Barriers to Physical Activity in Cancer Patients

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Introduction:

The American College of Sports Medicine exercise guidelines for cancer survivors encourage a combination of 150 minutes of moderate-intensity aerobic activity and two to three weekly sessions of strength training. Barriers to these guidelines exists for the majority of the population while cancer survivors face more symptoms of fatigue and side effects from treatments.

Methods:

After obtaining IRB approval, 200 patients were enrolled in the outpatient supportive care and rehabilitation clinic. Patients were asked to complete surveys reporting their physical activity using the Stanford Patient Education Research Center Exercise Behaviors Survey, their barriers to physical activity with a barrier scale, and their symptom assessment using the ESAS-FS.

Results:

In all patients, those who adhered to the physical activity guideline of >150 minutes had less barriers to physical activity, 2.4 versus 4.2 barriers, respectively (p<0.0001). Females were less likely to adhere to recommended guideline of 150 minutes a week of physical activity (p=0.03). Patients experiencing a lack of interest and lack of self-discipline were more likely to not achieve the recommended 150 minutes of physical activity. Patients with symptoms of pain or fatigue were significantly less likely to adhere to the guidelines (p=0.007 and p=0.005).

		All Patients N(%)	Consult N(%)	Follow up N(%)			All Patients N(%)
Gender	Female	110(55%)	56(56%)	54(54%)	Gender	Female	110(55%)
Ethnicity	White	156(78%)	78(78%)	78(78%)	Ethnicity	White	156(78%)
	Black	23(11.5%)	11(11%)	12(12%)		Black	23(11.5%)
	Asian	3(1.5%)	2(2%)	1(1%)		Asian	3(1.5%)
	American Indian	1(0.5%)	0(0%)	1(1%)		American Indian	1(0.5%)
	Other	5(2.5%)	1(1%)	4(4%)		Other	5(2.5%)
	Hispanic	12(6%)	8(8%)	4(4%)		Hispanic	12(6%)
Education	Less than High School	4(2%)	0(0%)	4(4%)	Education	Less than High School	4(2%)
	High School/Tech	54(27.1%)	25(25%)	29(29.3%)		High School/Tech	54(27.1%)
	Incomplete College	55(27.6%)	26(26%)	29(29.3%)		Incomplete College	55(27.6%)
	College	57(28.6%)	34(34%)	23(23.2%)		College	57(28.6%)
	Incomplete Advanced Degree	4(2%)	2(2%)	2(2%)		Incomplete Advanced Degree	4(2%)
	Advanced Degree	25(12.6%)	13(13%)	12(12.1%)		Advanced Degree	25(12.6%)
Cancer Diagnosis	Brain & CNS	10(5%)	4(4%)	6(6%)	Cancer Diagnosis	Brain & CNS	10(5%)
	Breast	28(14%)	15(15%)	13(13%)		Breast	28(14%)
	GI	39(19.5%)	19(19%)	20(20%)		GI	39(19.5%)
	GU	13(6.5%)	5(5%)	8(8%)		GU	13(6.5%)
	GYN	18(9%)	8(8%)	10(10%)		GYN	18(9%)
	Head & Neck	26(13%)	14(14%)	12(12%)		Head&Neck	26(13%)
	Leukemia	16(8%)	9(9%)	7(7%)		Leukemia	16(8%)
	Lung	19(9.5%)	11(11%)	8(8%)		Lung	19(9.5%)
	Lymphoma	9(4.5%)	5(5%)	4(4%)		Lymphoma	9(4.5%)
	Myeloma	2(1%)	0(0%)	2(2%)		Myeloma	2(1%)
	Sarcoma	13(6.5%)	5(5%)	8(8%)		Sarcoma	13(6.5%)
	Skin	7(3.5%)	5(5%)	2(2%)		Skin	7(3.5%)
Metastasis	No	78(39%)	38(38%)	40(40%)	Metastasis	No	78(39%)
	Yes	107(53.5%)	54(54%)	53(53%)		Yes	107(53.5%)
Cancer Stage	0/I/II	39(19.5%)	20(20%)	19(19%)	Cancer Stage	0/I/II	39(19.5%)
	III	32(16%)	16(16%)	16(16%)		III	32(16%)
	IV	107(53.5%)	51(51%)	56(56%)		IV	107(53.5%)
	Other (leukemia)	22(11%)	13(13%)	9(9%)		Other (leukemia)	22(11%)
		All Patients N(%)	Consult N(%)	Followup N(%)			All Patients N(%)
Gender	Female	110(55%)	56(56%)	54(54%)	Gender	Female	110(55%)
Ethnicity	White	156(78%)	78(78%)	78(78%)	Ethnicity	White	156(78%)
	Black	23(11.5%)	11(11%)	12(12%)		Black	23(11.5%)
	Asian	3(1.5%)	2(2%)	1(1%)		Asian	3(1.5%)
	American Indian	1(0.5%)	0(0%)	1(1%)		American Indian	1(0.5%)
	Other	5(2.5%)	1(1%)	4(4%)		Other	5(2.5%)
	Hispanic	12(6%)	8(8%)	4(4%)		Hispanic	12(6%)

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Table 2: Physical Activity and Barriers	Minutes Mean +/- Std, (Q1, Q3)	P-Value
All n=200	129.53 +/- 144.76, (15, 195)	
Consult n=100	108.9 +/- 138.11, (15, 165)	0.0236
Follow up n=100	150.15 +/- 148.96, (22.5, 240)	

Table 3: Consult Group	>= 60 Minutes				>= 150 Minutes			
	Odds Ratio	95% CI		p-value	Odds Ratio	95% CI		p-value
Effect Barrier (# Often)	0.825	0.703	0.967	0.0176	0.816	0.684	0.973	0.0236
PROMIS_StandardT Score	1.088	1.025	1.155	0.0055				

Table 4: Follow up Group	>= 60 Minutes				>= 150 Minutes			
Effect	Odds Ratio	95% CI		p-value	Odds Ratio	95% CI		p-value
Gender Female vs Male	0.135	0.039	0.471	0.0017				
Dept Rehab vs SCC	4.702	1.492	14.816	0.0082				
Lack_Enjoyment (Not Often vs Often)	7.064	1.951	25.574	0.0029				
ESAS_Wellbeing	0.731	0.585	0.913	0.0058				
Fatigue (Not Often vs Often)					2.871	1.164	7.083	0.0220
PROMIS_StandardTScore					1.064	1.003	1.128	0.0383

Conclusions:

Although universal recommendations are given for physical activity in supportive care and rehabilitation clinic, adherence to exercise recommended is low. Issues of motivational type appear to be number 1 predictor including lack of interest, self-discipline and fatigue. Therefore interventions aimed at increasing motivation, and treating fatigue are likely to result in best alternatives to improve the situation.