SciMedCentral

Annals of Psychiatry and Mental Health

Research Article

Health Perception and Wellness Behavior Survey among Military Beneficiaries

Fujio McPherson*, Kristal C. Melvin, Donna L. Belew and Leigh, K. McGraw

Department of Medicine, Internal Medicine Clinic, Madigan Army Medical Center, USA

***Corresponding author**

Fujio McPherson, Madigan Army Medical Center, Department of Medicine, Internal Medicine Clinic, 9040A Fitzsimmons Ave, Tacoma, WA 98431, USA, Email: fujio.mcpherson.civ@mail.mil

Submitted: 14 October 2015

Accepted: 17 February 2016

Published: 18 February 2016

ISSN: 2374-0124

OPEN ACCESS

Keywords

- Health perceptions
- Complementary and alternative medicine
- Chronic disease

Abstract

Health promotion and wellness are of primary importance to improving medical outcomes, yet there is a paucity of research exploring perceptions of health which may impact a patient's acceptance of health improvement initiatives. The purpose of this study was to explore health perceptions, using constructs in the Health Perception Questionnaire (HPQ), and assess for any disparity between perception and self-reported health risk, behaviors and medical utilization rates. Anonymous surveys were distributed at primary care clinics in a military treatment facility with a return rate of 62% (N = 609).

Overall, general health perceptions were above the expected median point of all subscales, implying relatively good health perceptions. However, 70% of the respondents reported BMI rates for obesity and utilization rates for Primary, Specialty, and Emergency services were 2.1, 1.4, and .39 visits, respectively, in the preceding six months with a reported daily average of 3.8 prescription medications. Subscales were significantly different between the highest utilization (3+ visits) and those with the lowest utilization (< 1 visit). Differences were also reported between the youngest and oldest groups with lower "Perceived Resistance to Illness" and a higher "Health Worry/concern" in the youngest participants.

Based on the findings, there appears to be a disparity between health perception and health risk, including utilization rates. Reports of higher worry and concern among the young may also suggest a higher dependency on medical services now and in the future.

INTRODUCTION

Background

According to the National Vital Statistics Reports, the top four leading causes of death in 2010 were heart disease (24.2%), cancer (23.3%), chronic respiratory illnesses (5.6%) and stroke (5.2%), [1]. And while the cost of care continues to grow, it is well established that chronic diseases which account for over 80% of health care expenditures [2, 3] are directly linked to patient behavior and four modifiable risk factors: sedentary life style, poor diet, tobacco use and excess alcohol consumption [2].

Behavior also impacts utilization, with Individuals in the top 1% of health care utilization accounting for 21.4% of the overall health care expenditures (mean expenditure $87,570). Even more striking is that the top 50% of health care users accounted for 97.2% of overall healthcare expenditures, meaning that the lower 50% of health care users only accounted for 2.8% of the overall expenditures [4,5].

How then can we impact the rapid growth of chronic diseases, health care spending and high utilization of resources? There is consensus regarding the need for early education of primary prevention measures and promotion of wellness to improve the treatment of chronic diseases. Yet, there is also growing acknowledgement that one of the biggest challenges faced by health care providers is modifying patient perceptions of health and changing behaviors consistent with the health prevention education offered. Evidence supports improved patient outcomes when interventions target health perceptions in patients with chronic low back pain [6-8] and in patients with coronary artery disease [9,10]. In addition to health outcomes, illness perception, specifically the number and perceived severity of symptoms and the impact on functional status, is associated with increased difficulty performing activities of daily living [11].

Our primary aim in this study was to identify evidence of any disparity between how a patient perceived their own health compared to their actual risk and utilization of medication and health care resources. By identifying that disparities exist, health perception could prove to be a better predictor of health care utilization, and outcomes than a lack of education and motivation. This study was conducted within a military setting not only because of patient access to the investigators but also because military medical beneficiaries have unrestricted access to medical care and no costs or copayments associated with utilization or health behaviors, thus reducing the influence of cost on perception or behavior.

METHOD

The sample is comprised of a convenience sample of military beneficiaries at a large military medical facility. Patients were offered an anonymous pen-and-paper survey during check-in for routine, nonspecific appointments in Family Medicine and Internal Medicine clinics and the surveys were returned to a closed, locked collection box by participants when completed.

Sample

A total of 978 surveys were distributed and 609were returned (62% response rate). All surveys from respondents 18 or older were included. Patients who self- identified as non-English speaking were excluded from participation.

Measures

The primary measure was the Health Perception Questionnaire (HPQ) [12-16]. Demographic information, including height and weight (to calculate BMI), tobacco use, alcohol consumption and exercise routine were collected. We also requested self-reported prescription medication use and visits to the emergency room and/or primary care in the previous six months.

The primary outcome measures of interest were the subscales on the Health Perception Questionnaire (HPQ). The HPQ is a 36-item tool that measures eight distinct perceptual dimensions: Current Health, Prior Health, Rejection of Sick Role, Health Outlook, Health Worry/Concern, and Resistance/ Susceptibility to Illness, Sickness Orientation, and Attitude toward Going to the Doctor [16]. Higher scores on four subscales (Current Health, Prior Health, Health Outlook, and Resistance to Illness) reflect positive or favorable health perceptions. Higher scores on two subscales (Health Worry/Concern and Sickness orientation) reflect negative or unfavorable health perceptions [17]. Twenty-two of the questions from the HPQ are used to calculate the General Health Rating Index (GHRI) score (range 22-110). The GHRI is sensitive to differences in disease status, physical limitations, and role functioning due to poor health, acute physical or psychosomatic symptoms, and mental health [18], with higher scores signifying positive or more favorable health perceptions [17].

In addition to the HPQ, participants were also asked to prioritize access to a variety of wellness services, CAM treatments, health and wellness education, and life skills classes on a scale from one to five with one being most important and five being least important. Approximate time to complete the survey was twelve minutes.

Statistical Analyses

Data were analyzed using Predictive Analysis Software (version 18.0, Chicago, IL) [19]. Descriptive statistics were used to characterize demographics; Pearson's correlation identified associations between subscales and selected demographic and healthcare variables. Group comparisons of continuous variables were analyzed using Student's *t* test and one-way analysis of variance (ANOVA) with *post hoc* analyses using the Bonferroni correction.

RESULTS

All survey data were used, although missing data affected some portions of the statistical analyses. The sample was comprised of a diverse age group who were mostly married with some college education and average age of 48.The overall demographic and health related characteristics are presented in Table 1 and utilization of health care services are reported in Table 2. The scores of the participants grouped by age on all constructs of the HPQ and group comparisons are presented in Table 3. In regards to perception of health, every age group scored above the median in current and prior health as well as in health outlook. Yet, seventy percent were over-weight, with a mean utilization rate of 3 visits in 6 months for various reasons and an average daily prescription use of 3.8 medications. Participants overwhelmingly endorsed a desire for wellness services, listing as "most important" or "important" nutrition/dietary counseling (65%), exercise classes (62%), pain management (56%), and weight loss education (53%). CAM services were valued as "important" or "most important" by over 40% of participants; specifically acupuncture (45%) and Yoga classes (44%). Participants also labeled "least important" services (a) diabetes and other chronic disease management (over 35%) and (b) parenting classes (33%).Significant age group differences were identified on HPQ subscales (Table 3). Participants aged 30 to 45 years had higher Current Health scores than participants older than 45 (46-59 year age group and 60+ years age group) as well as higher scores on Prior Health, and Health Outlook scores than the 60+ years age group. The youngest age group (18-29 years) had a significantly lower perceived resistance to illness and a higher health worry/concern when compared to the 60+ year's age group.

There was also evidence of an inverse relationship between current health perception and number of current prescriptions ($r=-37$, $p<.001$) and number of primary care visits in the preceding 6 months ($r=-.21$, $p<.001$).Participants who engaged in any positive wellness behaviors (e.g., exercise, tobacco-free), had higher health perception subscale scores than those who did not. Furthermore, examination of difference between scores on subscales in the highest health care utilization (three or more visits) and lowest utilization (0-1 visits) of primary care appointments in the previous six months revealed differences in all subscales except Sickness Orientation; similar findings were identified between Emergency Department users and non-users (Table 4). Specifically, non-smokers had significantly higher scores on Current Health (29.8 [SD=7.0] versus 25.7 [SD=7.8], $p<.001$) , Prior Health (10.4 [SD=3.2] versus 9.1 [SD=3.7], $p<.01$), Health Outlook (14.6 [SD=2.8] versus 13.4 [SD=3.2], $p<.01$)and the General Health Rating Index (74.9 [SD=13.4] versus 67.6

Table 1: Demographics of Respondents and Health Care Utilization.

	Total Sample	Internal Medicine	Family Medicine
Total surveys collected (N=609)			
Internal Medicine (n=190)		31	
Family Medicine (n =419)			69
Mean age (SD)	48.6 (18.7)	61.5 (14.7)	42.7(17.3)
Age group (n=604), %			
18 to 29 years	23	5	31
30 to 45 years	23	10	30
46 to 59 years	18	21	17
≥ 60 years	35	64	22
Marital status (n =601), %			
Married	84	80	85
Divorced	4	6	3
Single	4	1	6
Separated	2	1	2
Widowed	7	12	4
Educational attainment (n=540), %			
High School Graduate	27	33	25
1-2 years college	25	22	26
3-4 years college	27	23	29
5-6 years college	11	11	12
7 or more years college	10	11	9
Body Mass Index, (n=524), %			
Underweight (16-18.4 kg/m^2)	2	1	2
Healthy weight (18.5-24.9 kg/m^2)	29	27	30
Overweight (25-29.9 kg/m^2)	37	33	39
Obese (30-39.9 kg/m^2)	28	32	25
Morbidly obese (≥40 kg/m^2)	5	8	4
Currently smoke (n=607), %	12	15	11
Previously smoked (n=577), %	31	38	28
Drink alcohol (n=605), %	50	40	54
Exercise weekly (n=602), %	71	62	75

*Continuous variables presented as mean (SD); categorical variables presented as percentage.

Table 2: Health Care Utilization.

Service	Mean (SD)
Primary care visits in previous 6 months (n=573)	2.1 (3.4)
Specialty care visits in previous 6 months (n=551)	1.4 (3.5)
Emergency Department visits in previous 6 months (n=592)	.39 (.88)
Prescriptions currently taking (n=595)	3.8 (4.0), range 0-22
OTC/herbals currently taking (n=582)	.86 (1.6), range 0-14

Table 3: Comparison of Health Perception Subscales.

	Scoring		18-29 yrs	30-45 yrs	46-59yrs	60+yrs	Group Differences		
	Range	Median					F	*p*	
Current Health	9-45	27	29.7(7.1)	31.0(6.8)	27.5(7.3)	28.5(7.4)	5.39	.001	1, 2
Prior Health	3-15	9	10.5(3.2)	10.8 (3.2)	10.3(3.8)	9.7 (3.1)	3.27	.021	2
Health Outlook	4-20	12	14.6 (2.8)	15.0 (2.7)	14.2(2.8)	13.9(3.0)	4.47	.004	2
Resistance to Illness	4-20	12	13.5 (3.9)	14.1(3.2)	14.5 (3.0)	14.8 (2.8)	4.35	.005	3
Health Worry/ Concern	4-20	12	13.4(3.0)	13.1 (3.1)	12.5(3.1)	12.3 (2.9)	4.10	.007	3
Sickness Orientation	2-10	6	7.4 (1.6)	7.4 (1.7)	7.3(1.8)	7.0 (1.7)	1.77	NS	-
General Health Rating Index	22-110	66	73.5 (14.0)	76.4 (13.6)	72.6 (14.0)	73.1 (14.4)	1.75	NS	-

*Lowest possible score is equal to the number of items from HPQ used to compute each scale score.
1: Group differences exist between 30-45 years group and 46-59 years age group
2: Group differences exist between 30-45 years group and 60+ year age group
3: Group differences exist between 18-29 years group and 60+ year age group

Table 4: Health Perception between Primary Care[1] and Emergency Department[2] Utilization Groups.

Primary Care	**0-1 PCM visits**	**≥3 PCM visits**	***p***
Current Health (n=246, 143)	30.8 (6.8)	27.2 (7.4)	<.001
Prior Health (n=256, 153)	10.7 (3.1)	9.3 (3.6)	<.001
Health Outlook (n=256, 152)	14.7 (2.8)	14.1 (3.0)	.03
Resistance to Illness (n=256, 152)	14.8 (3.0)	13.5 (3.6)	<.001
Health Worry/Concern (n=245, 151)	12.3 (2.9)	13.3 (3.2)	.001
Sickness Orientation (n=257, 153)	7.2 (1.7)	7.3 (1.8)	NS
General Health Rating Index (n=236, 141)	77.2 (12.9)	69.4 (14.5)	<.001
Emergency Department	**0 ED visits**	**≥ 1 ED visits**	***p***
Current Health (n= 382, 135)	29.9 (7.2)	27.3 (7.4)	<.001
Prior Health (n= 402, 143)	10.6 (3. 3)	9.3 (3.3)	<.001
Health Outlook (n= 401, 142)	14.6 (2.7)	13.9 (3.2)	.009
Resistance to Illness (n= 400, 142)	14.7 (3.1)	13.1 (3.5)	<.001
Health Worry/Concern (n= 389, 139)	12.4 (3.0)	13.7 (3.1)	<.001
Sickness Orientation (n= 406, 141)	7.21 (1.71)	7.45 (1.68)	NS
General Health Rating Index (n=369,130)	75.8 (13.5)	68.7 (14.7)	<.001

[1]Comparison between highest and lowest health care utilization rates as measured by number of visits to PCM in previous 6 months; [2]Comparison between users and non-users of ED services for health care in the previous 6 months.

[SD=16.4], $p<.01$). Individuals who exercised had improved Current Health (30.3 [SD=6.9] versus 26.6 [SD=7.5], $p<.001$), Health Outlook (14.8 [SD=2.7] versus 13.5 [SD=3.0], $p<.001$), and General Health Rating Index (75.6 [SD =13.5] versus 69.8 [SD =14.8], $p<.001$). Exercisers had significantly lower levels of Sickness Orientation (7.2 [SD =1.7] versus 7.5 [SD=1.6], $p= .04$) than those who did not exercise.

DISCUSSION

The findings of this study support a disparity between current health perception, and actual measures of health (e.g. obesity, medication use) and high levels of dependency on health care services (utilization rates). Yet, this disparity seemed to be acknowledged by patient's having a greater interest in having access to health support options over disease management, and perceptions within the younger population who reflected a fear of health outcomes in the future, which may reveal a potential option to how we approach medical management in the future.

Health care providers are excellent sources of health promotion information for patients, however, the issue may not be the amount of information provided to patients, but rather a failure to understand the patient perception of their true health risk and associated behaviors that impact the development of chronic diseases. This may require changing the focus of health care from accumulated therapies to an integrative approach that equally focuses on increasing self-awareness, reward and support health promoting behavior and encourages compliance. As part of the secondary aims, we were able to identify an interest in wellness services across all age groups, reflecting an

interest in conventional and alternative methods to promote health and wellness. As such, a solution would be to develop an integrative approach to health promotion and chronic disease management. Such an approach was successfully utilized in a military Medical treatment facility for patients with anxiety, using an intervention that used an integrative approach in an outpatient setting directed to change patient perceptions and behavior. Specifically, a bundle of CAM interventions that incorporated acupuncture therapy and additional interventions based on patient participation and recognized changes in behavior. The intervention improved anxiety scores as well as improved secondary outcomes of depression, stress, loneliness, self-esteem, and influenced changes in patient behavior [20].

Utilization rates in primary care and prescription medication use in this sample were both negatively associated with health perception, supporting a sickness model with dependence on health care providers and medications or medical treatments. The implications of relatively high use of resources among a sample with an average age of 48 years may also imply that, despite an interest in wellness services, Western medicine is seen as the only solution to their health care challenges. Again, pointing to an outcome that is driven by patient perception. Additional evidence of the impact of perception was identified among participants reporting higher favorable health perception subscale scores who had lower utilization rates, medication use and increased health promoting behaviors (e.g., exercise, tobacco-free) than those reporting lower levels of perceived wellness. Frostholm supports these findings as well, that perceptions of health ultimately determine a patient's decision to seek medical care with negative health perceptions associated with higher healthcare utilization rates [21].

These findings suggest that a potential cause for the growth in chronic diseases, medication use and the utilization of health resources may be linked more to perceptions that result in negative behaviors, poor compliance and high risk activity, than the result of aging or the development of acute diseases.

LIMITATIONS

There were several limitations to this study. The primary limitation was use of a self-report measures and the use of a convenience study versus a mail in questionnaire. There are inherent limitations to the accuracy of the information provided in self-report measures, in part due to the tendency to over-report desirable traits, e.g. exercise rates and may explain the discordance between exercise patterns and obesity prevalence as measured by BMI rather than ineffective exercise patterns. Another limitation related to the reported BMI was our failure to identify the medical and surgical histories that would influence the reported height and weight calculation although one assumption was that since the study occurred during an out-patient visit where heights and weights are routinely obtained that the information was accurate. We were also unable to fully identify whether ineffective exercise or over-consumption of calories, or both, were most responsible for high BMI measures. Use of BMI to quantify obesity prevalence must also be interpreted with caution, however, because BMI does not necessarily reflect adiposity and may be spuriously elevated in physically fit, muscular individuals.

An additional limitation was the failure to stratify the group by gender or ethnicity. This prevented identification of the influence of gender, or race on individual constructs, and exploration of differences in wellness behaviors related to cultural or race-related patterns in health and wellness perception. Despite these limitations, the results of this study do provide a general overview of health perception in military beneficiaries. In addition, our findings support the need for development of wellness services that influence health perceptions, while facilitating healthy behavior.

CONCLUSION

The findings of this study support the need to develop interventions with an overall goal of affecting health perceptions, to facilitate and incentivize measured wellness behaviors. Education alone is not enough. At some point, there must be a discussion and inclusion of strategies that account for patient responsibility and interventions to help improve patient perception of health, and promote a healthy non-judgmental form of self-awareness that motivates patients to successfully engage in health promotion behaviors, and minimize the prevalence of chronic diseases related to lifestyle behaviors. Evidence supports the incorporation of strategies that focus on empowerment, self-care and patient responsibility [20]. Incorporating strategies may ultimately have a longer and more sustainable effect on disease outcomes than the Western medical model, which focuses primarily on education and directed medical interventions. Keeping with the notion that perception is the true catalyst behind behavior, there is ultimately great potential for decreasing the high cost of care, improving functional status and quality of life if perceptions can be successfully influenced and modified through novel strategies.

It is unclear whether these perceptions are related to a lack of awareness of the best CAM options, or the fact that alternative options are less available and out of pocket costs will be incurred.

REFERENCES

1. Kung H-C, Hoyert DL, Xu J, Murphy SL. Deaths: final data for 2005. National Vital Statistics Report 2008.
2. Mokdad AH, Marks JS, Stroup DF, Gerberding JL. Actual causes of death in the United States, 2000. JAMA: 2004; 291: 1238-1245.
3. Ogden C, Carroll MD, Kit BK, Flegal KM. Prevalence of Obesity in the United States, 2009-2010. US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics; 2012.
4. Barlas F, Higgins W, Pflieger J, Diecker K. Department of Defense health related behaviors survey of active duty military personnel. Fairfax, VA: Department of Defense, 2013.
5. Anderson GF. Chronic care: making the case for ongoing care. Robert Wood Johnson Foundation; 2010.
6. Lloyd-Jones D, Adams RJ, Brown TM, Carnethon M, Dai S, De Simone G, et al. Heart disease and stroke statistics—2010 update: A report from the American Heart Association. Circulation. 2010; 121: e46-e215.
7. Cohen SB, Uberoi N. STATISTICAL BRIEF# 421: Differentials in the Concentration in the Level of Health Expenditures across Population Subgroups in the US, 2010.
8. CMS. National Health Expenditure Projections 2011.

9. Rates of chronic disease expected to rise sharply. Clinical Laboratory News. 2009; 35.

10. Siemonsma PC, Stuive I, Roorda LD, Vollebregt JA, Walker MF, Lankhorst GJ, et al. Cognitive treatment of illness perceptions in patients with chronic low back pain: a randomized controlled trial. Phys Ther. 2013; 93: 435-448.

11. Petrie KJ, Cameron LD, Ellis CJ, Buick D, Weinman J. Changing illness perceptions after myocardial infarction: an early intervention randomized controlled trial. Psychosom Med. 2002; 64: 580-586.

12. Broadbent E, Ellis CJ, Thomas J, Gamble G, Petrie KJ. Further development of an illness perception intervention for myocardial infarction patients: a randomized controlled trial. J Psychosom Res. 2009; 67: 17-23.

13. Bijsterbosch J, Scharloo M, Visser AW, Watt I, Meulenbelt I, Huizinga TW, et al. Illness perceptions in patients with osteoarthritis: change over time and association with disability. Arthritis Rheum. 2009; 61: 1054-1061.

14. Goertz C, Marriott BP, Finch MD, Bray RM, Williams TV, Hourani LL, et al. Military report more complementary and alternative medicine use than civilians. J Altern Complement Med. 2013; 19: 509-517.

15. George S, Jackson JL, Passamonti M. Complementary and alternative medicine in a military primary care clinic: a 5-year cohort study. Mil Med. 2011; 176: 685-688.

16. Ware JE. Scales for measuring general health perceptions.Health Services Research. 1976; 11: 396.

17. Davies AR, Sherbourne CD, Peterson J, Ware JE. Scoring manual, adult health status and patient satisfaction measures used in R AND's health insurance experiment. 1988.

18. Davies AR, Ware JE. Measuring health perceptions in the health insurance experiment.Rand Corporation Santa Monica, CA; 1981.

19. Statistics, P.A.S.W. 18.0. SPSS Inc., Chicago, IL. 2009.

20. Mc Pherson F, Mc Graw L. Treating generalized anxiety disorder using complementary and alternative medicine. Altern Ther Health Med. 2013; 19: 45-50.

21. Frostholm L, Fink P, Christensen KS, Toft T, Oernboel E, Olesen F, et al. The patients' illness perceptions and the use of primary health care. Psychosom Med. 2005; 67: 997-1005.

Cite this article

McPherson F, Melvin KC, Belew DL, McGraw LK (2016) Health Perception and Wellness Behavior Survey among Military Beneficiaries. Ann Psychiatry Ment Health 4(2): 1060.