

Racial/Ethnic Differences in Self-Reported Health Problems and Herbal Use among Older Women

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The purpose of this study was to examine the racial/ethnic differences in self-reported health problems and herbal use as a self-care practice between white American and African-American older women, and between herbal users and nonusers. Two data sets collected in 1998 and 2002 were combined to perform this study. The total sample (143 participants) consisted of 85 white Americans and 58 African-American women ≥ 65 years, living independently in the community. While there were statistically significant differences in education ($\chi^2=19.085$, $p=0.0001$) and annual income ($\chi^2=21.905$, $p=0.0001$) between white American and African-American women, no differences were found in the use of herbals between the two groups. There was a significant relationship between the number of herbals used and the number of nonprescribed medications used ($r=0.320$, $p<0.01$). No relationship was detected between the number of herbals used and self-reported health problems ($r=0.075$, $p<0.01$), and between the number of nonprescribed medications used and self-reported health problems ($r=0.047$, $p<0.01$). White American herbal users utilized the highest number of combination products (prescribed, nonprescribed and herbals) of all. African-American herbal users indicated a higher number of combination products than African-American nonusers. Results suggested that herbals were used as a complementary rather than an alternative therapy to manage perceived health concerns in both groups.

Key words: racial/ethnic differences ■ older women ■ women's health ■ herbals ■ health problems ■ complementary and alternative medicines

INTRODUCTION

In recent years, increased use of complementary and alternative medicines (CAM) suggests that more people are resorting to self-care practices to prevent potential health problems and treat current ones. CAM is often used for nonlife-threatening, chronic medical conditions, health promotion and/or disease prevention,¹⁻⁵ and prevalence of and expenditures for CAM use have increased exponentially during the last decade in the United States.^{3,6} Thus, investigation of the widespread use (and possible misuse) of CAM is an important area for further research.

In relation to individual health beliefs, most persons who use complementary therapies report taking a proactive role (e.g., exercise, diet, vitamin supplements) and perceive themselves as active participants in or personally liable for maintaining their own health.⁷ While frequent consumers of CAM are persons who are middle-aged, white American women, well educated and report a high socioeconomic status,^{2-3,8} findings from recent surveys of older adults differed somewhat from the general types of persons found to use CAM. Astin and colleagues found that 41% of elderly persons in California who were in the BlueShield[®] Medicare program were using CAM.¹ In a study by Yoon and Horne,⁴ 45% of older women surveyed reported using ≥ 1 herbal products during the past 12 months, and the majority of the products that were used were not reported to their healthcare providers.

In many studies, women report the use of CAM more often than men; however, racial/ethnic minorities are underrepresented in these studies.^{2-4,8-9} Therefore, it is not clearly understood whether the way of managing one's own healthcare with CAM (such as being proactive or being passive) is similar among different racial/ethnic groups. Only a few studies focus on minority population CAM use, and the findings are inconsistent.¹⁰⁻¹³ Becker and colleagues reported in their study of 151 respondents that African Americans had a higher number of chronic illnesses and more severe health problems when compared to Latinos and

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Filipino Americans, and yet used fewer self-care activities including home remedies and alternative therapies (11% of respondents).¹⁴ Boyd and colleagues found that African-American older adults used fewer home remedies for their healthcare than African-American younger people and there was an increased use of home remedies in African-American persons with less-educated parents.¹¹ In contrast, Factor-Litvak and colleagues reported minimal racial/ethnic (white Americans/African Americans/Hispanics=60.8%/56.4%/56%) or age (18–40/41–80=57%/58.6%) differences in CAM use.¹² Mackenzie and colleagues did not find differences in the use of ≥ 1 CAM modalities by ethnicity.¹³

Racial/ethnic differences and gender are recognized as factors for health disparity in the U.S. healthcare system, and older African-American women in particular are vulnerable to these disparities in healthcare.^{15–16} Although many factors are related to disparities in healthcare, self-care activities and a proactive role in healthcare may be associated with disparities in healthcare. Findings from a national sample of 714 respondents indicated that although women use more self-care activities to manage their health problems, older African Americans use less self-care activities than white Americans.¹⁷ African-American older adults reported more severe limitation of activity [e.g., activities of daily living (ADLs), instrumental activities of daily living (IADLs)] and a greater degree of negative impact on quality of life than their white American counterparts.¹⁸ Compared to older men, older women tend to be financially poorer and to live longer with chronic conditions and therefore have more limitations in both ADLs and IADLs.¹⁸

Some reasons for differences in self-care activities may be caused by differences in perceptions of managing and interpreting chronic health problems among different ethnic groups. For example, African Americans use prayer more often as a self-care activity to manage their health¹⁹ and use family/neighbor resources for getting information to manage health concerns.⁵ White Americans use magazines and newspapers as primary resources for self-care prescription when they obtain herbal products.^{4,20}

While there were some differences in managing health, similarities between these two groups included lack of communication with their healthcare providers and multiple medication use among participants.^{4,5} Since 4/5 older adults reported taking ≥ 1 prescribed medication during the past month (NCHS, 2004) and many older adults use herbal products,^{4,5} the lack of communication between healthcare providers and their clients that used herbal supplements was a concern of several researchers. According to Bruno and Ellis,²¹ who

used data from the 2002 National Health Interview Survey (NHIS), older adults who purchased prescribed and over-the-counter drugs also used herbal supplements (12.8% and 13.9%, respectively). Also, $>50\%$ of the herbal supplement users did not disclose the use of these herbal supplements to their healthcare providers. Considering the prevalent use of multiple medications among older adults, the additional use of herbal supplements may cause negative consequences such as interactions with prescribed and/or nonprescribed medications.²²

However, many persons perceived the herbals as effective for managing their health problems. The racial/ethnic difference in the use of prescribed and nonprescribed medicine among people using herbal products is unknown—nor have significant differences in medication use between herbal product users and nonherbal users to manage their perceived health problems been well established. Therefore, the purpose of this study was to examine the racial/ethnic difference in self-reported health problems and herbal use (as a self-care activity related to perceived health problems) between white American and African-American older women, and between herbal users and nonusers. The research questions were as follows: a) Is there a difference in herbal product use between white American and African-American older women who reside in a community? b) Is there a relationship between the number of herbals used and the number of self-reported health problems? c) What are the relationships between the number of herbals used and the number of conventional medications used based on racial/ethnic difference?

METHODS

Design

Descriptive correlation design is used by combining two sets of quantitative data. One set of data was collected in 1998 (study 1) and another set during 2002 (study 2). The 2002 study was a replication of the 1998 study with the exception of selection of subjects.

Sample and Setting

The total sample for this study consisted of 85 self-identified white American women and 58 self-identified African-American women ≥ 65 years, living independently (not in an assisted living or long-term care facility) in the selected county of Florida. Other inclusion criteria were: a) able to speak and understand English, and b) able to communicate verbally with intact memory. Subjects who responded to the requests for participation were considered to have adequate communication skills and memory ability. Excluded from the study were women who: a) had severe health conditions, b) resided in a nurs-

ing home or assisted living facility, or c) resided out of the selected county at the time of interview.

In study 1, subjects were initially recruited with random sampling technique. A list of 8,344 names and addresses of all women who were ≥65 in a selected county of Florida was obtained from the Division of Drivers' Licenses, State Department of Highway Safety and Motor Vehicles. Four-hundred-two potential subjects were randomly selected, utilizing the table of random digit (Rand Corp., www.rand.org/software_and_data/random/digits.txt). The investigator blindly selected a starting point from the table of random digits. The numbers from the table were matched with the names from the list of accessible population. After the random selection of names, 402 letters were mailed to the potential subjects, introducing the study and requesting participation in the study. A return self-addressed, stamped postcard was enclosed with each introductory letter. Of the 86 subjects who completed the interview, 39 used herbal products and 47 were nonherbal users. All women were identified as white American with the exception of one African American.

For study 2, only African-American women ≥65 years in the same selected county were recruited by a convenience sampling process. Fifty-seven subjects were recruited from meal sites, housing developments, community senior organizations, health fairs and churches. Investigators had established positive relationships with people and managers at these sites from prior associations, thus facilitating recruitment efforts. Interviews were completed at a location selected by each subject.

Instruments

The investigator developed the questionnaire because there were no known established instruments to meet the purpose of these two studies. The questionnaire included information about the use of herbal products; self-reported health status of the subjects, including the use of conventional (prescribed and nonprescribed) medicines; and demographic data. Herbal products were defined as a product that: a) is excluded from definition of *drug* by FDA; b) is not labeled as a vitamin, a mineral or food additive; c) contains active ingredients, aerial or underground parts of plants, other plant material in a crude state or plant preparation, or combinations preparations; or d) contains natural organic or inorganic active ingredients, which are not of plant origin by tradition, a concentrate metabolite, constituent or extract. Questions related to the use of herbal products included: a) number and type of herbal products used, b) general purpose of using herbal products, c) route, d) preparation, e) reasons used, f) duration of use, g) effectiveness of herbal products, h) experience of adverse reactions by using herbs or herbal products, i) sources of information for use of herbal products, j) source of payment for herbal product, and k) physician's awareness about using herbal product.

Self-reported health status information included: a) overall health, b) physical health, c) emotional health, d) visit to doctor's or other healthcare provider's clinic, e) existence of health problems, f) seriousness of health problems, g) names of pre-

Table 1. Demographic characteristics of subjects by race/ethnicity

	African-American Women (n=58; 40.6%)	White American Women (n=85; 59.4%)	Total (N=143; 100%)	Statistical Significance
Marital Status				$\chi^2=20.586^*$ (p<0.001)
Married	7	41	48 (33.6)	
Widowed	44	36	80 (55.9)	
Divorced/separated	6	8	14 (9.8)	
Never married	1	0	1 (0.7)	
Education*				$\chi^2=29.162^{**}$ (p<0.001)
< High school	31	2	33 (23.1)	
High school	11	21	32 (22.4)	
< College	9	27	36 (25.2)	
College graduate	4	13	17 (11.9)	
> Graduate school	3	22	25 (17.5)	
Annual Income**				$\chi^2=57.388^{***}$ (p<0.001)
<\$20,000	51	17	68 (47.5)	
\$20,000–\$34,999	6	23	29 (20.3)	
\$35,000–\$49,999	1	18	19 (13.3)	
≥\$50,000	0	19	19 (13.3)	
Missing data	0	8	7 (5.6)	

* "Divorced/separated" and "never married" were combined for analysis due to small cell size; ** Education was recategorized into three groups due to small cell size in certain groups: "Less than high-school education" and "high-school graduate," "some college education" and "college graduate and more"; *** Income level was divided into two categories, <\$20,000 and ≥\$20,000, due to small cell size in some groups.

scribed and nonprescribed medications used, and h) use of any herbal products. Nonprescribed medicines included over-the-counter drugs, vitamins and minerals. Demographic data included age, race, education, income, religious preference, insurance status and marital status. The questionnaire was piloted to three people to refine and rephrase the questions, and measure total time for completion. For study 1, there was only one investigator who completed the questionnaires of all 86 subjects. However, there were three investigators that completed the questionnaires of total 57 subjects for study 2. Therefore, three investigators reviewed questions together to maintain consistency.

Procedure

Both studies were approved for human subject protection by the institutional review board of the participating university. Once the subject agreed to participate in the study, she was met at a location of her choice to complete the interview. Each subject was asked about her health problems, medications used, the names of all the herbal products used in the last 12 months and demographic information. Subjects were asked to identify health problems from 23 different health problems listed on the questionnaire as well as any medications used for these problems. The health problem was coded 0 when the problem did not exist and 1 if the problem existed. Subjects identified names of the herbal products used during the past 12 months. Reasons for use of each herbal product were listed based on the types of health problems identified on a self-reported health information section of the

questionnaire. The total number of herbal products used by each subject was counted.

Questionnaires were completed on a total of 143 subjects (86 in study 1 and 57 in study 2) by investigators via face-to-face visits. The structured interview took approximately 15–30 minutes for the subjects who did not use herbal products and approximately 30–45 minutes for the subjects who responded “yes” to the use of herbal products. To answer the research questions specific to this study, the two data sets were combined.

Statistical Analysis

The Statistical Package for Social Sciences (SPSS®, version 13.0) was used for data analyses. Descriptive statistics were used to analyze demographic information of the participants, types of self-reported health problems, use of herbals, and use of prescribed and nonprescribed medications. An independent sample t test was applied to compare racial/ethnic differences in self-reported health problems and use of prescribed medicines/nonprescribed medicines among both herbal and nonherbal users. An independent sample t test was also used to examine the differences in self-reported health problems and the use of prescribed/non-prescribed medicines between older, female African-American and white American herbal/nonherbal users. Pearson’s correlation analysis was applied to examine the relationships among self-reported health problems, total number of medications used, prescribed medications used, nonprescribed medications used and reported herbals.

Table 2. Demographic characteristics of subjects by herbal users and nonusers

	Herbal Users (n=58; 40.6%)	Nonusers (n=85; 59.4%)	Total (N=143; 100%)	Statistical Significance
Marital Status				NS
Married	16 (27.6)	32 (37.6)	48 (33.6)	
Widowed	35 (60.3)	45 (52.9)	80 (55.9)	
Divorced/separated	7 (12.1)	7 (8.2)	14 (9.8)	
Never married	0 (0.0)	1 (1.2)	1 (0.7)	
Education				NS
< High school	12 (20.7)	21 (24.7)	33 (23.1)	
High school	12 (20.7)	20 (23.5)	32 (22.4)	
< College	16 (27.6)	20 (23.5)	36 (25.2)	
College graduate	8 (13.8)	9 (10.6)	17 (11.9)	
> Graduate school	10 (17.2)	15 (17.6)	25 (17.5)	
Annual Income				NS
<\$20,000	23 (39.7)	45 (52.9)	68 (47.5)	
\$20,000–\$34,999	15 (25.9)	14 (16.5)	29 (20.3)	
\$35,000–\$49,999	8 (13.8)	11 (12.9)	19 (13.3)	
≥\$50,000	7 (12.1)	13 (15.3)	20 (14.0)	
Missing data	5 (8.6)	2 (2.4)	7 (4.9)	

NS: nonsignificant (p=0.05)

RESULTS

Demographic Characteristics

Of the 143 subjects, 58 subjects (40.6%) were African-American women and 85 (59.4%) were white American women; and 58 (40.6%) of 143 subjects were herbal product users. There were significant differences in marital status, education and income between white American and African-American women regardless of herbal product use ($p=0.001$) (Table 1).

Research question 1. Is there a difference in herbal product use between white American and African-American older women who reside in the community?

Of the white American women, 44.7% (38 white American herbal users/85 total white American women) used herbal products in the past 12 months, compared to 34.5% (20 African-American herbal users/58 total African-American women) of the African-American women who used herbals during the same time period. There was no statistically significant difference in the use of herbal products by race/ethnicity ($\chi^2=1.495$, $p=0.222$). No significant differences were found in marital status, education and income between herbal users and nonusers within same race/ethnicity (Table 2).

Research questions 2 and 3. Is there a relationship between number of herbals used and number of self-reported health problems? What are the relationships between number of herbals used and number of conventional medications used based on racial/ethnic difference?

The top five chronic health conditions reported by African-American women were arthritis, hypertension, fatigue, back problems, memory and obesity, while arthritis, allergies, fatigue, back problems and digestive problems were the most prevalent conditions among white American older women that participated in the study (Table 3).

Prescribed and nonprescribed medication use,

use of herbals and self-reported health problems were described based on race/ethnicity (Table 4). Among herbal product users, there was a statistically significant difference in nonprescribed medicine use ($t=-2.840$, $p=0.006$), conventional medication use (prescribed and nonprescribed medicines) ($t=-2.782$, $p=0.007$), and combined number of prescribed, nonprescribed and herbal products ($t=-2.975$, $p=0.004$) between white American and African-American older women. However, no differences were found in self-reported health problems, number of prescribed medicines used or number of herbals reported in this same group. White American women who used herbal products reported a higher use of nonprescribed medicines when compared to African-American women who used herbal products (4.21/2.75).

While African-American nonherbal users reported more health problems than white American women (7.18/5.53), African-American women reported the use of fewer nonprescribed medications than white American women (1.87/3.47). Among nonherbal users, there were statistically significant differences in self-reported health problems ($t=2.256$, $p=0.027$), nonprescribed medicine use ($t=-4.914$, $p<0.001$) and conventional medication use (prescribed and nonprescribed medicines) ($t=-2.499$, $p=0.014$) between white American and African-American women. No significant statistical difference was found in prescribed medicine use ($t=0.109$, $p=0.914$) between white American and African-American women. While no significance was found in the number of self-reported health problems between women with $< \$20,000$ income and women with $\geq \$20,000$ income regardless of herbal use, nonprescribed medication use showed a significant difference between these two different income levels among nonherbal users ($t=-3.467$, $p=0.001$) but not among herbal users ($t=-.934$, $p=0.354$).

Among African-American women, herbal users were more likely to use nonprescribed medicines than nonusers (2.75/1.87), while there was no differ-

Table 3. Differences in self-reported health problems

Health Problems	African Americans (n=58) (rank)	White Americans (n=85) (rank)
Arthritis	80.7% (1)	55.8% (1)
Hypertension	66.7% (2)	26.1% (8)
Fatigue	42.1% (3)	45.3% (3)
Back problems	42.1% (3)	39.5% (4)
Memory	36.8% (5)	
Obesity	36.8% (5)	
Headache	33.3% (7)	
Allergies	33.3% (7)	48.8% (2)
Digestive problems		34.9% (5)
Urinary incontinence		32.6% (6)
Heart problems		27.9% (7)

ence in the use of nonprescribed medicines between white American herbal users and white American nonherbal users. Bivariate analysis revealed significant positive relationships between total number of medications (including prescribed, nonprescribed medicines and herbals) and self-reported health problems ($\gamma=0.403$, $p<0.01$), between total number of prescribed medication use and self-reported health problems ($\gamma=0.525$, $p<0.01$). A significant relationship was also found between the number of herbals used and number of non-prescribed medications used ($\gamma=0.320$, $p<0.01$). However, no relationship was detected between the number of herbals used and self-reported health problems ($\gamma=0.075$, $p<0.01$), and between the number of nonprescribed medications used and self-reported health problems ($\gamma=0.047$, $p<0.01$). Here, bivariate analysis indicated that persons who reported a higher number of health problems took a higher number of prescribed medications but not a higher number of nonprescribed medications. Persons with a higher use of herbals were correlated to a higher use of nonprescribed medications (Table 5).

DISCUSSION AND CLINICAL IMPLICATION

This study appears to be the first to include the use of herbal products in an analysis of prescribed and nonprescribed medications use among older adults based on racial/ethnic differences and to compare patterns of conventional medication use and self-reported health problems between herbal product users and nonusers. Among herbal users, women in both ethnic groups were using nonprescribed medications and herbals to manage their health concerns regardless of their income levels, which may be indicative of prevalent self-care practices among older women. However, among nonherbal users, use of nonprescribed medication differed based on income level and between the

two racial/ethnic groups.

The results of this study suggest an answer to a question posed by investigators in this area of research—namely, do herbal users take herbal products in combination with or as a replacement for conventional medicines? It appears that white American women who used herbal products, when compared to African-American herbal users, reported the highest number of combination products (prescribed, nonprescribed and herbals). African-American herbal users, when compared to African-American nonusers, reported a higher number of combination products (including prescribed, nonprescribed and herbals together), although the number of prescribed and nonprescribed medications, when examined independently, was not different between African-American users and African-American nonusers. This finding suggests that herbal products may be used mostly in combination with conventional medicines instead of as a replacement for them.

Herbal users (white American and African-American) also reported using more nonprescribed medicines than did nonherbal users ($t=3.043$, $p=0.003$). African-American nonherbal users reported the highest number of self-reported health problems but used the least number of nonprescribed medications (and total medications when all four groups were compared). This is consistent with the findings of the Piedmont Health Survey of the Elderly (PHSE), which reported that blacks took a significantly less number of over-the-counter medications compared to nonblacks, although no marked difference was found in the use of prescribed medications between these two groups.²³

Other findings indicated that with an increased number of self-reported health problems, there was an increased number of prescribed medications; with reported use of herbal products, there was an increased use number of nonprescribed medications.

Table 4. Use of conventional medication and herbals, and self-reported health problems (N=143)

Herbal Use	Race/ Ethnicity	Self-Reported Health Problems (X ± SD)	Use of Conventional Medicine and Herbals			Total Number of Reported Uses
			Prescribed Meds Used (X ± SD)	Nonprescribed Meds Used (X ± SD)	Herbals Used (X ± SD)	
Users (n=58)						
	African-American	5.80 ± 3.29	2.30 ± 1.81	2.75 ± 1.65*	1.70 ± 1.17	6.75
	White American	6.11 ± 3.17	3.05 ± 2.22	4.21 ± 1.96*	2.50 ± 2.05	9.75
Nonusers (n=85)						
	African-American	7.18 ± 3.60**	3.42 ± 2.40	1.87 ± 1.17***	N/A	5.29
	White American	5.53 ± 3.15**	3.36 ± 2.58	3.47 ± 1.82***	N/A	6.83

* Significant difference in number of nonprescribed medications use between African-American users and white American users ($t=-2.840$, $p=0.006$); ** Significant difference in number of self-reported health problems between white American nonusers and African-American nonusers ($t=2.256$, $p=0.027$); *** Significant difference in number of nonprescribed medications used between white American nonusers and African-American nonusers ($t=-4.914$, $p<0.001$)

This may suggest that persons who use herbal products are more likely to use nonprescribed medications than persons who do not use herbals, but further investigation is needed to determine if persons that use nonprescribed medications are more likely to use herbals. Therefore, delays seeking conventional healthcare until their self-care practices are not effective. A main question remains: Will persons who use nonprescribed medications and herbals be more likely to solve their health concerns before seeking conventional healthcare providers, or will they end up with deteriorating health conditions because they delay seeking conventional healthcare? Furthermore, whether differences in the ways white American and African-American women use CAM, including the use of herbals, and how these differences may impact conventional healthcare utilization are questions that need to be examined.

The study of herbal product use rather than a broader identification of CAM use is a limitation of the study, since African-American nonherbal users may employ other types of CAM to manage their health. Another limitation includes a difference in sampling technique between white American and African-American subjects. In study 1, in spite of the random sampling technique to recruit subjects, all respondents were white American women with the exception of one, who was African-American. This sample was not representative of the general population of older women in the community. Therefore, a convenience sampling was applied for study 2 to examine the prevalence of herbal product and medication use among African-American older women. Although various sites were used to recruit African-American women, the sample is not generalizable to all older African-American women in this county. However, findings are consistent with results from other studies, in that African Americans are less likely to use herbal products for managing health when compared to other ethnic groups.²⁴

Future directions for research involve replication of

the study in geographically different settings and in different populations (such as younger cohorts and men). It may be interesting to compare CAM use between younger and older African-American women, and between younger African-American and white American women since white American use more CAM than African-American women and seem to take a more proactive role. Thus, the concept of aging as a weathering process may explain the relationship of aging and health in the African-American women.²⁵ Geronimus stated that African-American women experience premature health deterioration, such as early onset of chronic disease and increased disability rate, as a consequence of cumulative environmental and psychosocial stress throughout their lives. This promotes a further “weathering” process with increasing age.²⁵⁻²⁶ Differences in the ways white Americans and African Americans use CAM and the corresponding relationship to conventional healthcare utilization under the concept of the “weathering process” is an important and interesting approach to the study of health disparities in African-American women.

Finally, it is important for healthcare providers to be knowledgeable of herbal product use and to be open-minded in their communication with persons who use herbal products in order to provide safe and comprehensive healthcare. It is crucial to understand that the use of herbals in older women is more prevalent than many healthcare providers realize. Because herbal users are more likely to use nonprescribed medications, which may affect their treatment regimens and also may delay them from seeking conventional healthcare, it is critical that a *complete* medical history be obtained.

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Table 5. Bivariate correlation between variables (N=143)

	Variables				
	Number of Herbs Used	Number of Prescribed Meds	Self-Reported Health Problems	Total Number of Meds (Prescribed + Nonprescribed + Herbals)	Number of Prescribed Meds
Number of herbs used	1.0				
Number of nonprescribed meds	0.320**	1.0			
Self-reported health problems	0.075	0.047	1.0		
Total number of meds (herbals + prescribed + nonprescribed)	0.574**	0.647**	0.403**	1.0	
Number of prescribed meds	-0.062	-0.038	0.525**	0.610**	1.0

** Correlation is significant at the 0.01 level (two-tailed).

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STAND UP.

Going to work shouldn't mean
enduring an atmosphere
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If you are under professional attack,
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