.
- [3] S. Schragger and C. Falls, "Breast cancer: addressing disparities, improving care," *WMJ*, vol. 117, no. 2, pp. 52–54, 2018.
- [4] N. Putu and W. Purnama, "Stress and fear in women living with cancer: An argumentation towards the adaptation theory," *International Journal of Public Health Science (IJPHS)*, vol. 9, no. 3, pp. 272–280, 2020, doi: 10.11591/ijphs.v9i3.20413.
- [5] H. Abdel-Razeq, A. Mansour, and D. Jaddan, "Breast cancer care in Jordan," *Journal of Global Oncology*, vol. 6, pp. 260–268, 2020, doi: 10.1200/JGO.19.00279.
- [6] N. R. Anisa, K. A. Erika, and R. Rachmawaty, "Nurse's spiritual care competencies to patient with end stage breast cancer," *International Journal of Public Health Science (IJPHS)*, vol. 7, no. 4, pp. 268–273, 2018, doi: 10.11591/ijphs.v7i4.14742.
- [7] J. R. Pasqualini and J. Russo, *Breast cancer: Prognosis, treatment, and prevention*, Second Edi. Hormones and Cancer Research Unit Institut de Puériculture et de Pérenatologie Paris, France, 2012.
- [8] E. Yuzbasioglu, H. Kurt, R. Turunc, and H. Bilir, "Comparison of digital and conventional impression techniques: Evaluation of patients' perception, treatment comfort, effectiveness and clinical outcomes," *BMC Oral Health*, vol. 14, no. 1, pp. 1–7, 2014, doi: 10.1186/1472-6831-14-10.
- [9] C. Moir, R. Roberts, K. Martz, J. Perry, and L. J. Tivis, "Communicating with patients and their families about palliative and end-of-life care: Comfort and educational needs of nurses," *International Journal of Palliative Nursing*, vol. 21, no. 3, pp. 109–112, 2015, doi: 10.12968/ijpn.2015.21.3.109.
- [10] S. Lorente, J. M. Losilla, and J. Vives, "Instruments to assess patient comfort during hospitalization: A psychometric review," *Journal of Advanced Nursing*, vol. 74, no. 5, pp. 1001–1015, 2018, doi: 10.1111/jan.13495.
- [11] J. Lugo, M. Nápoles, I. Pérez, N. Ordaz, M. Luzardo, and L. Fernández, "Development and evaluation of an instrument to measure health-related quality of life in Cuban breast cancer patients receiving radiotherapy," *MEDICC Review*, vol. 16, no. 3–4, pp. 35–41, 2014, doi: DOI: 10.37757/MR2014.V16.N3-4.8.
- [12] M. Khazae-Pool, F. Majlessi, A. Montazaeri, T. Pashaei, A. Gholami, and K. Ponnet, "Development and psychometric testing of a new instrument to measure factors influencing women's breast cancer prevention behaviors (ASSISTS)," *BMC Women's Health*, vol. 16, no. 1, pp. 1–13, 2016, doi: 10.1186/s12905-016-0318-2.
- [13] N. Rakkapao, S. Promthet, and M. A. M. Nitchoman, "Development of a Breast cancer awareness scale for thai women: moving towards a validated measure," *Asian Pacific Journal Cancer Preventif*, vol. 17, no. 2, pp. 851–856, 2016, doi: 10.7314/APJCP.2016.J7.2.851.
- [14] D. J. A M Williams, L. Lester, C. Bulsara, A. Petterson, K. bennett, E. Ellen, "Patient Evaluation of EMotional Comfort Experienced (PEECE): developing and testing a measurement instrument," *BMJ Open*, vol. 7, pp. 1–10, 2017, doi: 10.1136-012999.
- [15] D. N. Suprawoto, N. Nurhaeni, and F. T. Wahyunti, "Comfot Behavior scale instrument: validity and realibility test for critically ill pediatric patients in Indonesia," *Pediatric Reports*, vol. 12, no. s1, pp. 86–90, 2020, doi: 10.4081/pr.2020.8690.
- [16] Y. J. Rhee, "Hospice and palliative care services in South Korea Supported by the National Health Insurance (NHI) Program," *Health*, vol. 07, no. 06, pp. 689–695, 2015, doi: 10.4236/health.2015.76082.
- [17] M. E. Parker and M. C. Smith, *Nursing theories and nursing practice: Third edition*, F.A. Davis Company, vol. 53, no. 9, 2013.
- [18] S. M. de Oliveira, K. N. de F. M. Costa, K. F. O. Dos Santos, J. D. S. Oliveira, M. A. Pereira, and M. das G. M. Fernandes, "Comfort needs as perceived by hospitalized elders: an analysis under the light of Kolcaba's theory," *Revista Brasileira De Enfermagem*, vol. 73, no. Suppl 3, p. e20190501, 2020, doi: 10.1590/0034-7167-2019-0501.
- [19] K. Handayani, "Adherence with childhood cancer treatment: exploring factors contributing to treatment abandonment Krisna Handayani," in *VU Research Portal*, 2016, p. 1=182.
- [20] J. Mazur, H. J. Klanšček, L. Augustine, K. Porwit, E. Sigmund, and K. Šmigelskas, "Trends in multiple health complaints in Polish adolescents in light of data from 30 European countries and Canada (2002-2018)," *Journal of Mother and Child*, vol. 25, no. 1, pp. 25–34, 2021, doi: 10.34763/jmotherandchild.20212501.d-21-00011.
- [21] I. Koper, H. R. W. Pasman, B. P. M. Schweitzer, A. Kuin, and B. D. Onwuteaka-Philipsen, "Spiritual care at the end of life in the primary care setting: Experiences from spiritual caregivers-A mixed methods study," *BMC Palliative Care*, vol. 18, no. 1, pp. 1–10, 2019, doi: 10.1186/s12904-019-0484-8.
- [22] E. R. C. M. Huisman, E. Morales, J. van Hoof, and H. S. M. Kort, "Healing environment: A review of the impact of physical environmental factors on users," *Building and Environment*, vol. 58, pp. 70–80, 2012, doi: 10.1016/j.buildenv.2012.06.016.
- [23] Y. F. Lai *et al.*, "Asian attitudes and perceptions toward hospital-at-home: a cross-sectional study," *Frontiers in Public Health*, vol. 9, no. July, pp. 1–8, 2021, doi: 10.3389/fpubh.2021.704465.
- [24] T. T. Bartholomew *et al.*, "Therapists' cultural comfort and clients' distress: An initial exploration," *Psychotherapy*, vol. 58, no. 2, p. 2021, 2020, doi: 10.1037/pst0000331.
- [25] A. B. Comfort, L. A. Peterson, and L. E. Hatt, "Effect of health insurance on the use and provision of maternal health services and maternal and neonatal health outcomes: A systematic review," *Journal of Health, Population and Nutrition*, vol. 31, no. 4 SUPPL.2, 2013.
- [26] B. St. Marie, A. Jimmerson, Y. Perkhounkova, and K. Herr, "Developing and establishing content validity of vignettes for health care education and research," *Western Journal of Nursing Research*, vol. 43, no. 7, pp. 677–685, Jul. 2021, doi: 10.1177/0193945920969693.
- [27] L. A. Clark and D. Watson, "Constructing validity: new developments in creating objective measuring instruments," *Physiology & Behavior*, vol. 31, no. 80, pp. 678–687, 2019, doi: 10.1037/pas0000626.Constructing.
- [28] M. Lopuszanska-Dawid, H. Kołodziej, A. Lipowicz, and A. Szklarska, "Age, education, and stress affect ageing males' symptoms more than lifestyle does: the wroclaw male Study," *International Journal of Environmental Research and Public Health*, vol. 19, no. 9, 2022, doi: 10.3390/ijerph19095044.




- [29] R. J. de Almeida, C. T. de Moraes Luizaga, J. Eluf-Neto, H. R. de Carvalho Nunes, E. C. Pessoa, and C. Murta-Nascimento, "Impact of educational level and travel burden on breast cancer stage at diagnosis in the state of Sao Paulo, Brazil," *Scientific Reports*, vol. 12, no. 1, pp. 1–7, 2022, doi: 10.1038/s41598-022-12487-9.
- [30] N. P. W. P. Sari and M. Manungkalit, "The effect of family appraisal on caregiver burden in family caregiver of female cancer patients," *International Journal of Public Health Science*, vol. 12, no. 2, pp. 890–897, 2023, doi: 10.11591/ijphs.v12i2.22788.
- [31] T. Nuraini, D. Gayatri, I. N. Rachmawati, and I. Nur, "Comfort assessment of cancer patient in palliative care: A nursing perspective," *International Journal of Caring Sciences*, vol. 10, no. 1, pp. 209–215, 2017.

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