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Does the Health Status of Intimate Partner Violence Victims Warrant Pharmacies as Portals for Public Health Promotion?

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Abstract

Objectives—To explore whether the health status of intimate partner violence (IPV) victims warrants pharmacies to be portals for public health promotion. Specific objectives included: 1) Identify prevalence of IPV including Domestic Violence and Sexual Assault (DV/SA) in a

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community sample; 2) Describe characteristics and correlates of DV/SA relative to those who did not report DV/SA; and 3) Explore whether DV/SA status is related to mental health medication use.

Design—A secondary analysis of a countywide random telephone survey, the Monroe County Adult Health Survey 2006 (MCAHS), which collects prevalence data on health behaviors and health status indicators.

Setting—Upstate New York

Participants—English and Spanish speaking respondents under 65 years of age answering four questions to assess DV/SA.

Interventions—None

Main Outcome Measure—To determine whether those reporting DV/SA are at increased odds for mental health medication use controlling for other socio-demographic and health related variables.

Results—The survey response rate was 30.3% with 1,881 respondents fitting inclusion. Those reporting DV/SA were almost twice as likely to utilize mental health medications. However, when controlling for other variables, only poor mental and physical health were significant in increasing the odds of mental health medication use.

Conclusion—Analyses suggest DV/SA victims in a community sample do utilize mental health medications. When controlling for other variables, they report worse physical and mental health. If pharmacies are suitable portals for DV/SA outreach, curricula would need to provide the knowledge and skills needed to take an active role in this public health promotion.

Keywords

Community Pharmacy; Domestic Violence; Sexual Assault

Introduction

The Healthy People 2010 objective to reduce violence in the United States includes reducing the rate of physical and sexual assault by current or former intimate partners.¹ Intimate partner violence (IPV) can include physical, sexual, emotional, economic or psychological assault on the other partner, through a pattern of controlling behaviors including force, coercion, threats and/or intimidation.^{2,3} IPV is a public health crisis affecting 22% of women and 7% of men over their lifetimes as reported in a national community-based telephone survey.³ Reported self-disclosures of IPV range from 15–29.5% in emergency room settings depending on the geographic location of the emergency department and questions asked.^{4–9} In primary care clinics, rates range from 10% for violence in the past year to 44% for ever experiencing violence.^{10,11} Again, reports vary based on location and question type or format.

Despite prevalence rate variation, researchers estimate national costs between 5–8 billion dollars per year (depending on the data examined and costs that are included) is spent on IPV screening, assessment and interventions.^{12–14} However, these estimates do not

necessarily capture the costs such as the financial burdens of prosecution, defense, incarceration, lost productivity and many of the medical and mental health treatments.

Regardless of the type of IPV, it can have lifetime implications on the victim's health by causing or worsening physical and mental health problems.^{15–17} Physical violence can result in injuries ranging from bruises and swelling, to serious physical injury including broken bones, teeth, and even death.³ Approximately 1,800 people are killed each year at the hands of intimate partners.¹⁸ Psychological abuse can result in deteriorated health including depression, post-traumatic stress disorder, stress related gastrointestinal disorders, sleep disturbances and anxiety.^{19,20} In domestic and international studies, women who report IPV have higher rates of health care utilization, increased primary care consultations, experience chronic illnesses (such as fibromyalgia), report pain more frequently and utilize prescription pain medications more than those who do not disclose violence.^{21–24}

Given the association between co-morbid medical conditions, prescription pain medication use and IPV, does the health status of IPV victims warrant considering pharmacists as portals for IPV advocacy and facilitation? Are there additional prescription medications that could serve as markers to enable pharmacists to help identify those at risk for IPV? While the studies above note abuse IPV victims are more likely to suffer from poor physical and mental health, including chronic conditions, often requiring pain medication, no studies have explored mental health medication use by IPV victims in a community sample. This study assesses whether patients responding to a community health telephonic survey who reported Domestic Violence and Sexual Assault (DV/SA) were more likely to utilize mental health medications. Community pharmacists may be unknowingly in frequent contact with IPV victims and this analysis was conducted to provide information on another potential IPV indicator.

Objectives

The specific objectives of this analysis included: 1) To identify the prevalence of IPV which includes DV/SA in a community sample; 2) To describe the characteristics and correlates of DV/SA relative to those who did not report DV/SA; and 3) To explore whether DV/SA status is related to mental health medication use controlling for other factors. The hypothesis was that those who reported abuse (DV or SA) would have 1) worse mental and physical health burden; 2) less access to health care and 3) more likely to report using mental health medications than those who did not report abuse. The discussion addresses whether pharmacies can be venues for IPV outreach serving the role as advocate and facilitator given the increased risk for health consequences of IPV that may result in prescription medication use.

Methods

This cross-sectional secondary analysis presents results from a 2006 telephone survey collected via the Monroe County New York Adult Health Survey (MCAHS).²⁵ Conducted in both English and Spanish, the MCAHS was a countywide random household telephone survey to collect prevalence data on health behaviors and health status indicators of residents

over age 18. This survey attempted to replicate the methods design of the CDC Behavioral Risk Surveillance Survey.²⁶ The MCAHS has 157 questions, which include demographic information, a brief health function screen, and Medical Outcomes Survey Short Form version 2 (SF12v2).²⁷ This 12-item survey, derived from the SF-36, measures mental and physical health status has excellent validity and reliability, and is widely used.^{28–30} In this analysis, both the Mental Component Summary Scale (MCS) and the Physical Component Summary Scale (PCS) were utilized to enable a comparison of the survey sample to a national healthy sample of individuals with a mean score of 50.

Using random digit dialing, trained callers recited a script indicating the purpose of the call and provided a confidentiality statement to indicate participants would not be asked for their name, address, or other personal information that could identify them. Subjects could decline to answer any question and could end the interview at any time.

The survey was completed by 2,545 county residents, with a response rate of 30.3%. The sample for this analysis is comprised of 1,881 subjects who are under the age of 65 who responded to four questions regarding domestic violence (DV) and sexual assault (SA). As the purpose was not to draw causal implications, but rather associations, power calculations are not discussed. Under the Office of Mental Health Promotion, at the University of Rochester School of Medicine and Dentistry, the Health Department gave the authors permission to complete and submit an Adult Survey Data Use Agreements and granted permission to utilize the data. Investigational review board approval was obtained for the analysis.

Covariates included age, body mass index, gender, race, poverty, and education. Body Mass Index (BMI) was calculated from subject self-reported weight and height variables. Due to the small sample size, race was recoded to Caucasian and Non-Caucasian and education was recoded to less than High School Degree and High School Degree or greater. A poverty variable was created based on census tract data using zip code. The percent below poverty was coded in the subject's neighborhood as reported by the 2000 census. For the logistic regression, the dependent variable was subject self reported use of mental health medications. This was asked in the survey, "Are you currently taking prescription medication for any mental health problems such as personal or family problems, depression, anxiety, or stress?"

Independent Variables: abuse, health status, access to care

The sample was first bifurcated on a variable "Abuse" created by combining those who endorsed either DV or SA as a "yes" or "no". This is the dichotomous variable of interest for Table 1: Sample Characteristics. Survey questions asked to solicit data were as follows:

1. Has an intimate partner EVER hit, slapped, pushed, kicked, or physically hurt you in any way?
2. When was the last time this happened?
3. Has anyone EVER had sex with you after you said or showed that you didn't want them to or without your consent?

4. When was the last time this happened?

If one of the answers to question 1 or 3 was “yes”, then the variable “Abuse” was coded to be “yes”. If both of the answers are “No”, then “Abuse” was coded as “No”. There is a precedent for asking about IPV using a phone survey.^{3, 31} An intimate partner was defined in the data source as, “...any current or former spouse, boyfriend, or girlfriend. Someone you dated would also be considered an intimate partner.”

The survey assessed mental and physical health using the SF12v2 as noted above. The SF12v2 was recoded, z scored and normed to comprise mental and physical component scores to compare the mean to community samples. Subjects answered questions regarding suicide attempts and plan by responding to the following questions: “In the past year, have you made a plan for committing suicide?” and “In the past year, have you attempted suicide?”. The presence of chronic condition was recorded as “yes” if the respondent positively endorsed heart disease, diabetes, asthma or other chronic lung disease, cancer, alcoholism, kidney or liver disease. Access to care was assessed by respondent’s insurance status and how many medical providers he or she had. Health insurance status was indicated as a dichotomous “yes” or “no”.

Data Analysis

Using SAS (SAS Inc. Statistical analysis software) descriptive analysis were conducted using Chi Square for nominal and ordinal variables and T-tests for continuous level variables. Bivariate and multivariable analysis utilized logistic regression analysis to model associations between the independent variables and the dependent variable, whether a person was using mental health medications.³² Variance inflation factor (VIF) was used to detect the severity of multicollinearity. More precisely, the VIF is an index which measures how much the variance of a coefficient is increased because of collinearity.³³

Results

Approximately 20% (382) out of 1881 subjects reported abuse. Table 1 provides the statistically significant differences between the socio-demographic variables gender, education, health insurance and poverty for those who reported abuse and those who did not. Results demonstrate no significant difference in age or race between those who reported abuse and those who do not in this community sample. Poverty was explored in two ways: as a continuous variable and then in quartiles regarding percent below poverty in the subject’s neighborhood. As a continuous level variable, there were no differences between those that were below 25% poverty regarding percent abused. However, when the variable is put into quartiles, more people in the 7.9 to 17.4% quartile report abuse (23%, $p<.001$).

It was hypothesized that those who reported abuse would report worse mental and physical health burden and less access to health care due to the host of co-morbid conditions suffered by abuse victims. As predicted, 481 subjects who reported chronic conditions had a higher percentage of abuse (24%) compared to the 1,357 subjects who reported no chronic conditions, 14% ($p<0.0001$). In addition, abused individuals had lower mean SF12v2 scores for mental (52.3 ± 13.3 , 56.1 ± 11.6 , $p<0.0001$) and physical health (41.3 ± 16.0 , 44.5 ± 9.7 ,

$p < 0.001$). There were no differences in reporting of abuse between those who reported suicidal plans or attempts. As predicted, 29% ($n=42$) of those who reported no insurance were abused compared to 16% ($n=337$) of those with insurance ($p < 0.05$). However, there is no difference between those with no medical provider, one medical provider or more than one provider regarding the percent reporting abuse.

Due to the host of co-morbid conditions suffered by abuse victims, it was hypothesized that those who reported abuse would be more likely to report using mental health medications than those who are not abused. Table 2 provides the results for the bivariate analysis utilizing logistic regression to assess what subject characteristics would increase the odds that a subject would use mental health medications. The final multivariate logistic regression in Table 3 controlled for variables in Table 2 that were statistically significant at a level 0.20 or lower. The Hosmer Lemeshow Goodness-of-Fit Test was 0.3203 revealing the model fit well.³² Co-linearity was not identified as an issue.

Bivariate logistic regression demonstrated those reporting being older, female, feeling less healthy mentally and physically (SF12v2 scores) and reporting abuse were more likely to report taking mental health medications (table 2). Additionally, those with chronic conditions and having a higher BMI were also more likely to take mental health medications. However, as the multivariate logistic regression results demonstrate (table 3), only those reporting to be white, and with poorer mental and physical health SF12v2 scores, were likely to be taking mental health medications when controlling for abuse, age, gender, race, BMI, health (mental SF12v2, physical SF12v2 and chronic conditions), and poverty in the final model.

Discussion

While IPV has been reported across all sociodemographic groups, some groups report differential risk include being female, younger, less educated and of minority status.¹⁸ However, our results demonstrate no significant difference in age or race between those who reported abuse and those who do not in this community sample. This is important given that other studies demonstrate younger and minority populations are more likely to report abuse.¹⁸ However, our findings resemble earlier research that abuse victims are more likely to be female and less educated.³ These findings suggest that providers must recognize this risk inherent in all their patients, and not superimpose potential bias in who can be a victim of abuse.

Although the multivariate logistic regression did not show abuse as a predictor for mental health medication use when controlling for other factors, the inter-related nature of all these factors, the data in Tables 1 and 2, and previous literature demonstrate some relationship between medication use (pain and mental health), chronic conditions and IPV. Pharmacists are likely encountering these patients unknowingly. While some may use mail order prescription medication services with no pharmacist contact, many IPV victims are likely to encounter pharmacists when filling and renewing mental health and pain medications. The availability of emergency contraception behind the counter, coupled with the increasing provision of patient centered care services such as medication therapy management,

osteoporosis screenings and menopause education, increase the opportunity for private patient-to-pharmacist contact where patients may report IPV to their pharmacists. Is the profession prepared?

One study indicates many are not. Over a decade ago, a 1996 study reported 97% of 121 pharmacists working in chain pharmacies in Arizona had no IPV training and did not feel prepared to intervene in such matters.³⁴ Interestingly, the sample (n=224) was bifurcated as to whether pharmacists should intervene with more recent graduates (after 1980) and female pharmacists more likely to agree. Sixty-four percent of the respondent pharmacists felt that pharmacists who deal directly with patients should keep information about IPV on hand to provide to patients who need help. Pharmacists can play an active role in health promotion and forwarding HP2010 initiatives through three levels: advocacy, facilitation and provision of services.^{35,36} Previous literature documents the impact of the community pharmacist in the provision of public health promotion in women's health areas such as cardiovascular disease, breast cancer, osteoporosis, menopause and obesity.³⁷⁻⁴² The above survey results infer that pharmacists are comfortable with an "advocacy" level of intervention regarding IPV where brochures and information are distributed. It is unknown what percentage of pharmacies currently provide these public health resources.

Despite the potential for pharmacists to play a role in IPV health promotion, little work has been done to facilitate such efforts. A 1994 article provides pharmacists with a proposed action plan for community pharmacists.⁴³ The article encourages pharmacists to: gain knowledge on the problem; determine legal responsibilities; decide in advance how to react to a potential scenario of discovering, observing or suspecting abuse; be prepared to recommend needed resources; provide and display fliers and posters on IPV; and help to establish and participate in community programs.

A prescription for improving the public health focus on IPV through pharmacists might include the following:

Advocacy: The first-defined level of health promotion, "health advocacy," includes the use of educational posters, attachment of flyers to prescription bags, and review of educational material to patients at the time of medication dispensing and counseling.³⁵ Pharmacies may consider signage, wearing buttons "It is OK to Ask About DV" provided from the Family Violence Prevention Fund (endabuse.org), in addition to placing information in key locations, such as rest rooms. For the community pharmacist, this method could increase awareness of this issue and aide victims at finding needed resources without unduly taxing workflow.

Facilitation: By collaborating with other community providers, pharmacists could sponsor awareness venues at health fairs or in their pharmacies. Linking this issue with other women's health promotion activities in the areas of cardiovascular disease, osteoporosis, breast cancer and menopause or medication therapy management services may facilitate information to reach needed patients. If these activities take place in private settings, patient disclosures could occur. The pharmacists could provide a nonjudgmental approach and assure the patient that help is available by providing appropriate referrals to community-based organizations to conduct safety planning and

assessments is a vital role for patients seeking safety. Toll free hotline numbers could be provided.

Provision: To actually provide detailed intervention and planning for IPV victims, specially trained counselors would be needed. Thus, it is likely most pharmacists would limit engagement to the first two levels of health promotion.

To help pharmacists be more comfortable with the advocacy and facilitation roles, curriculums for community based pharmacist training need to be developed that focus on IPV to increase pharmacists' efficacy with providing information and facilitating appropriate referrals. A foundation may be gaining background knowledge to increase the professions awareness of this public health issue. These curricula must also include active learning components, allowing students and pharmacists to engage in role playing and practice an actual dialogue that might ensue once a disclosure has been made. Also, supportive language might be practiced to help pharmacists feel comfortable intervening when they suspect a patient may be suffering from abuse. These skill sets are not limited to IPV intervention, rather, learning to be a supportive, nonjudgmental healthcare provider are important skills for pharmacists, regardless of the content area involved.

Limitations

The study reports findings from only one upstate New York community which limits the generalizability of the findings. Also, the survey assessed household income and adults living in the home who were over the age of 18. Because we did not know the number of persons living in the home (as children were excluded), we can not utilized the survey household income as a poverty maker. In the alternative, we utilized census track data which provides information on a community level, not subject specific data. Non-response bias could impact the survey results as 70% of the non-respondents may have had varied socio-demographic or health characteristics. For example, there could be a higher rate of IPV in those without phones or those who were afraid to speak with anyone representing the health department.

Conclusion

Roughly 20% of a community sample reported abuse, and the bivariate model suggests those reporting abuse are more likely to take mental health medications. The multivariate model suggests that those reporting abuse also suffer worse mental and physical health, although when controlling for socio-demographic variables, abuse victims do not have an increased odds for taking mental health medications.

Given the changing nature of the community pharmacy setting, being outfitted with private counseling and screening areas for patient care, there may be optimal opportunities to be at the frontline in public health promotion to aide IPV victims. However, for a pharmacist to feel comfortable with engaging in these processes, there must be a move toward training pharmacists through educational efforts both in the pharmacy curriculum and through continuing professional development opportunities. Rather than wait for the unexpected disclosure, it is wiser to practice for such an event as most pharmacists will likely find

themselves encountering an abuse patient, or worse, suspecting a patient is being abused and feeling helpless in the quagmire of how to help.

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Table 1

Comparisons of Variables between Abused and Not-abused

	Abused (n=382)	Not-abused (n=1499)	Percentage Of Abused	P value
Age (years, mean±SD)	39.6±19.2	40.6±19.7		0.3659
BMI (kg/m ² , mean±SD)	27.7±8.4	27.4±8.9		0.5407
SF12v2 mental health (mean±SD)	52.3±13.3	56.1±11.6		<.0001
SF12v2 physical health (mean±SD)	41.3±16.0	44.5±9.7		0.0002
Gender	Male	580	11.4	
	Female	919	20.9	0.0001
Race	Non-Caucasian	96	17.9	0.4066
	Caucasian	1163	15.7	
Education	Less than high school	37	24.9	0.0395
	GED, High school or higher	345	15.6	
Insurance	None	42	28.9	0.0035
	Yes	337	15.3	
Medical care Provider	1 provider	313	16.1	0.9404
	More than 1 provider	36	17.5	
	No provider	32	15.9	
Suicide plan	No	374	16.1	0.0892
	Yes	7	33.9	
Suicide attempt	No	375	16.3	0.8681
	Yes	4	18.2	
Poverty	No	355	16.8	0.6539
	Yes	12	20.0	
Chronic conditions	None	234	13.6	<.0001
	1 or more	114	23.8	
% Below Poverty Frequencies	1(1.7-3.7)	54	8.9	<.0001
	2(3.8-7.5)	78	14.8	
	3(7.9-17.4)	144	22.5	
	4(19.2-51.5)	100	21.1	

Table 2

Unadjusted Bi-variate logistic Regression: Dependent variable is reported mental health medication use

	P value	OR	CI
Age	0.0125	1.019	1.004, 1.034
Gender	0.0115	0.644	0.457, 0.906
Caucasian	0.1952	0.770	0.519, 1.143
Education	0.3275	1.333	0.750, 2.369
Insurance	0.2788	0.678	0.335, 1.370
SF12v2 mental health	<.0001	0.919	0.904, 0.934
SF12v2 physical health	<.0001	0.935	0.920, 0.951
BMI	<.0001	1.059	1.035, 1.084
Medical Provider (1 vs 3)	0.4972	1.281	0.657, 2.501
Medical Provider(2 vs 3)	0.8052	1.216	0.550, 2.689
Abuse (DV/SA))	0.0019	1.744	1.227, 2.480
Poverty(0 vs 1)	0.6217	0.800	0.329, 1.944
Chronic conditions(none vs one or more)	<.0001	0.405	0.290, 0.564
% Below Poverty(1 vs4)	0.7848	1.049	0.654, 1.683
% Below Poverty(2 vs4)	0.0699	0.783	0.497, 1.233
% Below Poverty(3 vs4)	0.0922	1.256	0.814, 1.940

The reference groups are female, white, higher than high school, have insurance, No provider, No abuse, poverty, have chronic conditions and % Below Poverty between 19.2% and 51.5%, respectively for the variables in the table.

Table 3

Adjusted Logistic Regression: the dependent variable is reported mental health medication use

	P value	OR	CI
Abuse (DV/SA)	0.5729	0.869	0.534, 1.416
Age	0.9750	1.000	0.980, 1.021
Gender (1 vs 2)	0.1989	0.762	0.503, 1.154
White(0 vs 1)	0.0001	0.335	0.193, 0.583
BMI	0.1150	1.028	0.993, 1.063
SF12v2 mental health	<.0001	0.907	0.890, 0.925
SF12v2 physical health	<.0001	0.939	0.917, 0.962
Chronic_ conditions(0 vs 1)	0.5029	0.835	0.494, 1.414
% Below Poverty (1 vs4)	0.2703	1.371	0.717, 2.625
% Below Poverty (2 vs4)	0.8906	1.087	0.599, 1.974
% Below Poverty (3 vs4)	0.6359	1.027	0.593, 1.777

The reference groups are No abuse, female, white, have chronic conditions and % Below Poverty between 19.2% and 51.5%, respectively for the variables in the table.