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PAPER

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Prevalence, correlates of depression, and its impact on quality of life of cancer patients attending a palliative care setting in South India

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Abstract

Objective: Depression is an easily treatable yet frequently underdiagnosed affliction in palliative population with deleterious implications on their quality of life. It has been studied poorly in developing countries like India.

Methods: A cross-sectional study was done with 234 consenting subjects attending a palliative care unit. Patient Health Questionnaire-9 (PHQ-9), World Health Organization Quality of Life (WHOQOL-BREF), and semi-structured proforma were used by trained nonmental health professional to collect data.

Results: The prevalence of major depression was 70%. Being a resident of nuclear family (p = .004), absence of insurance coverage (p = .01), presence of financial difficulties (p = .002), and absence of cancer recurrence (p = .001) were significantly associated with major depression in univariate analysis. In multivariate analysis, presence of financial difficulties (OR = 3.9; 95% CI, 2.00-7.61) and absence of health insurance (OR = 1.92; 95% CI, 1.02-3.7) were independently associated with major depression. The presence of depression showed significant negative correlation with physical health (p = .03), psychological health (p = .002), and environmental (p = .002) domains of the WHOQOL-BREF.

Conclusion: This study brings to the fore the high rates of depression and its negative impact on the quality of life of terminally ill cancer patients. An improvement in their quality of life requires measures to reduce the rate of underdiagnosed psychiatric morbidities, especially in those who are financially burdened and lack insurance coverage.

KEYWORDS

Cancer, Depression, Oncology, Palliative, Quality of life

1 | BACKGROUND

1.1 | Palliative care—Indian scenario

Palliative care is an approach that offers comprehensive supportive care to individuals whose disease has stopped responding to curative treatments.[1] The hospice and palliative care movement started in India around mid-1980s, and its growth has been relatively slow.[2] Its distribution is skewed to large cities/regional cancer centers, Kerala being an exception where services are more widespread lauding international attention.[3] According to WPCA report 2014, 69.31 to 145.73/100 000 adults needed palliative care for cancer in India.[4] The quality of death index measured the quality of palliative care available to adults across 40 countries in 2010 and 80 countries in 2015.

India was at the bottom of the list in 2010 Index but ranked at a slightly higher position of 51 in 2015 Index indicating a stronger government commitment.[5]

Psychological distress is common in terminally ill and encompasses a wide range of emotions from sadness to more complex psychological syndromes such as depression along with the broader psychological dimensions of suffering like demoralisation. It is often under-detected and undertreated with a huge impact on the individual and family. Screening tools for identifying key distress related symptoms may indicate the presence of common clinical syndromes. This has been proven to reduce the cost borne by the health care system and the suffering of cancer patients by recognizing those who would benefit from a more comprehensive assessment and management.[6]

1.2 | Depression in palliative care

The prevalence of depression has been reported to range from 7% to 58% in palliative care patients globally.[7-10] In India, the prevalence of depression among cancer patients in palliative care settings is 24.6%.[11]

Depression is misconceived to be inevitable in terminal illness and despite being treatable often remains undiagnosed mostly because of the difficulty in differentiating appropriate sadness from depression,[12] the overlap of physical symptoms of cancer with depressive symptoms, lack of specific training of oncology staff in recognizing depression, and reluctance of patients to disclose their feelings.[12] A study by Fulton et al reported one out of two patients had depression in their last interview before death[13] thereby reiterating the fact that depression in this vulnerable group largely remains untreated.[14] The obligation to identify depression in patients with terminal illness is quintessential not only because depression is a burden in its own right but also because it is associated with higher symptom burden,[15] prolonged hospital stays, reduced compliance with medical care,[16] desire for hastened death,[17] and higher mortality.[18]

1.3 | Quality of life in palliative setting

The term "quality of life" takes a different meaning in palliative care as either this population comprises "short survivors" for whom the best possible care is aimed at a "good death" or "medium/long survivors" who are burdened with illness morbidity such as pain and disability.[19] Nevertheless, quality of life is an important goal in oncologic services. Some of the factors that influence quality of life are physical symptoms such as pain,[20] psychiatric morbidity,[21] early integration of palliative care with oncologic care,[22] psychosocial support, marital status, caregivers education cum employment status,[23] and financial burden due to cancer care costs.[24]

1.4 | Rationale for the study

As emphasized above, depression has a negative impact on the quality of life of cancer patients receiving palliative care. Understanding the magnitude of this psychiatric morbidity and factors influencing it is imperative to improve their quality of life especially in developing countries like India where resources are limited.

The aim of this study was to assess the prevalence of depression, its correlates, and impact on quality of life of individuals in a palliative care setting in Tamil Nadu.

2 | METHODS

2.1 | Study setting

This was a cross-sectional study on consecutive, consenting individuals with advanced stages of cancer unamenable to curative treatment who were attending the palliative care clinic for availing the end of life care services at the International Cancer Centre, Neyoor. The International Cancer Centre was started in 1963 by Dr. Jenkins, and a cobalt unit was set up in 1965. Neyyoor hospital has the distinction of being the first hospital to introduce radiation for cancer treatment in South India. Today, this center caters to the needs of all patients in South Tamil Nadu with a well-equipped dual energy linear accelerator providing comprehensive treatment to cancer patients. There are day care chemotherapy ward, brachytherapy Unit, X-ray, and ultrasound scan facilities available.[25] Around 800 individuals were enrolled in their palliative program at the time of the study.

Individuals who were less than 18 years of age, medically unstable, had sensory disabilities, or a history of major psychiatric illness were excluded.

2.2 | Study instruments

A semi-structured proforma was designed to collect data on sociodemographic variables including patients subjective response to presence of financial difficulties (yes/no), availability of insurance that aid their medical treatment (available/not available), and clinical variables such as location of cancer, duration since diagnosis, history of recurrence, medical comorbidities (like diabetes, hypertension, coronary artery disease, thyroid disorders, epilepsy, or tuberculosis, for example), and past or family history of psychiatric illness. Treatment details were incompletely available at the time of data collection for a few patients, hence this variable was exempted from analysis.

Patient Health Questionnaire-9 (PHQ 9) is the 9-item depression module from the full PHQ and is widely used to screen for depression and grade its severity. It was chosen because it is standardized, easily available, and applicable. The sum score ranges from 0 to 27 as each question has three responses ranging from 0 (not at all) to 3 (nearly every day).[26] Kroenke et al noted a score of 10 or more had a sensitivity of 88% and specificity of 88% for major depression.[27] This instrument has been used to detect depression in the Indian cancer population.[28]

Quality of life was assessed by World Health Organization Quality of Life (WHOQOL-BREF). The WHOQOL-BREF is the abbreviated 26-item version of WHOQOL-100 assessment with items across

four domains, namely, physical, psychological, social relationships, and environmental health. The responses are on a Likert scale of 0 to 5.[29] It has been used in cancer patients.[30]

The instruments were translated from English into the local language Tamil, by two language experts not related to this study and later back-translated into English by two independent language experts, not acquainted with the original versions. The back-translation was subsequently compared with the original version by a psychiatrist for conceptual equivalence of the items and pretested on 10 healthy volunteers. The personnel involved in data collection were trained to use the study instruments in a 2-day training program by psychiatry faculty experienced in training nonmental health professionals in collecting data for research purposes within community settings,[31] at the Department of Psychiatry, Dr. SMCSI Medical College.

2.3 | Procedure for data collection

The study was commenced after obtaining consent from the Institutional Ethics Committee of Dr. SMCSI Medical College (No. SMCSIMCH/EC (PHARM)30/2016). The subjects were interviewed ensuring confidentiality and privacy after obtaining written informed consent or thumb impression where necessary. Those individuals who were detected to have possible depression were informed about the implications and given the option of referral for further management to the psychiatry department, Dr. SMCSI Medical College.

2.4 | Sample size

The estimated prevalence of depression ranges from 7% to 49% in palliative care settings.[7] Assuming an alpha error of .05, power at 80%, and estimating the prevalence of depression to be approximately 30% with a precision of .06, the sample size estimation was 233.

2.5 | Statistical analysis

Mean, standard deviation, and range were employed to describe continuous variables, while frequency distributions were obtained for categorical variables. The Chi-square and Fisher's test were used to assess the significance of associations. Multivariate analysis was performed using the logistic regression model. Variables with significance $p < .05$ on univariate analysis were employed in the multivariate model.

3 | RESULTS

Two hundred thirty-four consenting subjects who attended the palliative program during the study period were included in the study.

The mean age was 57.36 years (+/−10.8). Most of the participants were females (59.8%), literate (71.8%), unemployed (68.8%), living in nuclear families (85%), and without significant medical comorbidities (57.7%) (Table 1).

TABLE 1 Baseline characteristics of palliative care patients (n = 234)

Socio-demographic Variables		n	%
Age (years)	18-45	32	13.7
	46-60	102	43.6
	>61	100	42.7
Gender	Female	140	59.8
Religion	Hindu	85	36.3
	Christian	141	60.3
	Muslim	8	3.4
Education	Literate	168	71.8
Occupation	Unemployed	161	68.8
Socioeconomic status	Upper/middle SES	20	8.5
	Middle/lower middle SES	54	23.1
	Lower/upper lower SES	160	68.4
Insurance	Not available	150	64.1
Financial difficulties	Yes	154	66.1
Family type	Nuclear	199	85
Residing with	Spouse	119	50.8
Quality of marital relationship	Dissatisfied	73	31.2
Patients were family breadwinners	No	161	69.1
Clinical Variables			
Comorbidity	Nil significant	135	57.7
Location of cancer	Oro-pharyngeal	83	35.5
	Breast	67	28.6
	Ovarian	17	7.3
	Gastric	17	7.3
	Laryngeal	16	6.8
	Prostate	8	3.4
	Endometrial	4	1.7
	Pancreatic	4	1.7
	Colon	3	1.3
	Malignant phaeochromocytoma	2	0.9
	Bladder	2	0.9
	Non-Hodgkins lymphoma	1	0.4
	Multiple myeloma	1	0.4
	Malignant melanoma	1	0.4
Duration since diagnosis	<1 yr	145	62
H/O cancer recurrence	No	204	87.6

One hundred sixty-two patients reported uncontrolled pain, 23 patients reported absence of uncontrolled pain, and data were missing from 50 patients; hence, this variable was exempt from analysis.

The prevalence of major depression using PHQ-9 (>10 score) in the study population was 70%. Twenty percent patients scored in mild depression range (5-9 total score) on PHQ-9. The presence of major depression was significantly associated with being a resident of nuclear family ($p = .004$), unavailability of insurance ($p = .01$), presence of financial difficulties ($p = .002$), and in those without a history of cancer recurrence ($p = .001$). However, variables such as occupation, socioeconomic status, quality of marital relationship, functional status since diagnosis, presence of medical comorbidities, location of cancer,

and duration since diagnosis did not show any significant association with the presence of major depression (Table 2).

Presence of financial difficulties (OR = 3.9; 95% CI, 2.00-7.61) and absence of health insurance (OR = 1.92 95% CI, 1.02-3.7) were significantly associated with major depression after logistic regression of variables significantly associated with major depression on univariate analysis (Table 3).

The presence of depression (PHQ-9) showed significant negative correlation with physical health (p = .03), psychological health (p = .002), and environmental (p = .002) domains of the WHOQOL-BREF (Table 4).

4 | DISCUSSION

4.1 | Prevalence of major depression

The prevalence of major depression using PHQ_9 (>10 score) in this study was 70%, which is higher than reported in previous studies.[7-9] This could be postulated to be due to the higher baseline prevalence of depression in this medium human development index (HDI) country compared to developed settings.[32] Further, this may be possibly compounded by the relatively poor social and health support systems available to individuals in palliative settings in India,[2] compared to the better resourced western settings. However, a detailed evaluation of these resources was not carried in this investigation. Heterogeneity in screening instruments used in previous studies could explain the difference to some extent as well. The effect of physical symptoms such as pain and treatment side effects contributing to emotional distress were not evaluated comprehensively in this study.

In our study, participants without a history of recurrence were found to be significantly more depressed, which is in stark contradiction to previous studies reporting link between cancer recurrence and depression.[33]

Most of the participants were from lower socioeconomic status (68.4%), 68.8% were unemployed, and 66.1% had financial difficulties. Presence of financial difficulties was significantly associated with major depression after multiple logistic regression, which is in congruence with previous studies.[34,35] These studies also reported financial distress to be perceived as being more severe than physical/emotional distress. Financial distress has been reported to influence quality of life as well, but this was not explored in this study. Also, 64.1% of the study population did not have insurance coverage, which could compound the financial distress and showed significant association with major depression after multivariate analysis. Khosla et al too reported medical insurance does not play a major role in palliative care provision in India.[2] Prinja et al reported that most of the health expenditure was drawn from out-of-pocket (OOP) at the time of service utilization deleteriously affecting the household.[36] More than three quarters of cancer expenditure in India are OOP payments impoverishing the patient and their family.[37] The need for major policy changes and health economics in a developing country like India could not be emphasized more. Being a resident of a nuclear family seemed to be significantly associated with major depression in our study. We can only speculate this to be due to poor social and economic support compared to those with bigger families or psychiatric morbidity/caregiver burden in a key family member influencing patient's mental health.

TABLE 2 Clinical variables significantly associated with major depression (PHQ>10) on univariate analysis (n = 234)

Variable		Major Depression		χ^2 test	P value
		Present (n)	Absent (n)		
Insurance	Available	66	17	5.76	.01
	Not available	96	53		
Family type	Nuclear	132	66	6.79	.004
	Joint/Living alone	31	4		
Financial difficulties	Yes	123	31	21.23	.002
	No	40	39		
H/O cancer recurrence	Yes	9	12	8.29	.001
	No	149	55		

TABLE 3 Multivariate model for depression in palliative care patients

Variable	df	Odds Ratio	95% CI		Sig
			Lower	Upper	
Presence of financial difficulties	1	3.90	2.00	7.61	.001
Absence of health insurance	1	1.92	1.02	3.70	.04

TABLE 4 Correlation between depression (PHQ 9) and quality of life (WHOQOL-BREF)

		WHOQOLBREF -Domain 1 (Physical health)	WHOQOLBREF-Domain 2 (Psychological health)	WHOQOLBREF-Domain 3 (Social relationships)	WHOQOLBREF -Domain 4 (Environmental health)
PHQ-9 total score	Pearson correlation	−.14	−.31	−.017	−.317
	Sig (two tailed)	.03	.002	.79	.002

Abbreviations: PHQ 9, Patient Health Questionnaire-9; WHOQOL-BREF, World Health Organization Quality of Life-BREF.

4.2 | Impact of depression on quality of life

Quality of life has emerged as a meaningful measure of outcome in health care. This study showed significant negative correlation between major depression and quality of life domains—physical well-being, psychological well-being, and environmental health, demonstrating the profound effect of depression on multiple spheres of the individual's life. This finding is in keeping with results from previous studies demonstrating the negative effect of depression on quality of life measures.[38,39]

The appraisal of terminal care services is nothing but a contribution to understand and offer better help to this vulnerable population at best. As Cassem notes, although massive bleeding is an "appropriate" sequela of a ruptured spleen, it is unthinkable to just stand by and allow a patient to bleed to death. Likewise, it is never acceptable to let cancer patients to suffer from unaddressed distress.

4.3 | Study limitation

A limitation of this study was the cross-sectional design, which does not allow any interpretation about causality. The use of self-reported measure instead of gold standard clinical interview is a limitation, but PHQ_9 corresponds to structured clinical interview criteria used to diagnose major depressive disorder (MDD). Although not employed in the present study, the use of qualitative research methods/mixed methods to collect data in future is suggested to get a better picture of the topic in hand. PHQ-9 scores might have been influenced by somatic symptoms of cancer, which is a limitation. While some of the factors influencing depression and quality of life identified in literature were included in the study, a few like pain, specific modes of therapy, spirituality, for example, were not included in this study. The study was not powered to detect the association between depression and certain associated factors, possibly explaining some of the negative associations.

5 | CONCLUSION

5.1 | Clinical implications

Systematic screening of cancer patients for psychological distress is most likely to ensure equal access to mental health services, rather than when the health care system relies solely on just physician or patient-initiated referrals. The widely acknowledged shortage of mental health professional staff especially in developing countries is a hurdle in implementing such a screening on regular basis. This stresses the need for use of screening tools by palliative care service providers on a routine basis considering such a high prevalence of psychiatric morbidity, particularly in the milieu of health providers typically feeling that "sadness" and despair are only understandable reactions and do not present a potentially modifiable clinical entity. A meta-analysis by Mitchell et al suggested that simple verbal questions such as "are you depressed" and "have you lost interest" should be considered as methods of exclusion[40] by busy practitioners at least as an attempt to identify those in need of further assessment instead of assuming inevitability. Although this study has focused on depression, adjustment disorder is highly prevalent in cancer patients, but literature suggests most existing scales have little efficacy in detecting them, but addressing it along with other forms of emotional distress is essential.

This study also highlighted the need to consider broader health policies aimed at improving the quality of life of the financially burdened and uninsured cancer patients who are more likely to suffer from psychiatric morbidity.

In conclusion, this study showed the high rates of depression in individuals with cancer in this largely rural, unemployed South Indian population. Quality of life was negatively influenced by depression in this study population. It also brought out the negative impact of financial difficulties and the poor health coverage available to patients in low middle-income countries who are already struggling with the vicissitudes of cancer.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

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REFERENCES

1. Kar SS, Subitha L, Iswarya S. Palliative care in India: situation assessment and future scope. *Indian J Cancer*. Medknow Publications and Media Pvt. Ltd. 2015;52(1):99-101.
2. Khosla D, Patel FD, Sharma SC. Palliative care in India: current progress and future needs. Indian. *J Palliat Care*. Wolters Kluwer—Medknow Publications. 2012;18(3):149-154.
3. McDermott E, Selman L, Wright M, Clark D. Hospice and palliative care development in India: a multimethod review of services and experiences. *J Pain Symptom Manage*. 2008 Jun;35(6):583-593.
4. WHO Global Atlas of Palliative Care at the End of Life—WPCA report. 2014.
5. The Economist Intelligence Unit. The 2015 quality of death index ranking palliative care across the world. 2015.
6. Kelly B, McClement S, Chochinov HM. Measurement of psychological distress in palliative care. *Palliat Med*. 2006;20(8):779-789.
7. Walker J, Holm Hansen C, Martin P, et al. Prevalence of depression in adults with cancer: a systematic review. *Ann Oncol Off J Eur Soc Med Oncol*. 2013;24(4):895-900.
8. Massie MJ. Prevalence of depression in patients with cancer. *J Natl Cancer Inst Monogr*. 2004;2004(32):57-71.
9. Krebber AMH, Buffart LM, Kleijn G, et al. Prevalence of depression in cancer patients: a meta-analysis of diagnostic interviews and self-report instruments. *Psychooncology*. Wiley-Blackwell. 2014;23(2):121-130.
10. Mitchell AJ, Chan M, Bhatti H, et al. Prevalence of depression, anxiety, and adjustment disorder in oncological, haematological, and palliative-

care settings: a meta-analysis of 94 interview-based studies. *Lancet Oncol*. Elsevier. 2011;12(2):160-174.

11. World Health Organization 2017, Depression in India-Let's talk. 2017. [Internet]. Available from: http://www.searo.who.int/india/depression_in_india.pdf
12. Lloyd-Williams M. Screening for depression in palliative care patients: a review. *Eur J Cancer Care (Engl)*. Wiley/Blackwell (10.1111). 2001; 10(1):31-35.
13. Fulton CL. The physical and psychological symptoms experienced by patients with metastatic breast cancer before death. *Eur J Cancer Care (Engl)*. Wiley/Blackwell (10.1111). 1997;6(4):262-266.
14. Walker J, Hansen CH, Martin P, et al. Prevalence, associations, and adequacy of treatment of major depression in patients with cancer: a cross-sectional analysis of routinely collected clinical data. *Lancet Psychiatry*. Elsevier. 2014;1(5):343-350.
15. Grotmol KS, Lie HC, Loge JH, et al. Patients with advanced cancer and depression report a significantly higher symptom burden than non-depressed patients. *Palliat Support Care*. 2018;10:1-7.
16. Spiegel D, Giese-Davis J. Depression and cancer: mechanisms and disease progression. *Biol Psychiatry*. Elsevier. 2003;54(3):269-282.
17. Breitbart W, Rosenfeld B, Pessin H, et al. Depression, hopelessness, and desire for hastened death in terminally Ill patients with cancer. *JAMA American Medical Association*. 2000;284(22):2907-2911.
18. Lloyd-Williams M, Shiels C, Taylor F, Dennis M. Depression—an independent predictor of early death in patients with advanced cancer. *J Affect Disord*. 2009;113(1–2):127-132.
19. Paci E, Miccinesi G, Toscani F, et al. Quality of life assessment and outcome of palliative care. *J Pain Symptom Manage*. Elsevier. 2001;21(3): 179-188.
20. Tavoli A, Montazeri A, Roshan R, Tavoli Z, Melyani M. Depression and quality of life in cancer patients with and without pain: the role of pain beliefs. *BMC Cancer*. BioMed Central. 2008;8(1):177.
21. Frick E, Tyroller M, Panzer M. Anxiety, depression and quality of life of cancer patients undergoing radiation therapy: a cross-sectional study in a community hospital outpatient centre. *Eur J Cancer Care (Engl)*. 2007;16(2):130-136.
22. Temel JS, Greer JA, Muzikansky A, et al. Early palliative care for patients with metastatic non–small-cell lung cancer. *N Engl J Med*. Massachusetts Medical Society. 2010;363(8):733-742.
23. Awadalla AW, Ohaeri JU, Gholoum A, Khalid AO, Hamad HM, Jacob A. Factors associated with quality of life of outpatients with breast cancer and gynecologic cancers and their family caregivers: a controlled study. *BMC Cancer*. BioMed Central. 2007;7(1):102.
24. Fenn KM, Evans SB, McCorkle R, et al. Impact of financial burden of cancer on survivors' quality of life. *J Oncol Pract*. American Society of Clinical Oncology Alexandria, VA. 2014;10(5):332-338.
25. CSI Medical Mission, Kanyakumari [Internet]. [cited 2018 Jul 24]. Available from: http://csimedicalmission.com/Cancer-Care.aspx
26. Kroenke K, Spitzer RL, Williams JBW. The PHQ-9: validity of a brief depression severity measure. *J Gen Intern Med*. 2001;16(9):606-613.
27. Kroenke K, Spitzer RL. The PHQ-9: a new depression diagnostic and severity measure. *Psychiatr Ann*. 2002;32(9):509-515.
28. Shankar A, Dracham C, Ghoshal S, Grover S. Prevalence of depression and anxiety disorder in cancer patients: an institutional experience. *Indian J Cancer*. Medknow Publications and Media Pvt. Ltd. 2016; 53(3):432-434.
29. Skevington SM, Lotfy M, O'Connell KA. The World Health Organization's WHOQOL-BREF quality of life assessment: psychometric properties and results of the international field trial. A Report from the WHOQOL Group. *Qual Life Res*. Kluwer Academic Publishers. 2004;13(2):299-310.
30. Arunachalam D, Thirumoorthy A, Thennarasu Devi S. Quality of life in cancer patients with disfigurement due to cancer and its treatments. *Indian J Palliat Care*. Medknow Publications and Media Pvt. Ltd. 2011;17(3):184-190.
31. George C, Kanakamma LG, John J, Sunny G, Cohen A, De Silva MJ. Post-tsunami mental health: a cross-sectional survey of the predictors of common mental disorders in South India 9-11 months after the 2004 Tsunami. *Asia Pac Psychiatry*. Wiley/Blackwell (10.1111). 2012; 4(2):104-112.
32. Lim GY, Tam WW, Lu Y, Ho CS, Zhang MW, Ho RC. Prevalence of depression in the community from 30 Countries between 1994 and 2014. *Sci Rep*. Nature Publishing Group. 2018;8(1):2861.
33. Okamura H, Watanabe T, Narabayashi M, et al. Psychological distress following first recurrence of disease in patients with breast cancer: prevalence and risk factors. *Breast Cancer Res Treat*. Kluwer Academic Publishers. 2000;61(2):145-150.
34. Poongothai S, Pradeepa R, Ganesan A, Mohan V. Prevalence of depression in a large urban south indian population—THE Chennai Urban Rural Epidemiology Study (Cures – 70). Myer L, editor. *PLoS ONE*. Public Library of Science. 2009;4(9):e7185.
35. Delgado-Guay M, Ferrer J, Rieber AG, et al. Financial distress and its associations with physical and emotional symptoms and quality of life among advanced cancer patients. *Oncologist*. AlphaMed Press. 2015; 20(9):1092-1098.
36. Prinja S, Kaur M, Kumar R. Universal health insurance in India: ensuring equity, efficiency, and quality. *Indian J Community Med*. Medknow Publications and Media Pvt. Ltd. 2012;37(3):142-149.
37. Pramesh CS, Badwe RA, Borthakur BB, et al. Delivery of affordable and equitable cancer care in India. *Lancet Oncol*. 2014;15(6):e223-e233.
38. Smith EM, Gomm SA, Dickens CM. Assessing the independent contribution to quality of life from anxiety and depression in patients with advanced cancer. *Palliat Med*. 2003;17(6):509-513.
39. Grassi L, Indelli M, Marzola M, et al. Depressive symptoms and quality of life in home-care-assisted cancer patients. *J Pain Symptom Manage*. 1996;12(5):300-307.
40. Mitchell AJ. Are one or two simple questions sufficient to detect depression in cancer and palliative care? A Bayesian meta-analysis. *Br J Cancer*. Nature Publishing Group. 2008;98(12):1934-1943.

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