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HOMELESS WOMEN'S GYNECOLOGICAL SYMPTOMS AND USE OF MEDICAL CARE

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Abstract: Information is lacking on homeless women's gynecological symptoms and use of medical care for symptoms. This paper documents and explains gynecological symptoms and conditions and use of medical care in a probability sample of 974 reproductive-age (15-44) homeless women. Two-thirds of women reported symptoms during the previous year; 71 percent of those received medical care for their gynecological symptoms. Pregnancy, drug dependence, more episodes of homelessness, and general physical health symptoms were positively associated with a number of gynecological symptoms. Gynecological symptoms, younger age, better perceived health, and insurance coverage were positively associated with medical care; women reporting recent drug use and rape received less care. These findings support the importance of medical care and other treatment and support services for homeless women, including expanded care during pregnancy and substance abuse treatment. Health insurance coverage and an interruption in the cycle of homelessness also appear vital to women's health.

Key words: Homeless women, gynecological symptoms, medical care, access to care.

The number of physical and other health problems experienced by homeless persons is extremely large,¹ and some of the most common physical illnesses are those that affect women, namely, female genitourinary (including

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gynecological) problems. Lack of early medical attention for gynecological problems can result in unnecessary complications and more costly medical care. In a pilot study of homeless family planning clinic users, 60 percent had a history of sexually transmitted disease, 28 percent had a history of pelvic inflammatory disease, and 23 percent had a history of an abnormal Pap smear.² The striking prevalence of gynecologic problems among homeless women points to the need for accessible gynecologic services for this population.

Illness and access to medical care are linked to economic status in the United States.³ In the face of high levels of need, the vast majority of homeless people are not receiving appropriate health care,^{4,5} suggesting that the physical health problems of homeless people tend not to be addressed until they become severe enough to require costly hospitalization and urgent care. In attempting to access timely treatment for their health concerns, homeless people are confronted with an extensive set of obstacles ranging from the structural to the personal.^{4,6,7} Homeless persons may of necessity assign a higher priority to meeting competing subsistence needs than to maintenance of health or treatment of illness;⁸⁻¹⁰ homeless men and women with frequent difficulty in meeting survival needs are less likely to obtain needed medical care.¹¹ Severity of homelessness, in terms of length and living environment, may not only be associated with higher rates of physical health problems but also more difficulty accessing medical care. Problems with alcohol and other drugs may also interfere with seeking medical care.¹²

Although information regarding homeless women's health status and use of medical care is accumulating, the knowledge gap is still considerable. To date, the literature does not discuss specific gynecological symptoms or conditions among homeless women.^{1,2,13} A number of risk factors seem plausible, but there are no published reports, to our knowledge, that analytically explain homeless women's risk of experiencing specific gynecological symptoms and visits to health care providers for those symptoms. A homeless woman, whose health is already threatened by her living situation and limited ability to access or use health care services, would likely be at greater risk of experiencing a number of gynecological symptoms and conditions if she is pregnant. Pregnancy is a time when women may be more likely to experience a number of genitourinary problems.¹⁴ Risky behaviors including substance abuse and unprotected sex (i.e., sexual penetration without barrier methods)^{15,16} place one at risk of pregnancy and contracting HIV/AIDS and other STDs. Heavy alcohol consumption has been linked to gynecological difficulties such as amenorrhea and menstrual dysfunction.¹⁷ Among rape victims, STD infection has been found to be as high as 43 percent,¹⁸ and genitourinary symptoms including pelvic pain are also common.¹⁹⁻²¹ Sexual assault victims generally have been found to use medical care at higher rates than nonvictims.²⁰

Using information reported by a large probability sample of homeless women interviewed in shelters and meal programs in Los Angeles County, we

will document the prevalence of key gynecological symptoms and conditions that are problematic in themselves and also indicate more serious consequences for women's health, including STDs and other infections, breast cancer, endometriosis, and unwanted pregnancy. We will also document and explain homeless women's use of medical services for gynecological symptoms and conditions.

The literature and our considerable experience with this population lead us to predict that more symptoms and conditions will be reported by women who (1) have greater competing needs, (2) are pregnant, (3) engage in risky behaviors (unprotected sexual activity and substance use), (4) have experienced sexual violence, and (5) have greater severity of homelessness. Controlling for gynecological symptoms and conditions, we predict that use of medical care for those symptoms and conditions will be reported by women who have (1) fewer competing needs, (2) fewer alcohol or drug problems, (3) experienced sexual violence, and (4) lesser severity of homelessness. We additionally expect that among women with gynecological symptoms or conditions, economic limitations such as lack of health insurance, low income, and poor employment will emerge as less important to use of medical care than hypothesized, nonfinancial considerations (i.e., competing needs, sexual violence, and severity of homelessness).^{6,7,11}

Method

The sample for this study participated in a larger homeless women's health study that examined health care issues relevant to homeless women of reproductive age.²² Data were collected through structured interviews on 974 homeless women aged 15 to 44²³ between January and October of 1997 in 60 shelters and 18 meal programs located within Los Angeles County. A woman was designated homeless if (1) she spent any of the past 30 nights in a mission, a homeless shelter or transitional shelter, a hotel paid for by a voucher, a church or chapel, an all-night theater or other indoor public place, an abandoned building, a car or other vehicle, or the street or other outdoor public place; or (2) she spent any of the past 30 nights in a rehabilitation program for homeless people and also stayed in one of the settings mentioned in (1) during any of the 30 nights before entering the rehabilitation program. Our exclusive focus on shelters and meal programs was motivated primarily by cost considerations and in effect systematically excluded women who do not use these services, estimated from a recent study of homeless men and women to be about 11 percent.²⁴ Study results may therefore not be generalizable to the small proportion of homeless women who do not access shelter or meal programs.

Participants were obtained using a two-stage sampling procedure. The first stage employed lattice sampling with probabilities proportional to a measure of size (i.e., number of visits made by eligible homeless women for a typical week of shelter or meal operation) to select sites stratified by geographic

region within Los Angeles County and by site type (i.e., shelter or meal program). In the second stage, systematic random sampling with equal probabilities was used to select homeless women visits to the sampled sites. These two stages collectively produced a self-weighting sample of homeless women visits. The timing of the visits was also randomized. Because women were sampled with replacement over a relatively short (10-month) period of time, many who already had been interviewed were selected again. Rather than reinterviewing such a woman, her original interview was double weighted (or triple weighted if she was reselected twice); this was necessary to properly weight the sample as a replacement sample.²⁵ Nonresponse due to site refusals was estimated to be 5.6 percent, nonresponse of selected women within the nonrefusing sites was 14.0 percent, and the combined nonresponse rate was 18.8 percent.

Interviewers worked in teams at each site; the size of the team was estimated from the site's measure of size. The team leader randomly selected women to be screened for eligibility from bed lists, meal lines, waiting areas, or other congregating areas. Each woman selected was approached by one interviewer. Those who orally consented to participate in the screening interview and met the eligibility criteria for the study (homeless, aged 15-44) were either administered the full interview immediately or after finishing their meal. In some shelters, such as those housing clients who worked during the day, women were selected from bed lists or diagrams and contacted later to set up an appointment to be interviewed. Participants were paid \$2 for completing a screening interview and \$10 for completing the full, 45-minute structured interview.

Prior to data collection, all measures were pilot tested with homeless women in shelters and meal programs to ensure that items in the structured interview would be understandable for women in our study.

Participants were asked if, during the past 12 months, they had experienced any of the gynecological symptoms and conditions listed in Table 1. There is a dearth of literature on the experience of gynecological symptoms and conditions and their self-reported measurement among homeless women. This set of symptoms was therefore specifically selected for this study by a panel of family physicians, gynecologists, and women's health experts based on their face validity. The symptoms are serious in terms of their potential short-term or long-term consequences and thus require evaluation by a clinician. It is worth noting that while many women in the general population self-treat or self-test for some of these conditions with over-the-counter (OTC) formulations, the life situations endured by homeless women make routine and successful access and use of OTCs unlikely.

Abnormal vaginal discharge could be a sign of a serious infection (i.e., gonorrhea or chlamydia) that could have long-term consequences in terms of risk for pelvic inflammatory disease, subsequent infertility, and public health risk due to communicability. This symptom could also represent bacterial vaginosis, which might increase the risk for preterm labor, or candida

TABLE 1
GYNECOLOGICAL SYMPTOMS AND CONDITIONS AND
USE OF CARE FOR THOSE CONDITIONS DURING THE PAST
12 MONTHS REPORTED BY A PROBABILITY SAMPLE OF 974
REPRODUCTIVE-AGE HOMELESS WOMEN INTERVIEWED IN
SHELTERS AND MEAL FACILITIES IN LOS ANGELES COUNTY

GYNECOLOGICAL CONDITIONS	PERCENTAGE WITH CONDITION, PAST 12 MONTHS	PERCENTAGE WITH CONDITION WHO SAW DOCTOR FOR IT IN PAST 12 MONTHS
Abnormal vaginal discharge	28.3	71.6
Breast lump or nipple discharge	4.8	61.6
Severe pelvic pain	12.6	59.0
Burning during urination or blood in urine	9.7	76.6
Skipped period for a month or more	33.7	59.9
Very heavy periods that were not normal, or bleeding between periods	18.3	42.5
New warts, sores, or lumps on genitals	4.0	70.5
Miscarriages	5.2	65.4
Concern about pregnancy or desire for pregnancy test	29.7	68.3
Abortion, or desire or need for abortion	4.0	90.0
Any gynecological condition	67.0	
Percentage with any gynecological condition who also saw doctor for condition past 12 months		70.8

vaginitis or trichomonas, which do not cause long-term morbidity but do cause short-term morbidity. Only candida can be treated with OTC medications (and it can only be diagnosed and differentiated from the other conditions by a clinician). Breast lump or nipple discharge has serious consequences in terms of risk for breast cancer, and severe pelvic pain could indicate a number of conditions including endometriosis, ovarian or uterine masses, ruptured ovarian cyst, pelvic inflammatory disease, sexual abuse, ectopic pregnancy, miscarriage, or labor. Burning during urination or blood in urine can represent irritation of the skin of the genitalia, lower urinary tract infections (cystitis, urethritis), and the more serious condition of pyelonephritis (kidney infection).

A skipped period for a month or more most commonly is associated with pregnancy; more rarely, this may represent amenorrhea due to other causes such as ovarian or hypothalamic dysfunction. Very heavy periods that were not normal or bleeding between periods could represent an ectopic pregnancy, a miscarriage, endomyometritis, fibroid uterus, endometrial or cervical carcinoma, perimenopause, endocrine abnormalities, or bleeding disorders. New warts, sores, or lumps on genitals are serious because they represent conditions that have serious long-term effects on a woman or because they can be

communicated to others: condylomata accuminata, syphilis, herpes simplex, molluscum contagiosum, bartholin cysts, chancroid, or vulvar malignancy.

Miscarriages should be evaluated by a clinician and provide an opportunity for contraceptive counseling and education. In a homeless population, where cost and logistics of home pregnancy testing are probably prohibitive and where avoidance of unintended pregnancy is essential, concern about pregnancy or desire for a pregnancy test requires a medical visit. Abortion, or desire or need for abortion, requires clinician treatment to provide safe and timely access to pregnancy termination.

Use of medical care for gynecological symptoms and conditions was operationalized in the interview with homeless women as a yes or no response to whether the respondent had reported seeing a doctor for each gynecological symptom or condition during the past 12 months. Hypothesized predictors are shown in Table 2. Additional predictor and control variables are organized according to the Andersen²⁶⁻²⁸ model of health services utilization (i.e., predisposing and enabling) and are selected based on their potential importance in providing alternative explanations for the hypothesized relationships and their theoretical importance within the model. These additional variables may be important as control variables in understanding the effects of the hypothesized predictors on symptoms and service use or may be important themselves in predicting symptoms and service use.

Initially, we computed descriptive statistics for all study variables (frequency distributions, and means and other moments for continuous variables) and examined simple Pearson product moment correlations among all variables to assess distributional characteristics, collinearity, and potential for creating composites.

Multivariate linear regression assessed the relationship of predictors to two dependent variables, gynecological symptoms and conditions and use of medical care (doctor visits) for those symptoms and conditions. To create the dependent variable, gynecological symptoms and conditions, we first combined two of the most notably correlated ($r = 0.50$) variables, having a skipped period and concern about pregnancy (both pregnancy-related variables), such that a yes response to either symptom was considered an endorsement of both. Second, we summed the nine (eight individual and one combined) symptoms to form an index. A factor analysis revealed no meaningful subgroups of symptoms and conditions within the set that would support creation of a different dependent variable. Prevalence rates were too small to support separate analyses, and regressions for each of the 10 symptoms/conditions would have been unfeasible. For the subsample of women who experienced at least 1 of the 9 symptoms, we created an index to indicate the number of doctor visits women had made for their symptoms. This index represented the second dependent variable.

We used a hierarchical approach²⁹ to test the effects of the predictors on the two dependent variables, in which hypothesized predictors were entered first, followed by the set of predisposing and enabling variables in a separate

TABLE 2
DEFINITIONS OF PREDICTORS AND DESCRIPTION
OF PROBABILITY SAMPLE OF 974 HOMELESS WOMEN
OF REPRODUCTIVE AGE SAMPLED IN SHELTERS
AND MEAL FACILITIES IN LOS ANGELES COUNTY

PREDICTORS	PERCENTAGE ^a
Hypothesized	
Competing needs	
At least some need for shelter	36.8
At least some need for food	32.0
At least some need for bathing or washing facilities	30.0
Pregnant currently or within past 12 months ^b	25.2
Risky behaviors	
Alcohol dependence, lifetime ^c	39.5
Alcohol use, past 30 days	17.6
Other drug dependence, lifetime ^c	47.5
Other drug use, past 30 days	23.2
Any intercourse without condom use, past 12 months	66.7
Sexual violence	
Raped as a child ^d	32.0
Raped, past 12 months ^d	12.5
Severity of homelessness	
Number of homeless episodes of 30 consecutive days, lifetime	
1 episode	37.3
2-4 episodes	32.8
5+ episodes	29.9
Homeless \geq 6 months in the past 12 months	45.4
Homeless \geq 12 months in the lifetime	55.2
Any time spent unsheltered in the past 60 days ^e	36.8
Control	
Predisposing	
Age (<i>M, SD</i>)	(32.9, 7.5)
Married or living as married	24.7
Years of education (<i>M, SD</i>)	(11.7, 2.3)
Black, non-Hispanic	55.4
Months spent in Los Angeles, past 12 months (<i>M, SD</i>)	(10.2, 3.6)
General health and well-being ^f (1 = poor to 5 = excellent) (<i>M, SD</i>)	(2.9, 1.1)
Any current physical, functional health limitation ^f	55.1
Depression, past 12 months ^c	48.6
Psychiatric hospitalization, lifetime	23.5
Serious physical health symptoms, past 12 months (<i>M, SD</i>)	(2.1, 1.8)
Enabling	
Health insurance coverage, past 12 months ^g	11.3
Total income, past 30 days from all sources	
\leq \$200	24.5
\$201-\$400	25.5
\$401-\$600	16.6
\geq \$601	22.1

(continued)

TABLE 2 Continued

PREDICTORS	PERCENTAGE ^a
Employment status	
Full- or part-time	13.2
Stayed in Central Los Angeles last night versus other area in Los Angeles	54.7
Has a case manager	55.8
Encouraged to obtain in past year:	
Pap smear	16.0
Birth control	16.8
Medical care	26.6
HIV/AIDS test	24.3

^a Percentages shown, except means and standard deviations where indicated.

^b Counted in current pregnancy is a woman's report that she is pregnant or is probably pregnant.²³

^c Based on screening measures for DSM-III-R disorder.³³

^d Women were asked whether a man or boy made them have sex by force or threat of harm.

^e Unsheltered means street or other outdoor place, car or other vehicle, abandoned building, indoor public place not intended as a shelter, church, or chapel.

^f After the MOS 36-item short-form health survey (SF-36).³⁴

^g Medicaid, MediCal, VA, CHAMPUS, county or general relief, private health insurance.

step. A reduction in importance of a hypothesized variable when subsequent variables are added to the equation could indicate that the effect of a hypothesized variable is mediated by the additional variables.³⁰ For the dependent variable, gynecological symptoms, we first entered the hypothesized predictors of competing needs, severity of homelessness, pregnancy, risky behaviors, and sexual violence. We then added the sets of predisposing control variables (age, ethnic status, partnership status, education, number of months in Los Angeles during the past year, physical health, psychiatric problems) and enabling control variables (area of the city stayed in last night, insurance coverage, income, and employment status during the past 12 months; encouragement to get medical care, birth control methods, Pap test, and HIV test in the past 12 months; and having a case manager).

For the dependent variable of medical care, we used the same variable entry procedure with the exception that number of gynecological symptoms was entered with the hypothesized predictors as a control variable, and intercourse without condom use and pregnancy were entered in the second step as control variables rather than in the first step as hypothesized variables. We expected that need for care, that is, gynecological symptoms, would account for the largest amount of variance in the dependent variable and indeed would be the most important predictor of service receipt in an equitable system of health care distribution.²⁷

In addition, because each competing need variable was related similarly to medical care, we reduced this set to one item indicating presence of at least

some competing need for shelter, food, or bathing or washing facilities. To further reduce the large set of predictors for the relatively smaller number of cases for this analysis, we screened (via bivariate analysis) and omitted three statistically insignificant predisposing sociodemographic characteristics of partnership status, ethnic status, and residential stability. We considered a bivariate or multivariate test result significant at the $p < 0.05$ level. The Stata software package was used for multivariate modeling because of its capacity to account for complex information about the sample design (specifically, number of sampling strata and primary sampling units).

Results

Half of the subsample reporting symptoms had at least one doctor visit for a symptom. Characteristics of the 974 homeless women are depicted in Table 2. Variables are those used in subsequent predictive models, although the latter were sometimes simplified or otherwise modified from those in Table 2 based on preliminary analyses. For example, because of the distribution of the number of days of alcohol use in the past 30 variable, it was reduced to whether one had used alcohol in the past 30 days. The mean age of the homeless women was 32.9 ($SD = 7.5$). More than half (55 percent) of the women were black, non-Hispanic. (Although not depicted in Table 2, 18 percent were white, non-Hispanic; 15 percent were Hispanic; and 12 percent were Native American, Asian, or Pacific Islander, or identified themselves as members of another ethnic group.) The average level of education achieved by the women was approximately at the level of high school completion, 11.7 years ($SD = 2.3$). A quarter (24.7 percent) of the women were currently married or were living as married.

The 974 homeless women reported a mean of 1.3 symptoms ($SD = 1.1$); half of the sample had at least 1 symptom. Among those who reported at least 1 symptom, the mean number of doctor visits for symptoms was 1.2 ($SD = 1.0$). Table 1 describes gynecological symptoms and conditions and doctor visits for them. Two-thirds of women experienced at least 1 gynecological symptom or condition during the past 12 months. The most commonly experienced individual symptom was a delay of one month or more in period onset. Women experienced a mean number of 1.9 symptoms (median = 1.0, $SD = 0.8$). Of those women who had experienced at least 1 symptom, 70.8 percent sought care for a symptom. Among women who experienced symptoms, care was sought for a mean number of 1.3 symptoms (median = 1.0, $SD = 0.9$). Although abortion or desire or need for abortion was least often reported, almost all women with this condition (90.0 percent) saw a doctor for it. Symptoms with the lowest rates of care seeking were very heavy periods that were not normal (42.5 percent) and severe pelvic pain (59.0 percent).

Symptoms and conditions. Results of bivariate correlations between gynecological symptoms and conditions and the hypothesized predictors are shown in Table 3. All Pearson correlation coefficients between gynecological

TABLE 3
PEARSON PRODUCT MOMENT CORRELATIONS,
GYNECOLOGICAL SYMPTOMS AND CONDITIONS, AND
MEDICAL CARE FOR SYMPTOMS AND CONDITIONS, WITH
HYPOTHESIZED PREDICTORS AMONG 974 HOMELESS
WOMEN OF REPRODUCTIVE AGE IN LOS ANGELES COUNTY

	GYNECOLOGICAL SYMPTOMS AND CONDITIONS (n = 974) r (p)	NUMBER OF GYNECOLOGICAL SYMPTOMS AND CONDITIONS FOR WHICH MEDICAL CARE WAS OBTAINED (n = 585) r (p)
Competing needs		
Shelter	0.089 (0.008)	—
Food	0.154 (0.0001)	—
Bath, wash	0.076 (0.0212)	—
At least some competing needs	—	-0.091 (0.031)
Pregnancy past 12 months	0.383 (0.0001)	—
Risky behaviors		
Alcohol dependency, lifetime	0.096 (0.004)	-0.087 (0.039)
Alcohol use, past 30 days	0.116 (0.0006)	-0.039 (0.348)
Drug dependency, lifetime	0.170 (0.0001)	0.014 (0.737)
Drug use, past 30 days	0.111 (0.0009)	-0.135 (0.0013)
Any intercourse without condom, past 30 days	0.234 (0.0001)	—
Sexual violence		
Raped as a child	0.142 (0.0001)	-0.026 (0.528)
Raped, past 12 months	0.213 (0.0001)	-0.137 (0.001)
Severity of homelessness		
Number of homeless episodes, lifetime	0.181 (0.0001)	-0.060 (0.154)
Homeless ≥ 6 months of past 12 months	-0.092 (0.006)	-0.094 (0.026)
Homeless ≥ 12 months in lifetime	0.081 (0.017)	-0.054 (0.197)
Any time unsheltered in past 60 days	0.096 (0.003)	-0.119 (0.004)

symptoms and hypothesized predictors were significant, although many coefficients were small. Positive correlations between symptoms and pregnancy during the past 12 months, lack of condom use during the past year, and forcible rape during the past 12 months were all greater than 0.20.

Multivariate hierarchical linear regressions conducted to explain gynecological symptoms experienced by homeless women over the past 12 months are shown in Table 4. In the first step of the model, in which only hypothesized predictors were tested, significant predictors included indicators of competing needs, pregnancy, risky behaviors, and sexual violence.

TABLE 4
RESULTS OF HIERARCHICAL MULTIVARIATE LINEAR
REGRESSION ANALYSES TO EXPLAIN GYNECOLOGICAL
SYMPTOMS AND CONDITIONS EXPERIENCED OVER
THE PAST 12 MONTHS AMONG 974 HOMELESS WOMEN
OF REPRODUCTIVE AGE

	COEFFICIENT	STANDARD ERROR	p VALUE
Step 1: hypothesized predictors (<i>n</i> = 904)			
Competing needs			
Shelter	-0.049	0.157	0.757
Food	0.323	0.156	0.040
Bathing/washing	-0.114	0.167	0.498
Pregnancy	1.02	0.143	0.001
Risky behaviors			
Alcohol dependency, lifetime	-0.013	0.153	0.930
Alcohol use, past 30 days	0.153	0.242	0.530
Other drug dependency, lifetime	0.309	0.116	0.001
Other drug use, past 30 days	0.062	0.212	0.771
Intercourse without a condom, past 30 days	0.169	0.109	0.124
Sexual violence			
Raped as a child	0.323	0.154	0.039
Raped past 12 months	0.262	0.133	0.051
Severity of homelessness			
Number of homeless episodes	0.124	0.087	0.153
Homeless \geq 6 months, past 12 months	-0.091	0.117	0.436
Homeless \geq 12 months, lifetime	0.019	0.151	0.900
Any time sheltered, past 60 days	-0.090	0.145	0.541
Step 2: hypothesized predictors and controls (<i>n</i> = 865)			
Competing needs			
Shelter	-0.069	0.122	0.569
Food	0.184	0.153	0.232
Bathing/washing	-0.114	0.174	0.515
Pregnancy	0.904	0.133	0.001
Risky behaviors			
Alcohol dependency, lifetime	0.015	0.156	0.922
Alcohol use, past 30 days	0.217	0.194	0.266
Other drug dependency, lifetime	0.264	0.109	0.017
Other drug use, past 30 days	-0.049	0.198	0.802
Intercourse without a condom past 30 days	0.204	0.11	0.065
Sexual violence			
Raped as a child	0.201	0.135	0.141
Raped past 12 months	0.064	0.121	0.596
Severity of homelessness			
Number of homeless episodes	0.172	0.074	0.023
Homeless \geq 6 months, past 12 months	-0.045	0.106	0.668
Homeless \geq 12 months, lifetime	-0.162	0.119	0.178
Anytime sheltered, past 60 days	0.085	0.135	0.530

(continued)

TABLE 4 Continued

	COEFFICIENT	STANDARD ERROR	p VALUE
Predisposing			
Age	-0.009	0.007	0.197
Married or living as married	0.007	0.123	0.957
Years of education	0.016	0.022	0.455
Black, non-Hispanic	-0.148	0.115	0.201
Months in Los Angeles, past 12 months	0.009	0.014	0.511
General health and well-being	-0.054	0.061	0.379
Any physical functional health limitations	0.020	0.117	0.865
Serious physical health symptoms, past 12 months	0.374	0.073	0.001
Enabling			
Health insurance coverage, past 12 months	0.076	0.103	0.463
Total income, past 30 days	-0.049	0.042	0.247
Employment status, full- or part-time	0.248	0.139	0.077
Stayed in Central Los Angeles last night	0.032	0.095	0.737
Has case manager	0.069	0.097	0.482
Encouraged to obtain:			
Pap smear	0.429	0.175	0.016
Birth control	0.272	0.140	0.054
Medical care	-0.077	0.118	0.514
HIV/AIDS test	0.136	0.139	0.330

Note: For step 1: $R^2 = 0.246$, $F = 11.7$, $p = 0.001$; for step 2: $R^2 = 0.350$, $F = 16.72$, $p = 0.001$.

Specifically, characteristics positively associated with gynecological symptoms and conditions were report of at least some competing need for food during the past 30 days, a current pregnancy or a pregnancy completed during the past 12 months, lifetime drug abuse or dependence, and forcible rape during childhood. Experience of rape during the past 12 months was very nearly statistically significant at $p < 0.051$. This model accounted for 25 percent of the variance in gynecological symptoms and conditions.

In the second step of the regression model, predisposing and enabling characteristics were added to the hypothesized predictors. Controlling for predisposing and enabling variables significantly reduced the parameter estimates for two of the hypothesized predictors, rape during childhood and competing need for food, such that they became statistically insignificant. An additional hypothesized variable achieved significance in the second step, experience of a greater number of episodes of homelessness during the lifetime. The predisposing variable of serious general physical health symptoms was also a significant contributor to gynecological symptoms and conditions in the second step of the model, as was the enabling variable of encouragement to receive a Pap smear. The full model explained 35 percent of the variation in the dependent variable.

Medical care for symptoms and conditions. For the subset of women who experienced at least one symptom, number of symptoms women received care for was significantly and negatively associated at the bivariate level with having at least some competing need for shelter, food, or bathing/washing facilities; lifetime alcohol dependence; drug use in the past month; rape during the past 12 months; a longer period of homelessness during the past 12 months; and spending time unsheltered during the past 60 days (see Table 3).

Regressions performed to explain doctor visits for symptoms are shown in Table 5. After accounting for number of symptoms experienced, the hypothesized predictors of lifetime dependence on drugs other than alcohol, use of drugs other than alcohol during the past 30 days, and adult sexual violence were significant. In the second regression step, the predisposing and enabling factors of age, general health, psychiatric hospitalization, and health insurance coverage were significant. Specifically, younger age, better general health, a previous psychiatric hospitalization, and having insurance coverage were associated with more doctor visits. Accounting for these additional characteristics reduced the relationships between medical care and the hypothesized variable of drug use during the past 30 days, suggesting that the significant predisposing and enabling variables mediated this relationship. Proportion of variance explained in medical care increased from 44 percent for the hypothesized predictors (and gynecological symptoms) to 53 percent for hypothesized and control variables with gynecological symptoms.

Discussion and Conclusions

The majority of homeless women in this study were burdened by at least one gynecological symptom or condition during the previous 12-month period, suggesting need for medical care to address these problems. That the two most commonly endorsed symptoms were pregnancy related (a menstrual period skipped for a month or longer and concerns about pregnancy or desire for a pregnancy test) also suggests a need for obstetrical and prenatal care in this population. This need is further substantiated by the fact that no fewer than one-quarter of the women were either pregnant at the time of the study or had been pregnant during the previous 12 months.

As hypothesized, pregnancy was significantly and uniquely associated with gynecological symptoms, a relationship sustained in a supplementary analysis excluding the two symptoms most related to pregnancy (i.e., skipped period and concern about pregnancy). That homeless pregnant women experience greater vulnerability to a number of other gynecological health problems argues for expanded care for pregnant women to improve their gynecological health.

Our hypothesis on the importance of high-risk behaviors was partially confirmed in that a lifetime history of drug abuse or dependence was uniquely associated with a greater number of gynecological symptoms. Although the precise link between past-year symptoms and drug abuse or dependence

TABLE 5
RESULTS OF HIERARCHICAL MULTIVARIATE LINEAR
REGRESSION ANALYSES TO EXPLAIN NUMBER OF
GYNCOLOGICAL SYMPTOMS AND CONDITIONS FOR
WHICH CARE WAS OBTAINED AMONG HOMELESS WOMEN
OF REPRODUCTIVE AGE WITH GYNCOLOGICAL
SYMPTOMS AND CONDITIONS

	COEFFICIENT	STANDARD ERROR	p VALUE
Step 1: hypothesized predictors (<i>n</i> = 564)			
At least some competing needs	-0.038	0.106	0.720
Risky behaviors			
Alcohol dependency, lifetime	-0.146	0.100	0.145
Alcohol use, past 30 days	-0.044	0.133	0.741
Other drug dependency, lifetime	0.269	0.116	0.022
Other drug use, past 30 days	-0.304	0.149	0.054
Sexual violence			
Raped as a child	-0.095	0.082	0.252
Raped past 12 months	-0.472	0.200	0.020
Severity of homelessness			
Number of homeless episodes	-0.030	0.069	0.662
Homeless ≥ 6 months, past 12 months	-0.105	0.101	0.302
Homeless ≥ 12 months, lifetime	-0.116	0.113	0.309
Any time sheltered, past 60 days	-0.095	0.152	0.532
Number of gynecological symptoms and conditions	0.582	0.047	0.001
Step 2: hypothesized predictors and controls (<i>n</i> = 530)			
At least some competing needs	-0.050	0.110	0.651
Risky behaviors			
Alcohol dependency, lifetime	-0.065	0.092	0.482
Alcohol use, past 30 days	-0.025	0.121	0.837
Other drug dependency, lifetime	0.259	0.077	0.001
Other drug use, past 30 days	-0.239	0.124	0.057
Sexual violence			
Raped as a child	-0.086	0.065	0.191
Raped past 12 months	-0.389	0.180	0.033
Severity of homelessness			
Number of homeless episodes	-0.054	0.061	0.373
Homeless ≥ 6 months, past 12 months	-0.005	0.087	0.958
Homeless ≥ 12 months, lifetime	-0.045	0.086	0.600
Any time sheltered, past 60 days	-0.037	0.122	0.764
Number of gynecological symptoms and conditions	0.567	0.045	0.001
Predisposing			
Age	-0.012	0.005	0.017
Years of education	-0.027	0.016	0.086
General health and well-being	0.115	0.036	0.002
Any physical functional health limitations	0.152	0.081	0.062
Serious physical health symptoms, past 12 months	-0.051	0.047	0.280

(continued)

TABLE 5 Continued

	COEFFICIENT	STANDARD ERROR	p VALUE
Enabling			
Health insurance coverage, past 12 months	0.368	0.103	0.001
Total income, past 30 days	-0.023	0.027	0.396
Employment status, full- or part-time	0.121	0.105	0.252
Stayed in Central Los Angeles last night	-0.070	0.084	0.411
Has case manager	-0.009	0.100	0.932
Encouraged to obtain:			
Pap smear	-0.154	0.138	0.268
Birth control	0.058	0.076	0.123
Medical care	0.076	0.098	0.442
HIV/AIDS test	0.168	0.101	0.101

Note: For step 1: $R^2 = 0.440$, $F = 18.09$, $p = 0.001$; for step 2: $R^2 = 0.530$, $F = 13.9$, $p = 0.001$.

during a woman's lifetime cannot be determined in this study, drug problems are known to be linked with poor health for the user as well as threats to the health of a developing fetus. The time and effort involved in acquiring and using drugs detract from personal health-maintenance activities. Regardless of the precise link, accessible substance abuse treatment resources for homeless women with drug problems are necessary. That repeated episodes of homelessness were related to gynecological symptoms may reflect difficulty in maintaining good hygiene and other preventive behaviors, thus arguing for an interruption and end to the cycle of homelessness.

Regarding the significance of serious physical health symptoms in understanding gynecological problems, this may be less a reflection of the influence of overall physical health on gynecological symptoms than simply evidence of serious co-occurring health problems among highly impoverished women. Such an interpretation argues for comprehensive treatment efforts to improve the health of homeless women. The positive relationship between encouragement to receive a Pap smear and experience of gynecological symptoms was unexpected. Given the temporal ambiguity inherent in a cross-sectional study and that encouragement is certainly not a reasonable cause of gynecological symptoms, this finding may reflect women's discussion of their gynecological problems with friends or others in her network.

An encouraging finding is that the large majority of women who experienced gynecological symptoms received medical care for those symptoms, yet a number of factors other than need explained receipt of care. Our hypotheses regarding use of medical care for gynecological symptoms received limited support. After accounting for gynecological symptoms, in which having more symptoms was associated with more doctor visits for those symptoms, risky behaviors (drug use and dependence) and sexual violence (rape during the

past 12 months) were significant predictors of use of care. Although use of drugs other than alcohol during the past 30 days appeared to interfere with receipt of medical care for symptoms, unexpectedly, a lifetime history of abuse or dependence on drugs other than alcohol was associated with more use of care. A drug problem experienced during the lifetime does not necessarily reflect recent drug use severity. Another explanation for these results is that, although recent drug use may interfere with care seeking because of preoccupation with obtaining and using the drug, a woman with a history of abuse or dependence may have gained some experience with the formal substance abuse treatment system. Such experience may provide some familiarity with other formal services such as medical care.

Recent experience of rape was a significant predictor of medical care for gynecological symptoms, but it was not associated with the dependent variable in the anticipated direction. Women who had been raped were less likely to see a doctor for their gynecological symptoms. Because sexual assault victims have been found generally to use medical services at higher rates than nonvictims,^{20,30} we expected that women who had been raped would be more likely to see a doctor for their gynecological symptoms. However, research on adult survivors of child sexual abuse has revealed more extreme discomfort, intensely negative feelings, and trauma-like responses during gynecological examinations than among nonvictims.³¹ For these reasons, homeless rape victims may have been reluctant to seek care for their gynecological problems. Rape victims may represent one of the groups of homeless women most in need of receiving comprehensive care and yet may be one of the groups least likely to receive some types of care. This finding argues for careful rape screening and sensitive delivery of medical services to homeless women.

Predisposing and enabling variables also contributed to understanding medical care for gynecological symptoms—youth, better perceived general health, previous psychiatric hospitalization, and insurance coverage were all associated with seeing a doctor for gynecological symptoms. That younger women were more likely to see a doctor for their gynecological symptoms may be a reflection of the type of symptoms (pregnancy related) that were most commonly reported in this study. Women with better perceived general health may have achieved that status through better connection with the medical care system, translating into more familiarity and less hesitation in seeking care for gynecological problems. Similarly, psychiatric hospitalization during the lifetime may have familiarized women with the formal health care system. If the psychiatric condition is ongoing and requires medication, enhanced contact with medical professionals through prescription monitoring may facilitate a connection to other health services.

Health insurance coverage is a significant gateway to care for homeless women with gynecological symptoms even after accounting for other, noneconomic characteristics that affect medical care for these women. Availability of health insurance and extension of accessible services to homeless persons have sometimes been considered of limited value without remedying

other barriers to care (e.g., substance problems, discomfort with the formal care system). This study suggests, however, that the availability of health insurance deserves as much attention as any of the other potential barriers and facilitators to care for homeless women with gynecological health problems.

This investigation revealed important new information on homeless women's gynecological health; a number of limitations nevertheless deserve mention. Gynecological symptoms and conditions were selected for study by a panel of experts as representing potentially serious health risks and requiring clinical attention. However, the use of an invalidated measure is problematic and represents a significant drawback. Although we elected to focus on access to care across conditions, we acknowledge that there are distinct physiological and clinical differences among many of the symptoms and conditions we selected for study and that a comprehensive examination of symptom etiology and service use would require a more expansive set of predictors and careful separation of symptomatology.

Temporal ambiguity and inability to demonstrate causal mechanisms or relationships is also a limitation of this study given its cross-sectional nature. We cannot be certain, for example, that the general symptoms of serious physical illness preceded gynecological symptoms. However, the sequence of events we posited largely appears to represent a plausible ordering that awaits further validation using longitudinal designs. Another limitation of this study, as in all surveys, is the exclusive reliance on self-report data; however, self-reports of homeless persons' ambulatory medical clinic visits previously have been found to be accurate.³²

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