Validation of the Turkish Version of the Brief Pain Inventory in Surgery Patients

Aklime Dicle, PhD, RN, Özgül Karayurt, PhD, RN,* and Elif Dirimese, MSC,†*

Abstract:

The Brief Pain Inventory (BPI) is a comprehensive instrument for pain assessment and has been validated in several languages. A validated Turkish version has not been available until now. The purpose of this study was to determine the reliability and validity of the BPI for assessing pain in patients undergoing abdominal surgery in Turkey. The sample consisted of 178 patients who underwent abdominal surgery in general surgery and in obstetrics and gynecology clinics of a university hospital in Zmir, Turkey. A demographic questionnaire and the BPI were used to collect data. The content validity was tested by requesting opinions of experts. The structure validity of the scale was evaluated with factor analyses and reliability of the scale with Cronbach alpha and with item-to-total correlations. Two factors with an eigenvalue greater than one were extracted, supporting the validity of two-factor structure of the original BPI. Factor loads of these two factors ranged from 0.55 to 0.91. The Cronbach alpha reliability coefficient was 0.79 for the severity scale and 0.80 for the interference scale. The item-to-total correlations of the scale ranged between 0.42 and 0.69. The Turkish version of the BPI (BPI-Tr) is a reliable and valid instrument for assessing postsurgical pain severity and its interference. The BPI-Tr will be useful for clinical assessment of postsurgical pain in Turkey.

*From the Departments of *Surgical Nursing, Dokuz Eylul University School of Nursing and †Ege University School of Nursing, Izmir, Turkey.*

Address correspondence to: Özgül Karayurt, Dokuz Eylul Universitesi Hemirelik Yuksekokulu, Inciralti, Izmir 35340 Turkey. E-mail: ozgul.kyurt@deu.edu.tr.

Received July 15, 2008; Accepted August 12, 2008.

1524-9042/$36.00

doi:10.1016/j.pmn.2008.08.002

Pain is the symptom most frequently forcing people to seek professional help (Bonica, 1990; Davis, 2000). The International Association for the Study of Pain defined pain in 1979 as an unpleasant sensation and behavior, which may or may not depend on tissue damage in the body, but which is associated with past experiences of individuals (Davis, 2000). McCaffery defined pain in 1968 as "whatever the experiencing person says it is, existing whenever he/she says it does" (Herr et al. 2006). This definition emphasizes that you should believe patients in pain management. Such an approach improves a confidence relationship between patients and health professionals (American Society of PeriAnesthesia Nurses (ASPAN), 2003; Davis, 2000; Herr, et al., 2006; Virani, et al., 2007).

Health professionals should ask about pain, and the person's self-report should be the primary source of assessment with attention to the person's ability to carry out activities of daily living and general functioning (Comley & De Meyer, 2001; Virani, et al., 2007). The most important suggestion for pain management is to make a systematic and comprehensive pain assessment as the fifth vital sign and to achieve safe pain relief (American Pain Society (APS) Quality of Care Committee, 1995; Dihle, Bjølseth & Helseth, 2006; Polomano, et al., 2008; Virani, et al., 2007).

Postoperative pain is an expected outcome caused by tissue damage after surgical interventions, complications of surgical interventions, insertion of tubes and drains, or other invasive measures (American Society of Anesthesiologists [ASA], 2004). It is considered to be one of the most prevalent types of pain. Several studies have revealed that 47%-94% of patients feel pain of different severity after surgery (Apfelbaum, et al., 2003; McCaffery, Ferrell & Pasero, 2000; Polomano, et al., 2008).

Poor postoperative pain management interferes with daily life activities of patients, lengthens the duration of hospitalization and increases hospital costs (Gordon, et al., 2002; Haljame & Stomberg, 2003; Polomano, et al., 2008; Richards & Hubbert, 2007).

Pain plays an important role in patients' responses to illness and overall sense of well-being. Pain control may be problematic for a variety of reasons, including difficulties in objective assessment of this subjective symptom. Although physicians order analgesics, the drugs are often ordered to be used when needed, leaving nurses to decide on the dose and schedule. This decision is usually dependent on nurses' perceptions of patients' pain (Kocaman, 1994; McCaffery, Ferrell, & Pasero, 2000). Research has indicated that improving nurses' pain assessment improves pain management and that it is the nurse who is the most efficient health care management professional in pain assessment (McCaffery, Ferrell, & Pasero, 2000; ASA, 2004; Kocaman, 1994). Nurses need reliable and valid instruments which can be used in pain assessment. Several methods for scoring pain severity and/or pain quality have been developed and extensively used in clinical studies (Bonica, 1990). The methods traditionally used to assess pain (e.g., visual analog scales, numeric rating scales, or verbal rating scales) give reliable results for pain intensity, but tell little about the influence of pain on patients' functional capacity. Diagnosis of insufficient functions has been reported to be important in comprehensive pain assessment (APS, 1995; Gordon, et al., 2002). The Agency for Health Care Policy and Research and the American Pain Society (APS) have suggested that pain intensity and impact of pain on functions are the key measurements to be followed for a high-quality pain management (APS, 1995; Polomano, et al., 2008). Recognizing that functional impairment is central to comprehensive pain assessment, Cleeland and colleagues developed the Brief Pain Inventory (BPI). The BPI is designed to measure two targets: the subjective severity of pain, and the interference caused by pain (Cleeland & Ryan, 1994).

The BPI has shown high reliability and validity among different populations (Poundja, et al., 2007; Virani, et al., 2007; Zelman, et al., 2005). The BPI has been applied extensively in the assessment of cancer-related pain (Aisyaturridha, Naing, & Nizar, 2006; Saxena, Mendoza, & Cleeland 1999; Wang, et al. 1996). It is also used to assess pain in chronic conditions, including AIDS (Smith, et al., 2002), osteoarthritis (Mendoza, et al., 2006), low back pain (Gammaitoni, et al., 2003), chronic noncancer pain (Tan, et al., 2004), and traumatic stress disorder (Poundja, et al., 2007). It has been recommended in evidence-based practice guidelines that the BPI can be used for pain assessment in surgery patients with acute pain (Herr, et al. 2006 Virani, et al., 2007). The reliability and validity of the BPI have been tested in only three series of surgical patients (Zalon, 1999; Mendoza, et al., 2004; Gjeilo, et. al., 2007) and one series of cancer patients (Tittle, McMillan, & Hagan, 2003).

Up to now, no validated Turkish version has been published. Compared with development of a new scale, adaptation of an existing scale is cost-effective, saves time, and allows comparing data between different versions (Jamieson, 2004). For these reasons, we attempted to adapt the BPI into Turkish culture. Testing the reliability and validity of the BPI in a Turkish population will help nurses and other health professionals to assess pain severity and functional capabilities of patients after surgery in Turkey and will contribute to pain management. Therefore, the purpose of the present study was to determine the reliability and validity of the BPI for assessing pain in patients undergoing abdominal surgery in Turkey.

MATERIAL AND METHODS

Sample and Study Design

The sample of this cross-sectional and methodologic study included 178 patients who underwent abdominal surgery (cholecystectomy, appendectomy, herniorrhaphy, total abdominal hysterectomy, and caesarean section) in general surgery and obstetrics and gynecology clinics of a university hospital in Zmir, situated in the western part of Turkey. Data were collected at face-to-face interviews between February

1, 2004 and May 1, 2004. The patients able to speak Turkish and to communicate, conscious, and aged ≥18 years were included. The patients with cancer or cognitive impairment were not included.

Instruments

Because the BPI is used to assess pain in the previous 24 h and at the time of the interview, we collected data 72 h after operations. Another reason for collecting the data 72 h after operations was that patients are able to perform daily living activities within 3 days of surgery. Two instruments were used to collect data: a sociodemographic data form, and the BPI. It took an average of 15 minutes for the tools to be completed.

Demographic questionnaire Sociodemographic data included age, gender, education level, and type of surgery.

Brief pain inventory The BPI consists of four questions about pain severity and seven questions about pain interference with functions. Patients are asked to rate their pain when it is most severe and least severe and their pain on average over the previous 24 h as well as their pain at the time of data collection on a scale of 0 to 10. Each scale is composed of a row of equidistant numbers where 0 corresponds to lack of pain and 10 corresponds to pain as bad as you can imagine. Patients are also asked to rate separately how their pain interferes with general activity, mood, walking ability, normal work, relations with other people, sleep, and enjoyment of life. Zero on the rating scale corresponds to lack of interference, and 10 corresponds to complete interference. Total scores on the subscale of pain interference with functions are calculated by adding the scores for the each item on pain interference. We modified the interference item "normal work" in the original BPI into "deep breathing and coughing" because we did not view it as relevant to the immediate postoperative period. In addition, the patients are asked to estimate the percentage of pain relief they feel after pain treatment and to locate areas of pain on a human figure.

The BPI is brief, self-administered, and easily understood. In fact, patients can record the location of their pain on a body drawing and can give details of their current medication. The Cronbach alpha reliability of the original version of the BPI ranges from 0.77 to 0.971 (Cleeland & Ryan, 1994).

Translation Procedure for the BPI

The first step of the translation involved forward translation of the original BPI into Turkish by the first author of this paper and two native speakers of Turkish who spoke English fluently. The researchers, whose native language was Turkish, reviewed these preliminary Turkish versions of the inventory and then drafted one Turkish version of the BPI. To validate the content of the translated version of the BPI, it was given to seven bilingual health professional experts. The professional experts consisted of seven nursing faculty members. They suggested minor changes in wording, and the tool was revised accordingly. The forward-translated version was then back-translated by a professional bilingual translator unfamiliar with either the English or the Turkish version of the BPI to ensure the accuracy of the translation. The back-translation was compared with the original BPI by the authors of this paper. For the items or choices of responses where the back-translated and the original versions did not agree, the choice of words was discussed among the translators until a final version was reconciled. The final translated version was then piloted among 30 patients with postoperative pain. Changes in wording recommended by the patients were incorporated in the final version of the tool. It turned out that the reliability and the construct validity of the Turkish version of the BPI did not indicate any problematic item at the preliminary level. Therefore, further investigations on psychometric performance of the Turkish Brief Pain Inventory (BPI-Tr) were performed.

Ethical Considerations

Written informed consent was obtained from all patients. Approval was obtained from the administration of the hospital where the study was conducted. The study was also approved by the Ethics Committee of Dokuz Eylül University School of Nursing.

Statistical Analyses

Data were analyzed with Statistical Package for the Social Sciences 11.0. The content validity was tested by requesting opinions of the experts. To establish construct validity, principal axis factor analysis with nonorthogonal (oblimin) rotation, allowing the factors to be correlated, was then used in extracting factors (Nunnally & Bernstein 1994).

The internal consistency of the scale was tested with the Cronbach alpha analysis and the item-to-total correlation (LoBiondo-Wood & Haber, 2002; Akgül, 2005).

RESULTS

Patient Characteristics

The study included 36 (20.2%) men and 142 (79.8 %) women. The mean age of the patients was 45.7 years (SD 16.84 years), ranging from 18 to 78 years. Sixty-seven patients (37.6%) were high school graduates, 42

Table 1.
Characteristics of the Patients (n = 178)

Characteristics	n	%
Age (yrs)		
18-35	75	42.1
36-59	72	40.4
60-75	31	17.4
Mean	45.7	16.8
Gender		
Female	142	79.8
Male	36	20.2
Education level		
Primary school	69	38.8
Secondary school	42	23.6
High school	67	37.6
Type of surgery		
Cholesyctectomy	54	30.3
Appendectomy	25	14.0
Herniorrhaphy	30	16.8
TAH + BSO	42	23.7
Caesarean section	27	15.2

BSO = bilateral salphingo-oophorectomy; TAH = total abdominal hysterectomy.

(23.6%) were junior high school graduates, and 69 (38.8%) were primary school graduates. Fifty-four patients (30.3%) had a cholesyctectomy, 25 (14.0%) had an appendectomy, 30 (16.8%) had a herniorrhaphy, 42 (23.7%) had a total abdominal hysterectomy and bilateral salphingo-oophorectomy, and 27 (15.2%) had a caesarean section (Table 1).

Descriptive Statistics of the BPI-Tr

Descriptive data for each item of the pain severity and interference scales are shown in Table 2. The minimum and maximum scores that could be received for each item of the scale were 0 and 10, respectively. The mean value of the items of the scale ranged from 1.93 (SD ± 2.60) to 6.47 (SD ± 2.19). The mean worst pain score was 6.47 (SD ± 2.19), and the mean average pain score was 4.66 (SD ± 1.87). Of the seven interference domains, the patients reported the greatest interference on general activity (mean 5.70, SD ± 2.83) and the least interference on enjoyment of life (mean 1.93, SD ± 2.63).

Construct Validity of the BPI-Tr

To determine the structure validity of the BPI-Tr, a factor analysis was made. In the factor analysis, the Kaiser-Meyer-Olkin (KMO) coefficient of 0.90 and the Bartlett test (χ^2 = 11,723.48) were found to be highly significant (p = .000).

The factor analysis using the principal axis factor analysis with the direct oblimin rotation method yielded two factors with an eigenvalue of 1. Factor loads of these two factors ranged from 0.55 to 0.91. Detailed factor loadings are presented in Table 3. The first factor consisted of all seven interference items and accounted for 58.62% of the variance. The second factor consisted of the four pain severity scales and accounted for another 13.40% of the variance. Both factors accounted for 72.02 % of the total variance.

Table 2.
Descriptive Statistics of the BPI-Tr

	Mean (SD)
Pain severity (0-10)	
Pain worst	6.47 (2.19)
Pain least	2.29 (1.73)
Pain on average	4.66 (1.87)
Pain now	2.19 (1.70)
Pain interference (0-10)	
General activity	5.70 (2.83)
Mood	3.32 (3.56)
Walking ability	4.63 (3.12)
Deep breathing and coughing	5.25 (3.33)
Relations with others	2.43 (3.35)
Sleep	2.43 (3.23)
Enjoyment of life	1.93 (2.60)

BPI-Tr = Brief Pain Inventory–Turkish.

Reliability of BPI-Tr

Table 4 shows the reliability analyses of the BPI-Tr. Internal consistency of each of the two subscales was tested using Cronbach alpha reliability coefficients. The Cronbach alpha reliability coefficient of internal consistency was 0.79 for the severity scale and 0.80 for

Table 3.
Factor Loadings of the BPI-Tr Items

	BPI Interference, Factor 1	BPI Severity, Factor 2
Pain worst	0.12	0.91
Pain least	−0.24	0.85
Pain average	0.31	0.95
Pain now	0.34	0.57
General activity	0.55	−0.35
Mood	0.84	−0.02
Walking ability	0.62	0.16
Deep breathing and coughing	0.79	0.07
Relations with others	0.77	0.08
Sleep	0.66	0.30
Enjoyment of life	0.85	−0.02

BPI = Brief Pain Inventory; BPI-Tr = Brief Pain Inventory–Turkish.

TABLE 4.
Reliability Analyses of the BPI-Tr

BPI Item	Item-to-Total Correlation	Cronbach Alpha When Item Was deleted	Cronbach Alpha
Pain severity			0.79
Pain worst	0.56	0.79	
Pain least	0.62	0.79	
Pain average	0.69	0.79	
Pain now	0.42	0.82	
Pain interference			0.80
General activity	0.53	0.79	
Mood	0.49	0.80	
Walking ability	0.58	0.79	
Deep breathing and coughing	0.50	0.81	
Relations with others	0.45	0.81	
Sleep	0.52	0.79	
Enjoyment of life	0.50	0.80	

Abbreviations as in Table 3.

the interference scale. The alpha values for the scale when an item was deleted were similar to the overall alpha values for each of the two subscales. Reliability was also assessed by item-to-total correlations. The item-to-total correlations of the scale ranged between 0.42 and 0.69.

DISCUSSION

The results of this study provide support for the reliability and validity of the BPI-Tr for assessing pain severity and interference in surgical patients.

Construct Validity

Validity is the degree to which a thing has been measured. The most preferable types of validity used to evaluate the validity of a scale are content validity and structure validity (LoBiondo-Wood & Haber, 2002; Polit & Hungler, 1997). Factor analysis refers to grouping many variables under a few headings. It is agreed that the number of factors with an eigenvalue of ≥ 1 should be evaluated. Eigenvalue means the total variance explained by a factor. Another criterion is the number of factors explaining at least 5% of the variance (Akgül, 2005, LoBiondo-Wood & Haber, 2002, Polit & Hungler, 1997).

Based on the factor analyses of the BPI items in the present study, the results of the KMO (0.90) and Bartlett tests, used to determine whether correlation coefficient of the variables is significant, were significant ($\chi^2 = 11{,}723.48$; $p < .001$). The KMO value of 0.90 showed that the sample size was appropriate for factor analyses, and the significant results of the Bartlett test showed that the correlation matrix of the scale items were appropriate for factor analyses (Akgül, 2005)

As a result of the factor analysis conducted for construct validity, two factors with an eigenvalue >1 were obtained. Factor loads were found to be between 0.55 and 0.91. The frequently recommended factor loads which explain the relation between items and factors are above 0.40 (Akgül, 2005; LoBiondo-Wood & Haber, 2002). None of the items of the scale was omitted because the factor loading of the items was above 0.40. Two factors obtained accounted for 72.02 % of the total variance. The higher the variance the stronger the factor structure of a scale. Factor analyses showed a variance which is considered sufficient (LoBiondo-Wood & Haber, 2002).

Factor analyses of the BPI in the original English version (Cleeland & Ryan, 1994) and the other validated language versions, including Italian (Caraceni, et al.,1996), German (Radbruch, et al., 1999), Hindi (Saxena, Mendoza, & Cleeland, 1999), Chinese (Wang, et al., 1996), French (Poundja, et al., 2007), and Russian (Kalyadina, et al., 2008), has identified a two-factor model with pain severity items and interference items loading on the two factors.

Reliability

Reliability is the consistency between independent measurements of the same thing. Following the same procedure, using the same measurement methods, and obtaining the same results means that the measurement is free from random errors (Salkind, 2000).

The BPI subscales show acceptable internal consistency. The alpha coefficients were 0.79 and 0.80 for the subscales. Although not high enough (e.g., >0.90) to support the use of the BPI scores for making important treatment decisions, these levels of internal consistency are adequately high to support the use of the BPI scores as outcome variables in treatment outcome studies (Nunnally & Bernstein, 1994). For example, the BPI subscales could be used to assess the effectiveness of specific pain interventions. The reliability coefficients obtained in this study were similar to those of the original version of the BPI and of the studies from Malaysia (Aisyaturridha, Naing, & Nizar, 2006), Taiwan (Ger, et al., 1999), Italy (Caraceni, et al., 1996), the United States (Zalon, 1999), and Russia (Kalyadina, et al., 2008). Item analyses were completed using the following criteria to identify poorly functioning items: 1) an increase of >0.10 in the total scale reliability when an item was deleted; or 2) a correlation of <0.30 between an item and the subscale score (Nunnally & Bernstein, 1994). If an item of a scale has a high correlation coefficient, then that item is thought to have a strong relationship with the theoretic structure. In other words, that item is thought to be useful and efficient in measuring a target behavior. It is recommended that the acceptable correlation coefficient for each item should be 0.30 and that items with lower correlation coefficients should be omitted regardless of the results of item analyses (LoBiondo-Wood & Haber, 2002). In the present study, the cut-off point for the item-to-total correlation coefficient was considered to be 0.40 and the item-to-total correlations were all well above 0.40. Therefore, we did not need to discard any items from these two subscales.

CONCLUSIONS

The BPI-Tr, (supplementary material available at www.painmanagementnursing.org) is a reliable and valid instrument for postoperative pain severity and its interference assessment. The psychometric properties of the original version of the BPI were preserved. The BPI-Tr will be useful for the clinical assessment of postoperative pain. It is easy to use for both patients and investigators and acceptable for the study of pain across cultures. Also, it can be used to conduct studies of epidemiology and to evaluate the quality of pain management. The BPI-Tr can be especially suitable if the functional impairment caused by pain is considered to be an important outcome, but further research is needed to differentiate the impact of pain-related and surgery- or disease-related interference with function on the items of the BPI.

Acknowledgments

The authors thank the patients and the experts who gave their opinions for the content validity and the language of the BPI-Tr. We would also like to thank Prof. Dr. Gülseren Kocaman, who published the first Turkish pain book for nurses. She also introduced us to the "importance of pain" for patients.

REFERENCES

Aisyaturridha, A., Naing, L., & Nizar, A. J. (2006). Validation of the Malay Brief Pain Inventory questionnaire to measure cancer pain. *Journal of Pain Symptom Management*, *31*,13-21.

Akgül, A. (2005). *Tıbbi aratırmalarda istatistiksel analiz teknikleri SPSS uygulamaları*, 3. Basım [*Statistical analyses in medical research: Using SPSS, 440-446 3rd Ed.], (ss:)*. Ankara: Emek Ofset.

American Pain Society (APS) Quality of Care Committee (1995). Quality improvement guidelines for the treatment of acute and cancer pain. *Journal of the American Medical Association*, *274*, 1874-1880.

American Society of Anesthesiologists (ASA) (2004). Practice guidelines for acute pain management in the perioperative setting an updated report by the American Society of Anesthesiologists task force on acute pain management. *Anesthesiology*, *100*, 1573-1581.

American Society of PeriAnesthesia Nurses (ASPAN) (2003). Pain and comfort clinical guideline. *Journal of PeriAnesthesia Nursing*, *18*(4), 232-236.

Apfelbaum, J. L., Chen, C., Mehta S. S., & Gan, T. J. (2003). Postoperative pain experience: Results from a national survey suggest postoperative pain continues to be undermanaged. *Anesthesia & Analgesia*, *97*, 534-540.

Bonica, J. J. (1990). Postoperative pain. In: J. J. Bonica (Ed.), *The management of pain* (2nd ed), Vol. I. (pp. 461-480). Philadelphia: Lea & Febiger.

Caraceni, A., Mendoza, T., Mencaglia, E., Baratella, C., Edwards, K., Forjaz, M. J., Martini, C., Serlin, F. C., & Cleeland, C. S. (1996). A validation study of an Italian version of the Brief Pain Inventory [Breve questionario per la valutazione del dolore]. *Pain*, *65*, 87-92.

Cleeland, C. S., & Ryan, K. M. (1994). Pain assessment: Global use of the Brief Pain Inventory. *The Annals of the Academy of Medicine Singapore*, *23*, 129-138.

Comley, A. L., & De Meyer, E. (2001). Assessing patient satisfaction with pain management through a continuous quality improvement effort. *Journal of Pain and Symptom Management*, *21*, 27-40.

Davis, D. B. (2000). *Caring for people in pain.* (pp. 159-178). Florence, KY: Routledge.

Dihle, A., Bjølseth, G., Helseth, S. (2006). The gap between saying and doing in postoperative pain management. *Journal of Clinical Nursing* 15, 469-479.

Gammaitoni, A. R., Galer, B. S., Lacouture, P., Domingos, J., & Schlagheck, T. (2003). Effectiveness and safety of new oxycodone/acetaminophen formulations with reduced acetaminophen for the treatment of low back pain. *Pain Medicine*, *4*, 21-30.

Ger, L., Ho, S., Sun, W., Wang, M., & Cleeland, C. S. (1999). Validation of the Brief Pain Inventory in a Taiwanese population. *Journal of Pain and Symptom Management*, *18*(5), 316-322.

Gjeilo, K. H., Stenseth, R., Wahba, A., Lydersen, S., & Klepstad, P. (2007). Validation of the Brief Pain Inventory in patients six months after cardiac surgery. *Journal of Pain and Symptom Management*, *34*(6), 648-656.

Gordon, D. B., Pellino, T. A., Miaskowski, C., Mc Neill, J. A., Paice, J. A., Laferriere. D., Bookbinder M. (2002). A 10-year review of quality improvement monitoring in pain management: Recommendations for standardized outcome measures. *Pain Management Nursing*, *3*(4), 116-130.

Haljame, H., & Stomberg, M. W. (2003). Post-operative pain management clinical practice is still not optimal. *Current Anesthesia & Critical Care* 14, 207-210.

Herr, K., Coyne, P. J., Key, T., Manworren, R., McCaffery, M., Merkel, S., Pelosi-Kelly, J., Wild, L. (2006). *Pain assessment in the nonverbal patient: Position statement with clinical practice recommendations*. *Pain Management Nursing*, *7*(2), 44-52.

Jamieson, S. (2004). Likert scales: How to use them. *Medical Education*, *38*, 1212-1218.

Kalyadina, S. A., Ionova, I. T., Ivanova, O. M., Uspenskaya, S O., Kishtovich, V. A., Mendoza, R. T., Guo, H., Novik, A., Cleeland, C. S., Wang, S. X., (2008). Russian Brief Pain Inventory: Validation and application in cancer pain. *Journal of Pain and Symptom Management*, *35*(1), 95-102.

Kocaman, G. (1994). Ağrı: *Hemşirelik yaklaşımları* [*Pain:Nursing Approaches*, 1st ed.]. zmir: Saray Medical Yayıncılık.

Lobiondo-Wood, G., & J. Haber, (2002). Reliability and validity. In: G. Lobiondo-Wood & J. Haber (Eds.), *Nursing research methods, critical appraisal, and utilization* (5th ed, pp. 311-346). St. Louis: Mosby.

McCaffery, M., Ferrell, B. R., & Pasero, C. (2000). Nurses' personal opinions about patients' pain and their effect on recorded assessments and titration of opioid doses. *Pain Management Nursing*, *1*(3), 79-87.

Mendoza, T., Mayne, T., Ruble, D., & Cleeland. C. S. (2006). Reliability and validity of a modified brief pain inventory short form in patients with osteoarthritis. *Journal of Pain*, *10*, 353-361.

Mendoza, T. R., Chen, C., Brugger, A., Hubbard, R., Snabes, M., Palmer, S. N., Zhang, Q., Cleeland, C. S. (2004). The utility and validity of the modified Brief Pain Inventory in a multiple-dose postoperative analgesic trial. *Clinical Journal Pain*, *20*, 357-362.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric Theory* (3rd ed). New York: McGraw-Hill.

Polit, D. F., & Hungler, B. P. (1997). *Essentials of nursing research methods appraisal and utilization* (4th ed., pp. 291-314). Philadelphia: Lippincott Raven.

Polomano, R. C., Dunwoody, C. J., Krenzischek, D. A., & Rathmell, J. P. (2008). Perspective on pain management in the 21st century. *Journal of PeriAnesthesia Nursing*, *23* (1), 4-14.

Poundja, J., Fikretoglu, D., Guay, S., & Brunet, A. (2007). Validation of the French version of the Brief Pain Inventory in Canadian veterans suffering from traumatic stress. *Journal of Pain and Symptom Management*, *33*(6), 720-726.

Radbruch, L., Loick, G., Kiencke, P., Lindena, G., Sabatowski, R., Grond, S., Lehmann K. A., & Cleeland C. S. (1999). Validation of the German version of the brief pain inventory. *Journal of Pain and Symptom Management*, *18*(3), 180-187.

Richards, J., & Hubbert, O. A., (2007). Experiences of expert nurses in caring for patients with postoperative pain. *Pain Management Nursing*, *8*(1), 17-24.

Salkind, N. J. (2000). *Statistics for people who (think they) hate statistics* (pp. 273-296). London: Sage Publications.

Saxena, A., Mendoza, T., & Cleeland, C. S. (1999). The assessment of cancer pain in North India: The validation of the Hindi brief pain inventory-BPI-H. *Journal of Pain and Symptom Management*, *17*(1), 27-41.

Smith, M.Y, Egert, J., Winkel, G., & Jacobson, J. (2002). The impact of PTSD on pain experience in persons with HIV/AIDS. *Pain*, *98*, 9-17.

Tan, G., Jensen, M. P., Thornby, J. I., & Shanti, B. F. (2004). Validation of the Brief Pain Inventory for chronic nonmalignant pain. *The Journal of Pain*, *5*(2), 133-137.

Tittle, B. M. McMillan, S. C., & Hagan, S. (2003). Validating the Brief Pain Inventory for use with surgical patients with cancer. *Oncology Nursing Forum 30*(2), 325-330.

Virani, T., McConnell, H., Tait, A., Scott, C., & Gergolas, E. (2007). *Assessment and management of pain: nursing best practice guideline.* Retrieved from Registered Nurses Association of Ontario web site:: http://www.rnao.org/Storage/29/2351_BPG_Pain_and_Supp.pdf. Accessed: January 15, 2008.

Wang, X. S., Mendoza, T. R., Gao, S. Z., & Cleeland, C. S. (1996). The Chinese version of the Brief Pain Inventory (BPI-C): Its development and its use in a study of cancer pain. *Pain*, *67*, 407-416.

Zalon, M. L. (1999). Comparison of pain measures in surgical patients. *Journal of Nursing Measurement*, *7*, 135-152.

Zelman, D. C., Gore, M., Dukes, E., Tai, K. S., & Brandenburg, N. (2005). Validation of a modified version of the Brief Pain Inventory for painful diabetic peripheral neuropathy. *Journal of Vascular Nursing*, *23*, 97-104.

Araştrma No. **Hastane No:**

BU ÇİZGİNİN ÜSTÜNE YAZMAYINIZ

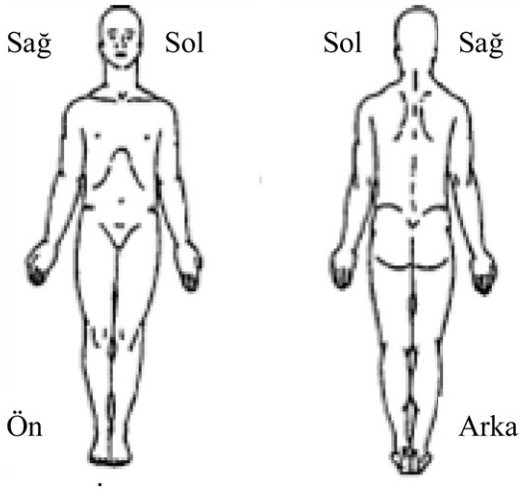
KISA AĞRI ENVANTERİ

Tarih: ……/……../……. Saat:..……
Adı, Soyadı: Hastane Protokol No: ……..

1. Yaşamımız boyunca zaman zaman birçok ağrı deneyimleriz (minör baş ağrısı, burkulma, diş ağrısı gibi). Bugünkü ağrınız her zaman yaşadığınız bu ağrı çeşitlerinden farklı mı?

   1. ☐ Evet 2. ☐ Hayır

2. Şekil üzerinde ağrı hissettiğiniz bölgeleri işaretleyiniz. En çok ağrıyan bölgeye X işareti koyunuz.



3. Son 24 saatteki "**en kötü"** ağrınızı en iyi tanımlayan sayıyı işaretleyiniz.

0	1	2	3	4	5	6	7	8	9	10
Ağrı Yok										**Dayanılmaz Ağrı**

4. Son 24 saatteki "**en hafif"** ağrınızı en iyi tanımlayan sayıyı işaretleyiniz.

0	1	2	3	4	5	6	7	8	9	10
Ağrı Yok										**Dayanılmaz Ağrı**

5. Son 24 saatteki "**ortalama"** ağrınızı en iyi tanımlayan sayıyı işaretleyiniz.

0	1	2	3	4	5	6	7	8	9	10
Ağrı Yok										**Dayanılmaz Ağrı**

6. "**Şu anki"** ağrınızı en iyi tanımlayan sayıyı işaretleyiniz.

0	1	2	3	4	5	6	7	8	9	10
Ağrı Yok										**Dayanılmaz Ağrı**

7. Ağrınız için aldığınız tedaviler ya da ilaçlar nelerdir?

8. Son 24 saatte, ağrı tedavisi ile ağrıdan kurtulmanız nasıldı? Ağrınızdan en fazla ne kadar kurtulduğunuzu yüzde olarak gösteriniz.

%0	%10	%20	%30	%40	%50	%60	%70	%80	%90	%100
Hiç Kurtulmadım.										**Tamamen Kurtuldum.**

9. Son 24 saatte, ağrınız nedeniyle aktivitelerinizdeki etkilenme durumunu en iyi tanımlayan sayıyı işaretleyiniz.

A. GENEL AKTİVİTE

0	1	2	3	4	5	6	7	8	9	10
Hiç Etkilenmedim.										**Tamamen Etkilendim**

B. EMOSYONEL DURUM

0	1	2	3	4	5	6	7	8	9	10
Hiç Etkilenmedim.										**Tamamen Etkilendim**

C. YÜRÜYEBİLME

0	1	2	3	4	5	6	7	8	9	10
Hiç Etkilenmedim.										**Tamamen Etkilendim**

D. DERİN SOLUNUM VE ÖKSÜRME EGZERSİZİ

0	1	2	3	4	5	6	7	8	9	10
Hiç Etkilenmedim.										**Tamamen Etkilendim**

E. DİĞER İNSANLARLA İLİŞKİLER

0	1	2	3	4	5	6	7	8	9	10
Hiç Etkilenmedim.										**Tamamen Etkilendim**

F. UYUMA

0	1	2	3	4	5	6	7	8	9	10
Hiç Etkilenmedim.										**Tamamen Etkilendim**

G. YAŞAMDAN ZEVK ALMA

0	1	2	3	4	5	6	7	8	9	10
Hiç Etkilenmedim.										**Tamamen Etkilendim**