Financial Distress, Use of Cost-Coping Strategies, and Adherence to Prescription Medication Among Patients With Cancer

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Abstract

Purpose: The relationship between prescription medication adherence and financial burden is understudied, particularly in patients seeking financial assistance.

Methods: We conducted a cross-sectional survey to examine the association between patient-reported prescription medication nonadherence and financial distress. Eligible patients were adults receiving treatment for solid malignancies enrolled between June 2010 and May 2011 from the HealthWell Foundation, a national copay assistance program. Nonadherence was defined as taking less medication than prescribed because of cost, not filling or partially filling a prescription because of cost, or taking medications prescribed for others. Logistic regression assessed associations between medication nonadherence and patient-reported, subjective financial distress.

Results: Among 164 participants, 45% reported cost-related medication nonadherence. Four percent took medica-

tions prescribed for another person, 22% took less medication than prescribed, 25% filled a partial prescription, and 27% did not fill a prescription, all as a result of cost. Nonadherent participants were more likely than adherent participants to reduce spending on basics like food and clothing to pay for medication ($P = .01$), and borrow and/or use credit to pay for medications ($P < .01$). In adjusted analyses, financial distress did not change odds of nonadherence (odds ratio [OR] = 1.60; 95% CI, 0.71 to 3.60). Having a prescription drug plan (OR = 0.27; 95% CI, 0.09 to 0.83) and older age (OR = 0.48; 95% CI, 0.27 to 0.85) decreased odds of nonadherence. Being unemployed increased odds of nonadherence (OR = 6.28; 95% CI, 1.60 to 24.64).

Conclusions: Cost-related medication nonadherence was prevalent among cancer patients who sought financial assistance. Further investigation is needed to understand predictors of prescription medication adherence, a key component of quality care.

Introduction

In the United States, cancer treatment is expensive, and costs are rising.^{1,2} Insurers are passing along more of these costs to patients in the form of cost sharing.^{3,4} As their out-of-pocket costs increase,⁵ more insured patients are seeking financial assistance,⁶ and as of 2011, approximately 20% of insured US adults were considered underinsured.⁷ Little is known about how this growing population of underinsured patients copes with the financial burden of care or about the quality of care delivered to patients who apply for financial assistance.

In general, high out-of-pocket costs can affect the cancer treatment quality, especially prescription medication adherence. For example, patients with breast cancer with higher out-of-pocket copayments for their aromatase inhibitors are more likely to be nonadherent with those drugs than patients with lower drug copayments.⁸ Patients enrolled in insurance plans that require higher cost sharing are at greater risk of abandoning their oral chemotherapy prescriptions,⁹ which may lead to increased mortality.¹⁰ Although the association between higher costs and nonadherence is well studied, relatively little is known about the behaviors of underinsured patients. We studied patients with cancer who applied for financial assistance to pay

their health care bills. Our objectives were to (1) identify characteristics of patients with cancer at risk for cost-related prescription medication nonadherence, and (2) describe differences between how adherent and nonadherent patients cope with prescription medication costs.

Methods

Study Design

This was an observational, cross-sectional survey assessing patient-reported prescription medication adherence, subjective financial burden, and use of financial coping strategies. The survey instrument was developed and pilot tested at the Duke Cancer Institute (Durham, NC) and was self-administered online or on paper.

Participants

Participants were enrolled nationally by phone or e-mail via referral from the HealthWell Foundation, a national 501(c)(3) nonprofit organization that assists patients with copayments, coinsurance, and premium payments. When participants requested financial assistance from the HealthWell Foundation,

staff asked if they were interested in participating in research. Interested participants were referred to the Duke research team. Eligible patients were 21 years or older, had a solid tumor malignancy, were receiving chemotherapy or hormonal therapy, and were enrolled between June 2010 and May 2011. The Duke University Health System Institutional Review Board approved this study.

Measures

The outcome variable was prescription medication nonadherence, defined as (1) taking medications prescribed for another person, (2) taking less than the prescribed amount of a medication to save money, (3) filling only part of a prescription because it cost too much, or (4) not filling a prescription because it cost too much. Because our focus was on patient-reported measures of adherence, we did not review medication refill rates. No distinction was made between cancer treatment–related versus other prescription drugs.

The primary predictor variable was subjective financial distress as a result of cancer treatment, measured on a five-point Likert scale ranging from “not a financial burden at all” to “catastrophic financial burden.” Other predictors included sociodemographic measures such as age and employment status, financial distress, and having a prescription drug plan.

We also considered cost-coping strategies other than medication nonadherence. These strategies varied in terms of lifestyle impact, ranging from relatively minor strategies like modifying the way prescriptions were obtained (ie, “shopped around at pharmacies to get the lowest price”) to more extensive lifestyle-altering strategies (ie, “reduced spending on basics like food or clothing to pay for medicine”). Questions were adapted from Schrag et al.¹¹

Statistical Analyses

Descriptive statistics summarized participants’ sociodemographic characteristics, financial burden, disease and treatment characteristics, and use of cost-coping strategies. Logistic regression examined patient characteristics associated with nonadherence. Because financial burden was the primary exposure of interest, the final model was anchored on subjective financial distress. Other covariates were identified through forward selection, requiring a *P* value < .05 to enter the model.

Results

Participant Characteristics

Of 546 eligible participants, 164 who reported medication adherence information were the focus of this analysis. Of particular note, 78% had prescription medication coverage, and 47% reported significant or catastrophic financial distress. Approximately 74% of nonadherent patients and 81% of adherent patients had prescription drug coverage. Table 1 describes patient characteristics.

Nonadherence

Forty-five percent (*n* = 74) of study participants were nonadherent with medications as a result of cost: 4% (*n* = 7) reported

Table 1. Participant Characteristics (N = 164)

Characteristic	Nonadherent (<i>n</i> = 74; 45.1%)		Adherent (<i>n</i> = 90; 54.9%)	
	No.	%	No.	%
Female sex	68	91.9	89	98.9
Age, years				
Mean		63		70
SD		10.2		8.8
Marital status				
Married/living with partner	38	51.3	38	42.2
Widowed	11	14.9	15	16.7
Divorced/separated	15	20.3	25	27.8
Never married/single	10	13.5	10	11.1
Prefer not to answer	0	0.0	2	2.2
Race				
White	60	82.2	76	85.4
African American	11	15.1	6	6.7
Other minority	2	2.7	5	5.6
Prefer not to answer	0	0.0	2	2.3
Annual household income, \$				
< 20,000	30	40.5	27	30.7
20,000 to 59,999	35	47.3	53	60.2
> 60,000	1	1.3	1	1.1
Prefer not to answer	7	9.5	7	8.0
Education				
Less than high school	5	6.8	5	5.6
High school	34	45.9	52	57.8
Associates or College	32	43.2	25	27.8
Postgraduate	2	2.7	5	5.6
Prefer not to answer	1	1.4	2	2.3
Employment status				
Employed part- or full-time	13	17.6	18	20.0
Unemployed	21	28.4	4	4.4
Retired	35	47.3	65	72.2
Prefer not to answer	0	0.0	1	1.1
Has prescription drug coverage	55	74.3	73	81.1
Health insurance type				
Medicare/Medicaid	50	67.6	69	76.7
Through employer	14	18.9	13	14.4
Purchased personally	15	20.3	17	18.9
Primary cancer site				
Breast	61	82.4	79	87.8
Colorectal	4	5.4	3	3.3
Other primary	9	12.1	8	8.9
Duration of chemotherapy				
At least 1 month, but < 6 months	12	16.2	11	12.2
At least 6 months, but < 12 months	13	17.6	10	11.1
≥ 12 months	49	66.2	69	76.7

NOTE. Not all variables have the same total as a result of missing responses. Abbreviation: SD, standard deviation.

Table 2. Use of Cost-Coping Strategies Among Adherent and Nonadherent Patients (N = 164)

Behavior and Strategy	Nonadherent (n = 74)		Adherent (n = 90)		P
	No.	%	No.	%	
Nonadherent behaviors					
Took medications prescribed for another person	7	4	–	–	–
Took less than the prescribed amount to save money	36	22	–	–	–
Filled only part of a prescription to save money	41	25	–	–	–
Did not fill a prescription to save money	44	27	–	–	–
Cost-coping strategies					
Asked your doctor for a less expensive medicine	51	68.9	36	40.0	< .01
Reduced spending on basics like food or clothing in order to pay for a medicine	49	66.2	42	46.7	.01
Purchased an over-the-counter product to replace a more costly prescription drug	19	25.7	5	5.6	< .01
Shopped around at pharmacies to get a medication at lowest price	43	58.1	44	48.9	.24
Borrowed money or used credit to pay for your medicines	50	67.6	36	40.0	< .01
Obtained prescription medication samples from your doctor	51	68.9	51	56.7	.11

Table 3. Multivariable Logistic Regression Results Depicting the Association Between Prescription Medication Nonadherence and Financial Distress (n = 137)

Variable	Odds Ratio	95% CI	P
Age (in 10-year increments)	0.48	0.27 to 0.85	.01*
Having a prescription drug plan	0.27	0.09 to 0.83	.02*
Employed (referent)			
Unemployed	6.28	1.60 to 24.64	.01*
Retired	1.70	0.57 to 5.10	.34
Financial distress	1.60	0.71 to 3.60	.26

* Indicates statistical significance at an alpha level of .05.

taking medications prescribed for another person, 22% (n = 36) took less than the prescribed amount of medication to save money, 25% (n = 41) filled only part of a prescription to save money, and 27% (n = 44) did not fill a prescription to save money. Overall, 36% (n = 62) used at least two of these coping strategies (Table 2).

In adjusted analysis, having a prescription drug plan (odds ratio [OR] = 0.27; 95% CI, 0.09 to 0.83; $P = .02$) and older age (OR = 0.48; 95% CI, 0.27 to 0.85; $P = .01$) were protective against nonadherence (Table 3). Unemployment was associated with increased odds of nonadherence (OR = 6.28; 95% CI, 1.60 to 24.64; $P = .01$). Although statistically significant when considered in isolation, in adjusted analysis, high subjective financial distress was not associated with medication nonadherence in (OR = 1.60; 95% CI, 0.71 to 3.60; $P = .26$; Table 3).

Coping Strategies

Adherent and nonadherent patients differed in use of coping strategies to help defray costs of care (Table 2). Nonadherent patients were more likely to ask their doctor for a less expensive medicine than initially prescribed (69% v 40%; $P < .01$), to reduce spending on basics like food or clothing to pay for med-

icine (66% v 47%; $P = .01$), to purchase an over-the-counter product to replace costlier prescription drugs (26% v 6%; $P < .01$), and to borrow money or use credit to pay for medicines (68% v 40%; $P < .01$).

Discussion

Nearly half of study participants were nonadherent to medications as a result of cost, and many were nonadherent in multiple ways. Nonadherent patients followed different cost-coping strategies, for example, trying to find less expensive medications, borrowing money to pay for medications, and otherwise reducing spending. We found that nonadherent participants were more likely to be young, unemployed, and without a prescription medication insurance plan. This is a group that is already financially vulnerable and, in addition, may be at greater risk for cost-related prescription medication nonadherence, negatively affecting the quality of their cancer care.

In isolation, subjective financial distress was associated with prescription medication nonadherence. However, after controlling for other patient characteristics in multivariable analysis, the role of financial distress as a predictor of nonadherence was decidedly less clear. One possible explanation is that unemployment, lack of insurance, and subjective financial distress are measures of a similar underlying construct (ie, financial difficulties), thus making it difficult to separate the impact of subjective and objective elements.

Patients at risk for nonadherence adopt strategies to cope with prescription medication costs. Nonadherent patients were more likely to ask their doctor for a less expensive medication than prescribed and were more likely to purchase an over-the-counter product to replace a more costly prescription medication. Although some patients might reach out for assistance by communicating with their providers about their cost burden, our data do not address whether discussions about cost reduced out-of-pocket costs, or whether treatment decision making was affected by costs. The financial drain associated with obtaining prescription medications may have far-reaching ramifications on patients' lives. Developing patient-level predictors of non-

adherence will play a critical role in intervening on nonadherence, a barrier to the highest quality care.

Our findings are limited by a relatively low response rate, skewed sex and disease distribution, small sample size, and reliance on a single source for patients. Because all study participants requested financial assistance, our population is more likely to be representative of patients with cancer who seek financial assistance rather than patients with cancer in general. Nevertheless, at least 20% of the US population is underinsured, and this group merits further study. Because sex may influence medication adherence, future studies on financial distress should include a more balanced distribution of men and women. Our analysis focused on patients receiving financial assistance only from the HealthWell Foundation, but patients also receive financial support from the pharmaceutical industry.¹² Felder et al identified that pharmaceutical patient assistance programs provided financial support for approximately one third of the most commonly used cancer-related outpatient therapies. Moreover, they identified that among patients with cancer in an outpatient setting, being less than 65 years old, being indigent, and having no health insurance were strong predictors of participation in a pharmaceutical patient assistance program.¹² Although this work lays an important foundation, future studies could further evaluate the role and impact of the pharmaceutical industry as a source of financial support.

Because nonadherent patients tended to alter their lifestyles in order to defray the costs of prescription medication, nonadherence might serve as a signal for more pervasive difficulties with paying for health care. Patients experience physical toxicity as a result of their cancer treatment, but these and other data suggest patients are also at risk of experiencing “financial toxicity” that can negatively affect patients’ lives and diminish the quality of their care. Future research should investigate whether screening for adherence and financial toxicity might improve patient outcomes.

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