



VALIDATION STUDY OF THE DISTRESS THERMOMETER: PSYCHOSOCIAL DISTRESS SCREENING AMONG HEAD AND NECK CANCER PATIENTS

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ABSTRACT

OBJECTIVES: This study aims to validate the Distress Thermometer Filipino version, (DT-F) in head and neck cancer patients and identify the cut off score of DT-F for psychosocial distress at which to make referrals for clinical intervention.

METHODOLOGY: After obtaining permission from the National Comprehensive Cancer Network (NCCN), translation and back-translation of the Distress Thermometer (DT) were done. One hundred ninety-two patients who fit the inclusion criteria were included in the study. They were from the outpatient clinic and ward of both the Cancer Institute and Otorhinolaryngology Department and each participant accomplished a socio-demographic form, the DT-F and Problem List, The Hospital Anxiety and Depression Scale-Pilipino (HADS P) and had a brief psychiatric interview.

RESULTS: Receiver Operating Characteristic (ROC) curve analyses generated area under the curve (AUC) of 0.7506, suggesting good discrimination using the HADS P cut off score of 11. The optimal cut off score in DT-F is 4, with a sensitivity of 77% and specificity of 58%. Hence, using this cut off score, head and neck cancer patients who score 4 and above in the DT-F were identified to experience clinically relevant psychosocial distress than those who score below the cut off.

CONCLUSION: The Filipino version of DT is a valid tool for screening psychosocial distress in head and neck cancer patients. Using a cut off score of 4 is recommended for appropriate and timely referral for further evaluation.

KEYWORDS: Distress Thermometer, Psychosocial Distress, Head & Neck Cancer

INTRODUCTION

Cancer is a leading cause of morbidity and mortality worldwide. Data show that there are approximately 14 million new cancer cases, 8.2 million cancer deaths and 32.6 million people live with the consequences of cancer in 2012, worldwide. (1) For both sexes, lung cancer was the most common cancer worldwide contributing 13% of the total number of new

cases, while breast cancer (for women only) and colorectal cancer, the second and third most common respectively, diagnosed in 2012. (2) Jemal and colleagues reported that head and neck squamous cell carcinomas (HNSCC) is the sixth leading cancer worldwide and that there are more than 550,000 new cases of head and neck cancers (of which, 90% are HNSCC) diagnosed each year with a male to female ratio

hat ranges from 2:1 to 4:1. (3)

In developing countries, head and neck cancers are highly prevalent and one of the most common forms of cancer, particularly in Southeast Asia. Head and neck cancer is considered to be one of the most “traumatic” forms of cancer owing to its effects on the patients’ breathing, swallowing, speech and hearing (4).

In the Philippines, malignant neoplasms are the third cause of mortality, with 98, 200 new cancer cases diagnosed each year; with breast cancer and lung cancer as the most prevalent in women and men, respectively. (5) The report estimated that oral cavity cancer will be the 15th most common site when both sexes are combined (2%) (6).

The risk factors for cancer worldwide are tobacco use, alcohol use, unhealthy diet and physical inactivity which are all modifiable. Similarly, these risk factors account for the continued increasing incidence and prevalence of cancers in the Philippines. Given the continued advances in early cancer detection and treatment, and in spite of the awareness campaigns conducted by public and private sectors done in the Philippines, the reality is that a large percentage of cancers are still not diagnosed and treated at an earlier, and more curable stage in the country. It has long been perceived that lack of cancer awareness and education account for the continued increase of cancer incidence, however, it could also be that socioeconomic reasons limit Filipinos in availing the necessary cancer care and treatment. (7)

The chronic nature of cancer, the psychological, its emotional and financial burden on the patient and the family greatly impact the survivorship of patients, and vice versa. Mehnert and colleagues reported emotional distress is common after a cancer diagnosis and is often a result of a variety of problems that can affect every aspect of life according to different stages of the disease. The authors reported that most of the concerns of patients relate to the physical symptoms such as pain, fatigue and problems with functional impairments and burden on the family as well as social, financial and occupational problems (6).

The National Comprehensive Cancer Network (NCCN) in the United States has recognized the lack of integration of psychosocial care into routine cancer care and believed that physician and patient attitudes contribute to this.

A multidisciplinary panel of the NCCN, responsible for making pain the fifth vital sign by using simple pain scale of zero to ten, modelled and recommended a similar and simple question to ask patients about their psychosocial concerns and believed that distress was the best umbrella term to represent and destigmatize the emotional concerns that cancer patients experience ranging from normal fears, worry and sadness to clinical depression, generalized anxiety, panic, isolation or a spiritual or existential crisis. The NCCN panel acknowledged the importance of incorporating the assessment of psychosocial distress as part of routine cancer care and considered distress as the sixth vital sign. (7)

The high prevalence of psychosocial distress in patients with head and neck cancer had been noted in various literatures. In a review done by Frampton, he reported that psychological morbidity is often under diagnosed and undertreated due to a range of factors that include a normal reaction to the diagnosis of cancer, the reluctance of patients to confide openly to their doctor, the patients’ tendency to minimize the severity of their symptoms and the overlap of symptoms of physical and emotional distress (4).

In a prospective observational study of outpatients with head and neck cancers, Neilson and colleagues assessed symptoms of depression and anxiety before and after the patients underwent radiotherapy using HADS and Functional Assessment of Cancer Therapy-Head & Neck (FACT -H & N). Their findings indicated that there are significant changes in symptoms of depression and anxiety in relation to timing of radiotherapy, with a third of patients reporting mild to severe depressive symptoms after radiotherapy, emphasizing the need of ongoing monitoring to identify patients at risk. (8) Similarly, Lydiatt and colleagues stated in their review that head and neck cancer patients experience higher rates of major depressive disorder of all oncology patients. (9)

A study by De Leeuw and coworkers cited in the article enumerated factors that place head and neck cancer patients at risk of developing depression; these include lack of emotional support, a lack of a social network, avoidant style of coping, advanced tumor stage, gender (women), and a lack of openness to discuss cancer in the family. (10) The preceding studies mentioned have highlighted the high prevalence of psychological distress experienced by head and neck cancer patients. Most of these emphasized the need for appropriate and timely screening to detect and address distress as part of the multidisciplinary care of the cancer patient.

Multiple researches have been done to ascertain the prevalence of psychosocial distress using diverse methods to measure distress among different cancer populations. Based on these studies, there is a wide range of prevalence rates of psychological distress, and it can be safely assumed that one-third to two-thirds of cancer patients experience distress. Norton and colleagues identified the prevalence of psychological distress among 143 patients with ovarian cancer using the Beck Depression Inventory, the Mental Health Inventory, the Impact of Events Scale and a questionnaire regarding mental health service use and found out that about one fifth of women experienced moderate to severe level of distress and more than half reported high stress responses to their cancer and its treatment. (11) Using the Hospital and Depression Scale (HADS) among one hundred cancer patients, Santre and colleagues reported a rate of 42% cases experiencing emotional distress. (12) Other researchers used different methods and reported 77% prevalence rate of psychological distress (13), 33% of sarcoma patients experienced distress (14) while prevalence of anxiety ranged between 21.5 and 27.4%, and prevalence of depression was 21.1% (15), and 38% of cancer patients in the outpatient reported experiencing psychological distress. (16) In 1998, Roth and colleagues used the Distress Thermometer in 97 prostate cancer patients and reported 28.6% experienced psychosocial distress based on the designated cutoff. (17)

Studies among head and neck cancer patients similarly showed a wide range of psychological distress, from 12% as the lowest to as high as 46%

Pandey and colleagues cited in their study that up to 20% of patients may show severe depression, grief, lack of control, personality changes and anxiety. (18) Other studies showed higher ranges of psychological distress such as in the study by Riblet and colleagues quoted that 35% of head and neck cancer patients experience psychological distress (19), while 25% to 30% was quoted initially by Krebber and colleagues and reported after their study a staggering 29% rate of psychological distress experienced by patients in this population. (20) In a cross-sectional study of 436 patients attending a head and neck oncology multidisciplinary clinic in New England, Maher and colleagues stated in their study that 34% of patients reported having pain, while 13% had clinically significant distress. (21) In their research, pain was assessed using a Numerical Rating Scale, while distress was measured using the PSYCH-6 and the Distress Thermometer (DT) scales. (21)

The Distress Thermometer (DT) is a single-item rating scale which the patient is asked to rate the rate of their level of distress. Since its development, the National Comprehensive Cancer Network (NCCN) incorporated it as part of the Clinical Practice Guidelines for Distress Management. The NCCN suggested that as part of a multidisciplinary approach on incorporating psychosocial care into routine cancer care, the Problem List be incorporated with the Distress Thermometer.

The Problem List is used to determine the nature and source of the patient's distress and help identify to which discipline the patient needs to be referred. The initial cut off score was 4, and was the basis of referral to appropriate service for psychosocial support. (22) NCCN has since then implemented the DT and the problem list as the initial screening tool to assess distress in cancer patients and those needing appropriate psychosocial support (22).²⁵

Administering to prostate carcinoma patients, a pilot study using the DT by Roth and colleagues in 1998 proved that DT, along with the Hospital Anxiety and Depression Scale (HADS), can be a rapid screening measure that allowed oncologists determine patients with significant distress.

They however suggested that further testing was needed for the DT as well as the identification of barriers that impede the detection of the most distressed patients. (17) Since its introduction and NCCN's incorporation to the Clinical Practice Guidelines for Distress Management, the DT has been used, translated and validated in numerous researches worldwide. (22)

Using the DT, detection of psychosocial distress will impact the survivorship of cancer patients. Providing psychosocial support to patients diagnosed with cancer at key time points of their cancer journey has the potential to reduce the development of psychiatric morbidity and to help patients be able to manage better the effect of treatment and return to fully functional lives and survivorship after treatment. (23) The DT and problem list along with the Brief Symptom Inventory (BSI) were used by Lee and colleagues to describe the outcomes and clinical experience of routine distress screening of newly admitted patients to hematology and oncology ward. They reported that 47% of 51% of clinically distressed patients did not receive psychosocial support before screening. Referrals to appropriate discipline were done during the study and witnessed the positive attitude of staff towards the ability to routinely screen for distress. The authors concluded that there was significant improvement in the capacity of staff to offer psychosocial care through routine distress screening. (24)

In 2011, the evidence review conducted by the McMillan Cancer Support Care in the United Kingdom revealed that cancer affects patients physically, emotionally and financially, however, the emotional effects are the most neglected and last the longest even after treatment is finished.

By using the four-tier model for cancer patients and their families, as recommended by NICE, the professionals were able to provide the necessary psychological support needed by patients.

At level two of the model of the four -tier model, staff including nurses, doctors, and allied health professionals be proficient at screening for psychological distress and intervening with techniques such as psycho-education and problem solving.

Timely provision of psychological support

resulted to improvement of the health and wellbeing of people affected by cancer, reduction of the work load of other health and social care professionals and showed potential efficiency gains for health and social care. However, despite the growing knowledge and national guidelines recommending active management of distress, implementation in routine practice remains a challenge.

Ging-Long Wang and colleagues screened for psychosocial distress in Taiwan using both DT and HADS as screening tools. They noted that both tools were efficacious for screening anxiety and depression for cancer patients, however comparing both tools, DT appeared to have higher sensitivity and specificity (25)

At present, there are no existing data in the Philippines investigating the incidence and prevalence of psychological and emotional aspects of patients diagnosed with cancer as well as any systemized referral process for psychosocial support of patients with psychological distress. Focus group discussion done with Otorhinolaryngology residents brought into light some key reasons for referral of their patients for psychosocial support. Based on their clinical assessment, patients who will undergo disfiguring surgery, those with previous psychiatric morbidity, patients whom they consider to be a possible long-term burden to the family and as part of the holistic management are the patients the residents refer for psychosocial support. (26)

This study aims to validate the Distress Thermometer, Filipino version (DT-F) in head and neck cancer patients, by using the translated and validated HADS-P, which is an established measure of distress. The optimal cut off score for DT-F will be determined to identify patients with clinically relevant psychosocial distress. And in doing so, a valid screening tool that is quickly administered may be made available for psychosocial distress detection and timely referral.

METHODOLOGY

This cross -sectional study was reviewed and approved by Research Ethics Board. Permission for translation and validation was requested and granted by the National Comprehensive Cancer

Network.

The NCCN DT was translated into Filipino by Sentrong Wikang Filipino, which is one of the coordinating arms of the Manila that monitor, facilitate, and conduct university policy and programs on language. Back translation was performed by a consultant and resident physicians of the Department of Psychiatry and Behavioral Medicine who speak English and have never used the DT. The reviewing panel suggested changes in a few terms in the Problem list accompanying the DT. These changes were incorporated and the Filipino version of the Distress Thermometer (DT-F) was finalized. Likewise, permission to use the HADS-P, the gold standard used in this study, was obtained from Dr X. Proper coordination with the head of both the Department of Otorhinolaryngology and Cancer Institute were done and permission to conduct research on both departments was obtained.

Using the general computation for estimation of prevalence of psychosocial distress among head and neck cancer patients, the sample size was computed.

In the cross-sectional study of 436 patients attending a head and neck oncology multidisciplinary clinic in New England, Maher and colleagues stated in their study that 13% had clinically significant distress. In the study, pain was assessed using a Numerical Rating Scale, while distress was measured using the PSYCH-6 and the DT scales. (21) Using 13% prevalence rate of psychosocial distress, the level of confidence set at 95% and maximum tolerable error of +/- 5 the sample size computed, the formula revealed a sample size of 192, taking into consideration an initial 10% drop-out rate.

One hundred ninety-two participants were recruited using convenience sampling from August 2016 to November 2016. Participants of this study were patients seen at the outpatient clinic or admitted at the wards of the Otorhinolaryngology department and the Cancer Institute.

Eligible participants were Filipinos aged 19 years old and above, diagnosed with head and neck cancer, understood their diagnoses, able to understand Filipino, not previously diagnosed

with any psychiatric disorder and were able to give their informed consent.

After explaining the objectives, risks and benefits of the study, informed consent was obtained from each participant. They were given the socio-demographic form, DT-F and HADS P. For patients who had physical difficulties in reading and those who were illiterate, the research assistant read and helped complete the screening tools. A brief psychiatric interview was then done by the investigator. Participants answered the questionnaires and interviewed by the investigator in the waiting area prior to their consultation at the OPD, while those admitted accomplished the forms and were interviewed in their respective beds at the ward. Data gathered from the participants were kept confidential. Recommendations for referral to the Consultation Liaison section were given to the attending physicians of participants who were assigned with a psychiatric diagnosis on interview.

Socio-demographic data

The following demographic data was collected from participants and their medical records at baseline: name, age, sex, marital status, educational attainment, religion, living conditions, employment status, length of time since diagnosis was known, modes of treatment, and history of psychiatric consultation.

Distress Thermometer and Problem List, Filipino version (DT-F)

The Distress Thermometer has been recommended by the National Comprehensive Cancer Network (NCCN) as part of the multidisciplinary care for cancer patients as a screening tool to detect clinically significant distress. (27). It is a one item, self-report measure of psychological distress developed for cancer patients who are asked to rate their distress in the past week. It is a visual analogue scale that range from 0 (no distress) to 10 (extreme distress). Afterwards, patients are asked to fill in the problem list that accompanies the DT. This is used to aid in the determination of nature and source of the patient's distress. The translated Filipino versions of both the distress thermometer and problem list were used on head and neck cancer patients.

Hospital and Anxiety Depression Scale - Pilipino (HADS-P)

The Hospital Anxiety and Depression Scale (HADS) developed in 1983 by Zigmond and Snaith, is a brief, self-administered questionnaire designed for use with people who are medically ill to detect anxiety and depressive disorders. The HADS has 14 items, of which seven questions are related to anxiety and the other seven, related to depression. The HADS has different cut-off scores in various studies to indicate significant anxiety and depressive symptoms. (28) In 2013, de Guzman determined the reliability and validity of the HADS and its Filipino translation (HADS-P). She reported that the optimal cut off score was 11, with sensitivity, specificity and a positive predictive value of 75%, 70%, 75%, respectively. (29) The HADS P has been used in multiple studies since its validation in the Philippines and used as a gold standard in this study.

Psychiatric Interview

A brief psychiatric interview of the participants was done by the investigator after completion of the DT-F and HADS P. This was to ensure that questions pertaining to the questionnaires were answered and that participants necessitating intervention, and gave consent for referral, were immediately referred to the Department.

Accomplished forms were checked and data collected were encoded using Microsoft EXCEL. Statistical analyses of the data were performed using STATA for Windows (Version 12.0) software program.

The participants' characteristics were analyzed using descriptive statistics. Analysis of Receiver Operating Characteristics (ROC) curves was used to determine the ability of the DT- F in detecting psychosocial distress in participants. ROC curves are a plot of (1-specificity) of a test on the x-axis, HADS P in this study, against its sensitivity on the y-axis for all the possible cut off scores; (30) they are a graphical representation of true positives versus false-positives across a range of cut off scores and aid in the selection of the optimal cut off score (31)

ROC curve analysis is used to quantify the accuracy of tests in discriminating patients who have the condition or the disease from those who does not have the condition. (32)

The area under the ROC curve (AUC) represents the overall accuracy of a test. It takes values from 0 to 1 in which a value of 0 indicates an inaccurate test while a value approaching 1.0 indicate high sensitivity and specificity. The general guideline for interpretation of AUC values were 0.50-0.60 as indication for no discrimination, 0.60-0.70 for poor discrimination, 0.70-0.80 indicates acceptable discrimination, 0.80-0.90 has good discrimination while 0.90-1 means excellent discrimination. (33)

In this study, the discriminative accuracy of the established DT-F cut off score using the cut off score of HADS P which was 11 was estimated using the Area Under the Curve (AUC).

TABLE 1. SOCIO-DEMOGRAPHIC PROFILE OF PARTICIPANTS. (N= 192)

	#	%
Age		
18 to 30 years	14	7.29
31 to 43 years	39	20.31
44 to 55 years	57	29.69
56 to 67 years	56	29.17
>67 years	26	13.54
Education		
None	4	2.08
Elementary	51	26.56
High School	83	43.23
Vocational Course	11	5.73
College	43	22.40
Employment Status		
Unemployed	110	57.29
Self-employed	44	22.92
Employed	38	19.79
Living Condition		
Lives alone	12	6.25
Lives w/ spouse & children	124	64.58
Lives w/ spouse	13	6.77
Lives w/ children	28	14.58
Lives w/ parents	9	4.69
Lives w/ siblings	6	3.13
Months since time of Dx		
< 6 months	42	21.88
6-12 months	31	16.14
12-18 months	51	26.56
24. months	26	13.54
30. months	15	7.81
30-36 months	6	3.13
> 36 months	21	10.94
Treatment History (Tx Hx)		
None	97	50.52
Surgery	39	20.31
Chemotx	5	2.60
Radiation Tx	6	3.13
Surgery+ Chemo+ Radiotx	14	7.29
Surgery + Chemotx	10	5.21
Surgery + Radiotx	4	2.08

Table 2. Diagnosis of participants based on psychiatric interviews

Diagnosis	Frequency	Percentage (%)
No Psychopathology	161	83.85
Adjustment Disorder	8	4.17
Generalized Anxiety Disorder	8	4.17
Major Depressive Disorder	15	7.81
TOTAL	192	100

RESULTS

A total of 192 patients were invited for this study from the outpatient clinics and charity wards of the Otorhinolaryngology department and Cancer Institute of the Philippine General Hospital. One hundred percent finished the questionnaires and were included in the analysis.

The distribution of patients according to their socio-demographic profile is shown in Table 1. This includes the age, gender, educational attainment, living conditions, employment status, length of time since diagnosis was known, and treatment history. Most of the participants diagnosed with head and neck cancer were aged 44 years old and above (139/192 - 72.40%). For gender, there were more male participants than females (110 or 57.29% males and 82 or 42.71% females). As for educational attainment, majority of the participants were able to attain high school and higher education (137 or 71.35%) yet most of them were unemployed (57.29%), which included housewives and retirees. More than half of the participants were currently living with their spouses and children (64.58%). The mean number of months since diagnosis was 27.4 (SD = 15.5; range = 1- 120 months). Most of the participants were seen within the first 18 months since they were diagnosed (124 or 64.58%). More than half (50.52%) of the participants had not had received any form of treatment while 20.31% underwent surgery.

Out of the 192 participants, 31 (15.63%) were diagnosed with major depressive disorder, generalized anxiety disorder and adjustment disorder during the psychiatric interview. (Table 2). The 31 participants were informed of their diagnosis and advised referral for further evaluation and of these, 25 of the 31 (80.65%) patients gave consent for referral and were referred to the Department of Behavioral Medicine, while 6 (19.35%) of them refused referral. Fifty six percent of participants were identified

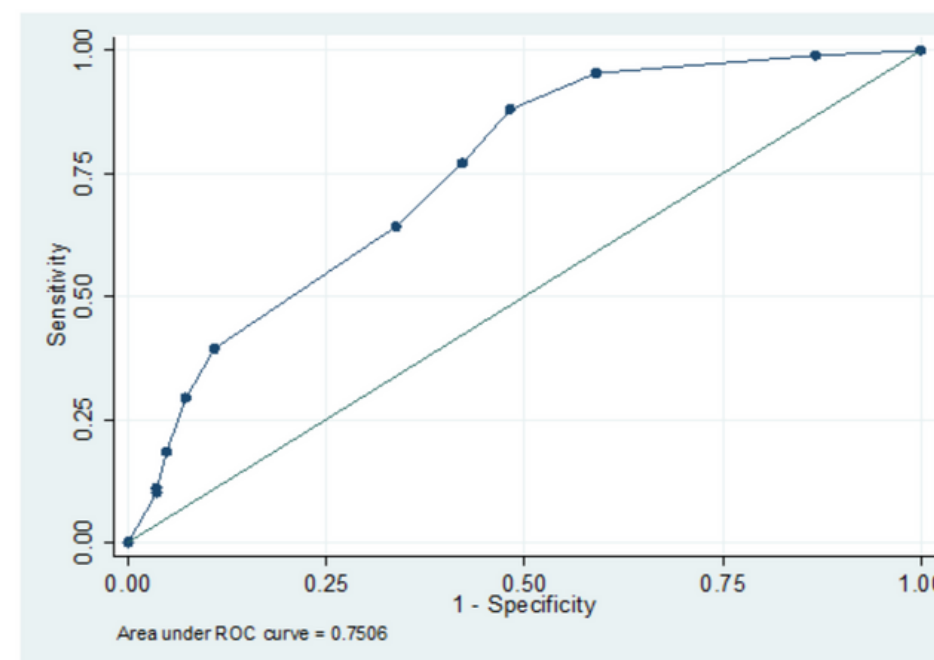


FIGURE 1. RECEIVER OPERATING CHARACTERISTIC CURVE ANALYSIS OF DISTRESS THERMOMETER FILIPINO VERSION SCORES VERSUS HOSPITAL ANXIETY AND DEPRESSION SCALE FILIPINO CUT OFF SCORE.

with clinically relevant psychosocial distress using the HADS P cut off score of 11.

Figure 1 shows the Receiver Operating Characteristic (ROC) Curve analysis obtained an Area Under the Curve of 0.7506, which showed good discrimination based on the gold standard used. Each DT-F score was used as potential cut off and the sensitivities and specificities of each were computed.

The sensitivity, specificity, likelihood ratio positive and negative computed for each DT-F cut off score are shown on Table 3. For the DT-F, a cut off score of 4 identified 77.06% of the HADS P cases (sensitivity) and 57.83% of the HADS P non cases (specificity) while a cut off score of 3 has 88.07% sensitivity and 51.81% specificity.

DISCUSSION

The validity of the Filipino version of the DT as a screening tool for psychosocial distress among head and neck cancer patients examined in this study. HADS P used as a gold standard identified 109 (56%) participants with psychosocial distress. Analyses of data showed that a cut off score of 4 for the DT-F generated sensitivity of 77% and a specificity of 58% using the HADS P cut off score of 11. Using this cut off score, the DT-F identified 119 (62%) participants with psychosocial distress.

Cut off scores from other literatures ranged from 3 to 6 for detecting psychosocial distress while the optimal cut off set by NCCN Guidelines was 4 and above, and indicated the need for further evaluation and referral to the proper psychosocial or supportive care service. (27) In a study by Donovan and colleagues, the translation and validation of DT in different

countries were studied. Their research revealed that DT had been translated from English to 21 non-English languages and 18 were validated. Determination of cut off scores were done with different screening tools used in ROC curve analysis and were found to have variations in different countries, however majority of them have a cut off score of 4 that has optimum sensitivity and specificity. (34) The result of this study showed comparable results to studies done in different countries, with majority of them having a cut off of 4.

Table 3. Sensitivity & Specificity for DT cut off score.

Cut off score	Sensitivity (%)	Specificity (%)
(≥ 0)	100.00	0.00
(≥ 1)	99.08	13.25
(≥ 2)	95.41	40.96
(≥ 3)	88.07	51.81
(≥ 4)	77.06	57.83
(≥ 5)	64.22	66.27
(≥ 6)	39.45	89.16
(≥ 7)	29.36	92.77
(≥ 8)	18.35	95.18
(≥ 9)	11.01	96.39
(≥ 10)	10.09	96.39
(> 10)	0.00	100.00

The ROC curve analysis of DT-F scores compared with the established cut off of gold standard used, HADS P, obtained an AUC of 0.7506. The AUC value indicates good discrimination using the HADS P as a gold standard. With each DT-F score used as potential cut off and their sensitivities and specificities computed, cut off scores of 3 and 4 were considered. DT-F cut off score are of 3 has 88% sensitivity and 52% specificity while the cut off score of 4 identified 77% and 58%. Taking into account the result of other validation studies of the DT, in which majority revealed and recommended a cut off of 4, in as much as the recommended cut off of the NCN guidelines, similarly, that is 4, the cut off score of 4 was set. More importantly, the cut off score of had optimum sensitivity and smaller percentage of participants being incorrectly classified as having psychosocial distress, as compared to the cut off score of 3. Using the cut off score of 4 also takes into consideration a patient's response when incorrectly classified as having psychosocial distress. Incorrectly classified patients may experience additional burden of having to undergo further screening procedures on top of their foremost priority of addressing their cancer treatment. Lastly, the limitation of manpower and financial costs of increased

number of incorrectly classified patients are taken into consideration. Hence, in using the DT-F as a screening tool for psychosocial distress, it is recommended that the cut off score of 4 is used, which best parallels to other validation studies and takes into account the important physician and patient factors.

This is the first validation study of the DT to be conducted in the Filipino population. In this study, head and neck cancer patients were used as the population sample.

Patients with head and neck cancer are known to develop high degree of psychosocial distress. Humphris and Ozakinci reported that patients diagnosed with head and neck cancer are prone to development of psychological distress after disclosure of cancer diagnosis and tend to extend during treatment phase. They further noted that the variety of reaction depend on a number of factors including fears of recurrence, health beliefs, personality type, coping, and the availability of support. (35)

Their review introduced a number of key factors that allowed surgeons and clinicians to be more mindful of a more complete management of the patient with head and neck cancer; that is to include psychological interventions. A substantial number of literature have further underscored the psychological distress experienced by patients with head and neck cancer. Pandey et al investigated the effect of distress on the quality of life in head and neck cancer patients in India where head and neck cancer is the most common cancer in males and third most common in females and concluded that high amounts of stress led to poor quality of life of patients. (18)

Krebber and colleagues investigated the screening in follow up care to identify head and neck cancer patients with untreated psychological distress using Onco Quest (a touch screen computer system to monitor psychological distress, Hospital Anxiety and Depression Scale (HADS) and quality of life (HRQOL; EORTC QLQ-C30 and H&N35 module) and concluded that screening for psychological distress among head and neck cancer patients is beneficial to identify patients with psychological distress who do not yet receive treatment. (20)

Riblet and colleagues did a study to improve the

mental health care of patients with head and neck cancers by identifying and managing psychological distress using the Distress Thermometer and an evidenced-based treatment decision algorithm. This was done in Norris Cotton Cancer Center in Northern New England where the investigators conveyed that though patients were treated in a multidisciplinary approach, the institution lacked a policy for distress screening leading to possible missed diagnoses of stress. (19)

A subset of head and neck cancer patients, oral cancer survivors, and their supportive care needs were determined by Lee et al. The result of the study showed the substantial unmet needs of this population, with many of the unmet needs falling in the emotional domain and that the survivors have high rates of interest in several supportive care services including support groups and various forms of informational support. (36)

Patients with different types of cancer yield different levels of distress. Similarly, with the study was conducted, hence majority of the participants belong to the middle to low socio-economic class. Another limitation is the venue of the study, particularly those seen in the outpatient department, where patients may have experienced discomfort waiting in line and sometimes in a hurry to be seen by their attending physician that may have affected the manner of answering the screening tools.

Hence, it would be ideal that the DT-F may be considered to be used in patients with other types of cancer in future studies. It is also recommended that multi-center studies with a larger and more diverse population be done for the DT-F.

Conclusion

The Filipino version of DT is a valid tool for screening psychosocial distress in head and neck cancer patients. Using a cut off score of 4 is recommended for appropriate and timely referral. The results of the study can help initiate the regular implementation of the DT-F on all cancer patients, eventual nationwide implementation with the goal of psychosocial support provision as part of the holistic care of the cancer patient.

REFERENCES

1. International Agency for Research on Cancer. (2016). [cited 2016 July 30]; Available from GLOBOCAN: http://globocan.iarc.fr/Pages/fact_sheets_cancer.aspx
2. Worldwide Data. (2016). [cited 2016 July 30]; Available from: World Cancer Research Fund International: <http://www.wcrf.org/int/cancer-facts-figures/worldwide-data>
3. Jemal A, Bray F, Center MC, Ferlay J, Ward E, Forman D. Global cancer statistics. *CA Cancer Journal for Clinicians*. 2011 Mar- Apr; 61(2): 69-90. PMID 21296855; doi: 10.3322/caac.20107.
4. Frampton M. Psychological distress in patients with head and neck cancer: review. *British Journal of Oral and Maxillofacial Surgery*. 2001 Feb; 39 (11): 67-70. PMID 11178847; doi: 10.1054/bjom.2000.0547.
5. Laudico AV, Medina V, Lumague MRM, Mapua CA, Redaniel MTM, Valenzuela FG et al. 2010 Philippine Cancer Facts and Estimates. Manila: Philippine Cancer Society, Inc; 2010.
6. Mehnert A, Koch U, Schulz H, Wegscheider K, Weis J, Feller H, et al. Prevalence of mental disorders, psychosocial distress and need for psychosocial support in cancer patients – study protocol of an epidemiological multi-center study. *BMC Psychiatry*. 2012;12:70. doi: <https://doi.org/10.1186/1471-244X-12-70>.
7. Holland JC, Bultz BD. The NCCN Guideline for Distress Management: A Case for Making Distress the Sixth Vital Sign. *Journal of the National Comprehensive Cancer Network (JNCCN)*. 2007 Jan; 5 (1):1-5. doi: <https://doi.org/10.6004/jnccn.2007.0003>.
8. Neilson KA, Polland AC, Boonzaier AM, Corry J, Castle DJ, Mead CR, et al. Psychological Distress (depression and anxiety) in people with head and neck cancers. *Medical Journal of Australia*. 2010 Sep 6; 193(S5):S48-51. PMID: 21542446. doi: 10.5694/j.1326-5377.2010.tb03928.x.
9. Lydiatt WM, Moran J, Burke WJ. A Review of Depression in the Head and Neck Cancer Patient. *Clinical Advances in Hematology and Oncology*. 2009 Jun; 7(6):397-403. PMID: 19606075.
10. De Leeuw JRJ, De Graeff A, Ros WJG, Hordijk GJ, Blijham GH, Winnubst JAM. Negative and positive influences of social support on depression in patients with head and neck cancer: a prospective study. *Psychooncology*. 2000 Jan- Feb; 9 (1):20-28. PMID: 10668056. doi: [https://doi.org/10.1002/\(sici\)1099-1611\(200001/02\)9:1<20::aid-pon425>3.0.co;2-y](https://doi.org/10.1002/(sici)1099-1611(200001/02)9:1<20::aid-pon425>3.0.co;2-y).
11. Norton TR, Manne SL, Rubin S, Carlson J, Hernandez E, Edelson MI. Prevalence and Predictors of Psychological Distress Among Women With Ovarian Cancer. *Journal of Clinical Oncology*. 2004 Mar 1;22(5):919-926. PMID: 14990648. doi: 10.1200/JCO.2004.07.028.
12. Santre M, Rathod J, Maidapwad S. Prevalence of Emotional Distress in Cancer Patients. *IOSR Journal of Dental and Medical Sciences*. 2014 Jun;13 (6): 9-14.
13. Keller M, Sommerfeldt S, Fischer C, Knight L, Riesbeck M, Lowe B, et al. Recognition of distress and psychiatric morbidity in cancer patients: a multi-Method Approach. *Annals of Oncology*. 2004 Aug;15(8):1243-1249. PMID: 15277265. doi:10.1093/annonc/mdh318.
14. Tang MH, Castle DJ, Choong PFM. Identifying the Prevalence, Trajectory and Determinants of Psychological Distress in Extremity Sarcoma. *Sarcoma*. 2015 Feb 12. doi: 10.1155/2015/745163. PMID: 25767410. PMCID: PMC4342175.
15. Lima PM, Osório FL. Indicators of Psychiatric Disorders in Different Oncology Specialties: A Prevalence Study. *Journal of Oncology*. 2014 Apr 14. doi: 10.1155/2014/350262. PMID: 24829578. PMCID:PMC 4009332.
16. Zabora J, BrintzenhofeSzoc K, Jacobsen P, Curbow B, Piantadosi S, Hooker C. A New Psychosocial Screening Instrument for Use With Cancer Patients. *Psychosomatics*. 2001 May- Jun;42(3):241-246. PMID: 11351113. doi: 10.1176/appi.psy.42.3.241.
17. Roth AJ, Kornblith AB, Batel-Copel L, Peabody E, Scher HI, Holland JC. Rapid screening for psychologic distress in men with prostate carcinoma: a pilot study. *Cancer*. 1998 May 15;82(10):1904-8. PMID:9587123. doi: 10.1002/(sici)1097-0142(19980515)82:10<1904::aid-chcr13>3.0.co;2-x.
18. Pandey M, Dev N, Ramdas K, Krishnan R, Kumar V. Higher

REFERENCES (Continued)

- life in patients with head and neck cancer. *International Journal of Oral and Maxillofacial Surgery*. 2009 Sep;38(9):955-959. PMID:19446438. doi:10.1016/j.ijom.2009.04.004.
19. Riblet N, Skalla K, McClure A, Homa K, Luciano A, Davis TH. Addressing Distress in Patients With Head and Neck Cancers: A Mental Health Quality Improvement Project. *Journal of the National Comprehensive Cancer Network*. 2014 Jul;12(7):1005-1013. PMID:24994921. doi:10.6004/jnccn.2014.0097.
20. Krebber AMH, Jansen F, Cuijpers P, Leemans CR, Verdonck-de Leeuw IM. Screening for psychological distress in follow-up care to identify head and neck cancer patients with untreated distress. *Support Care Cancer*. 2016 Jun;24(6):2541-8. PMID: 26694718. PMID:PMC4846709. doi:10.1007/s00520-015-3053-6.
21. Maher NG, Britton B, Hoffman GR. Early Screening in Patients With Head and Neck Cancer Identified High Levels of Pain and Distress. *Journal of Oral and Maxillofacial Surgery*, 2013 Aug;71(8):1458-1464. PMID:23611602. doi:10.1016/j.joms.2013.02.009.
22. NCCN Guidelines. (2014, June 11). Retrieved May 11, 2016, from National Comprehensive Cancer Network: https://www.nccn.org/professionals/physician_gls/f_guidelines.asp#distress
23. Velikova G. Patient Benefits From Psychosocial Care: Screening for Distress and Models of Care. *Journal of Clinical Oncology*. 2010 Nov 20;28(33):4871-3. PMID: 20940195. doi: 10.1200/JCO.2010.310136.
24. Lee SJ, Katona LJ, De Bono SE, Lewis KL. Routine screening for psychological distress on an Australian inpatient haematology and oncology ward: impact on use of psychosocial services. *Medical Journal of Australia*. 2010 Sep 6;193(S5): S74-78. PMID: 21542451. doi:<https://doi.org/10.5694/j.1326-5377.2010.tb03933.x>.
25. Ging-Long W, Sheng-Hui H, An-Chen F, Chiu-Yuan C, Ju-Fang S, Yu-Ju L, et al. The HADS and the DT for screening psychosocial distress of cancer patients in Taiwan. *Psycho-Oncology*. 2011 Jun;20(6):639-646. PMID:21626611. doi:10.1002/pon.1952.
26. ORL R. Focus group discussion on reasons for referral and psychosocial support. 2016 April. Manila. (Indab AJ, Interviewer)
27. NCCN Guidelines. (2014, June 11). [Cited 2016 May 11]; Available from National Comprehensive Cancer Network: https://www.nccn.org/professionals/physician_gls/f_guidelines.asp#distress
28. Bocerean C, Dupret E. A validation study of the Hospital Anxiety and Depression Scale (HADS) in a large sample of French employees. *BMC Psychiatry*. Dec 16; 14:354. PMID:25511175. PMID: PMC4476305. doi:10.1186/s12888-014-0354-0.
29. De Guzman MLR. A Validation of the Hospital Anxiety and Depression Scale (HADS) in the Medically-Ill. *Acta Medica Philippina*. [Internet]. 2013 Sep; 47(3):1-10. doi: <https://doi.org/10/47895/amp.v47i3.1318>.
30. Abdul Ghaaliq Lalkhen, McCluskey A. Clinical tests: sensitivity and specificity. *Continuing Education in Anaesthesia, Critical Care & Pain*. 2008 Dec 1;8 (6): 221-223. doi:<https://doi.org/10.1093/bjaceaccp/mkn041>.
31. Florkowski CM. Sensitivity, Specificity, Receiver-Operating Characteristic (ROC) Curves. *Clin Biochem Rev*. 2008 Aug; 29(Suppl1): S83-87. PMID:18852864. PMID:PMC2556590.
32. Hajian-Tilaki K. Receiver Operating Characteristic (ROC) Curve Analysis for Medical Diagnostic Test Evaluation. *Caspian J Intern Med*. 2013 Spring;4(2): 627-635. PMID:24009950. PMID: PMC3755824.
33. Mandrekar JN. Receiver Operating Characteristic Curve in Diagnostic Test Assessment. *Journal of Thoracic Oncology*. 2010 Sep;5(9):1315-6. PMID: 20736804. doi:10.1097/JTO.0b013e3181ec173d.
34. Donovan K, Grassi L, McGinthy HL, Jacobsen PB. Validation of the Distress Thermometer worldwide: state of Science. *Psycho-Oncology*. 2014 Mar; 23(3): 241-250. doi: 10.1002/pon.3430.
35. Humphris GM, Ozakincid G. Psychological responses and support needs of patients following head and neck cancer. *International Journal of Surgery*. 2006; 4(1):37-44. PMID:17462312. doi: 10.1016/j.ijssu.2005.12.004.
36. Lee MS, Nelson AM, Thompson LMA, Donovan KA. Supportive care needs of oral cancer survivors: Prevalence and correlates. *Oral Oncology*. 2016 Feb; 53: 85-90. PMID:26684544. doi:10.1016/j.oraloncology.2015.11.007.