

AS LIFE STRESSORS INCREASE, DO EMERGENCY DEPARTMENT VISITS INCREASE?

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ABSTRACT

Study goal: To examine whether type of stressor and number of stressors predict emergency department utilization among perinatal women.

Methods: Study data was collected via mixed methods: Telephone survey interviews, retrospective medical chart reviews and secondary data analysis. The 326 study participants were recruited during their postpartum hospital stay. Information was collected assessing stressors across five domains: Basic living needs, relational, social, mental health and health. The outcome variable of interest was number of emergency department visits.

Results: More than four out of five (82.8%) of women experience life stressors, many of them (68.1%) across multiple domains. Only 32.8% visited an emergency department during this perinatal period. However, there was a strong linear relationship between emergency department visits and experiencing life stressors. The number of stressors had a greater association with number of emergency department visits than the domain of the stressor.

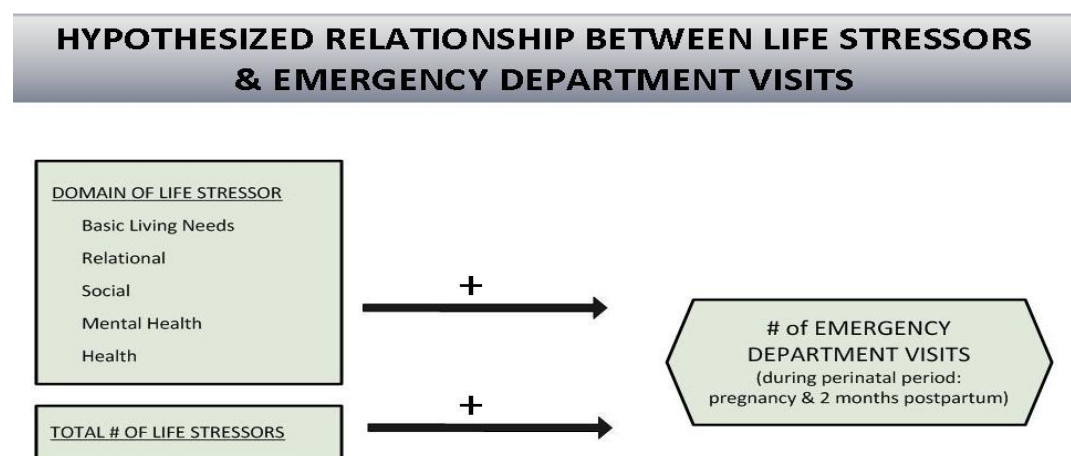
Conclusion:

Life stressors, across all domains, predict emergency department visits among perinatal women.

PURPOSE

Health service utilization has been linked not just to medical disease and injury, but also to psychosocial stressors and quality of life indicators (Cummings, 2004; Ford et al., 2003). Over-utilization of emergency departments, in particular, is influenced by demographic, psychological and social risk factors (Mandelberg et al., 2008). The prenatal and postpartum periods are especially vulnerable to life stressors, which are associated with maternal and infant morbidity and mortality (U.S. Department of Health and Human Services, 2010). Few studies, to date however, have documented the relationship of life stressors to emergency department utilization among this important perinatal population. The goals of this study are to examine:

(1) The association of life stressor domain (basic living need, relational, social, mental health or health-related) with number of emergency department visits, and (2) The association of number of life stressors with number of emergency department visits. The figure to the right depicts the hypothesized relationship under study:



METHODS

Design: This observational study utilized mixed-methods data collection, including telephone surveys, abstracted medical records and secondary administrative data, of a systematic random sampling of postpartum women in Kalamazoo County, Michigan in 2009.

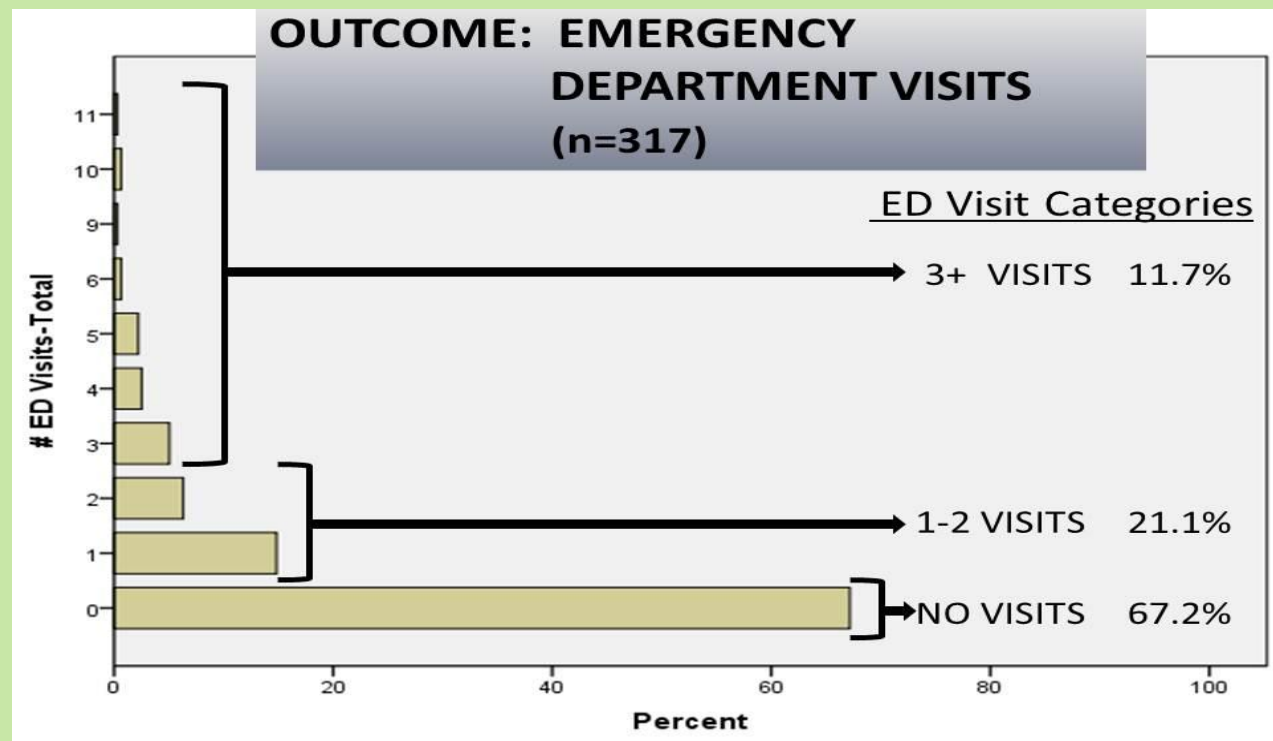
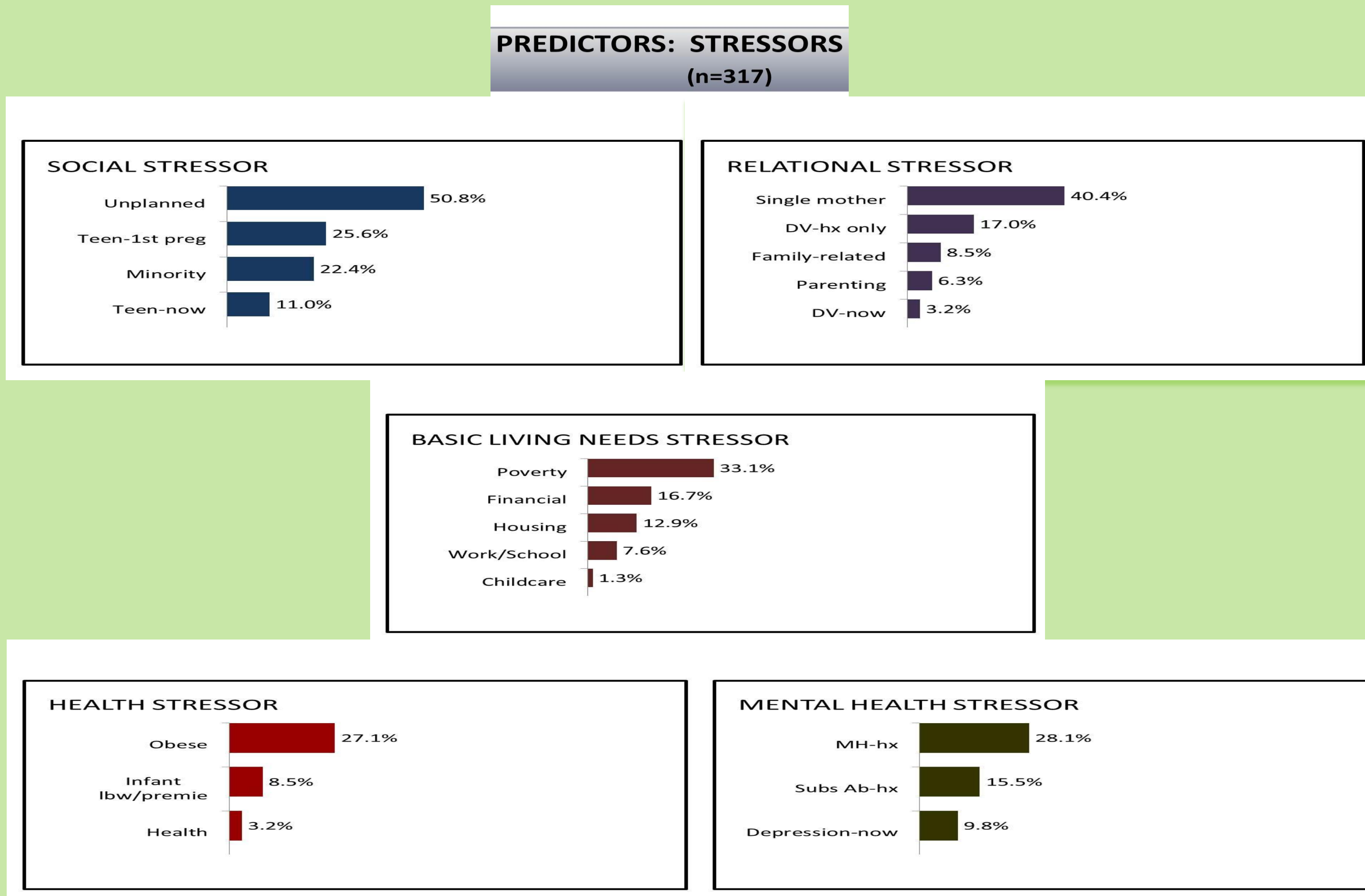
Sample: Three hundred twenty six women, representing ten percent of the annual county birth population, were recruited from the postpartum floors of Borgess Medical Center and Bronson Methodist Hospital between February, 2009 and May, 2009. Eligibility criteria were: Delivered live infant, Kalamazoo County resident, and medically cleared by floor nurse for recruitment.

Procedures: Telephone interviews were completed with study participants at eight weeks postpartum. Prenatal and delivery medical records were reviewed and relevant data abstracted. Study outcome variable, number of emergency department visits, were generated by each hospital's Decision Support department and delivered to the study researcher in an Excel spreadsheet. Study predictor variables, all dichotomous, are shown below:

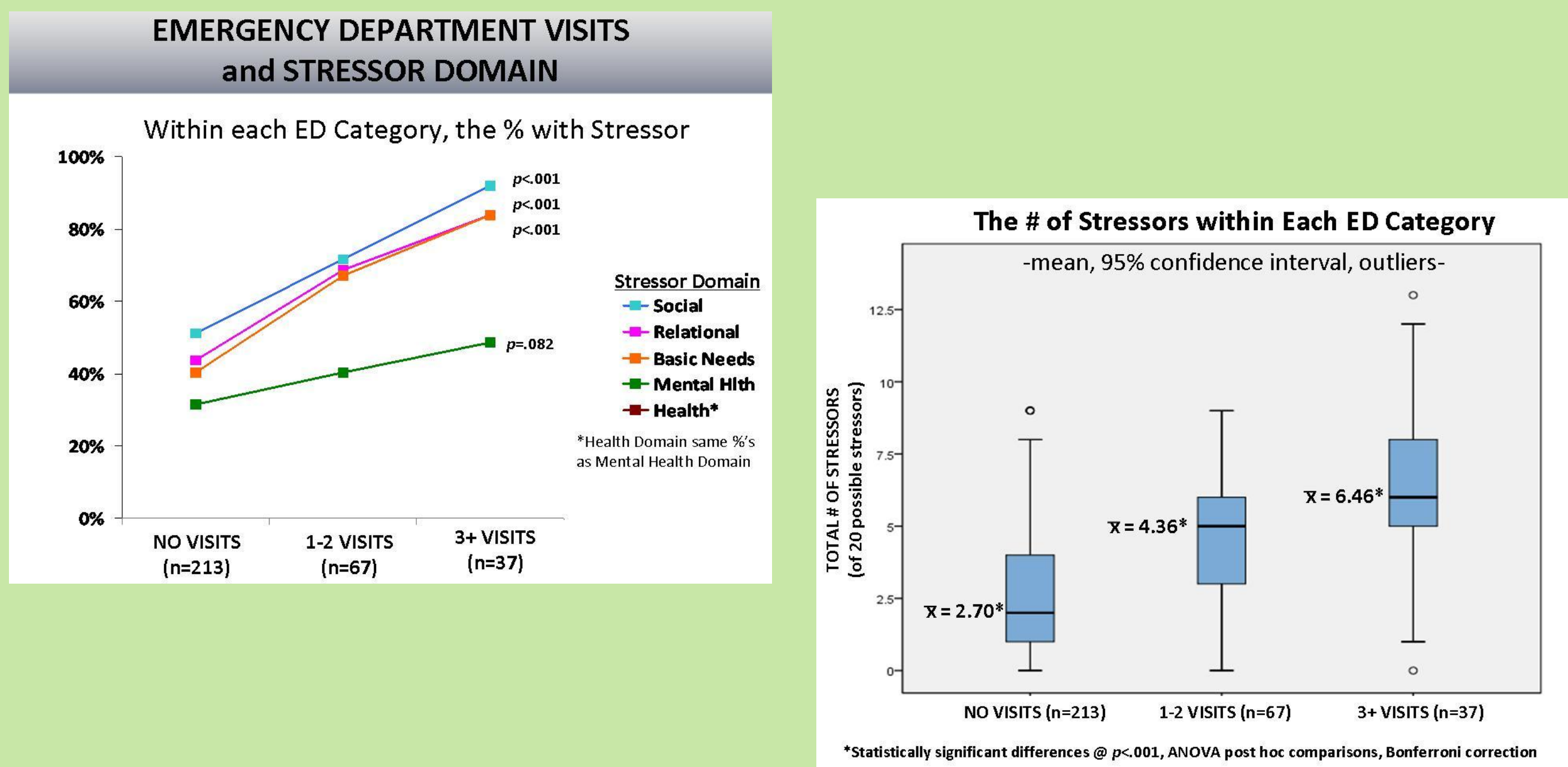
STUDY PREDICTOR MEASURES		
Stressor Domain	Stressor	Operationalized as...
Basic Living Needs	Poverty*	Insurance = Medicaid
	Financial**	Finances are major stressor
	Housing**	Housing is a problem
	Work/School**	Work/School are major stressor
	Childcare**	Childcare is major stressor
Relational	Partner Abuse-His**	History of threats, controlling, physical abuse
	Partner Abuse-Now**	Threats, controlling, phys abuse by current partner
	Family / Child(ren)**	Family or Parenting related stressors
	Single Parent*	Unmarried at time of delivery
Social	Teen Parent-His*	<20 at time of first pregnancy
	Teen Parent-Now*	<20 at time of current delivery
	Pregnancy Unplanned* **	Recent pregnancy was unplanned
	Minority*	Racial or ethnic minority
Health	Legal**	Legal issues (civil or criminal) are major stressor
	Health/Dental**	Health / Medical / Dental issues are major stressor
	Obesity*	Obese BMI
Mental Health	Infant Health*	Infant is low birthweight or premature
	Depression-Now**	Edinburgh Postnatal Depression Screener (12+)
	Mental Hlth-His*	Mental Health Problem (history or prenatal)
	Substance Abuse**	Alcohol or Drug (street, prescript.) problem

STUDY OUTCOME MEASURE:
Number of Emergency Department Visits during pregnancy and two months postpartum

RESULTS: Univariate



RESULTS: Bivariate



RESULTS: Multivariate

LINEAR REGRESSION: Stressor Predictors upon Number of ED Visits									
		Unstandardized Coefficients		Std. Coefficients	t	Sig.	95.0% Confidence Interval for B		
		B	Std. Error				Lower Bound	Upper Bound	
Model 1*	(Constant)	-.061	.157	-.388	.699		-.369	.248	
	Basic Needs Stressor	.634	.199	.194	3.188	.002	.243	1.026	
	Relational Stressor	.277	.213	.085	1.305	.193	-.141	.696	
	Social Stressor	.452	.213	.136	2.120	.035	-.033	.872	
	Mental Hlth Stressor	.330	.182	.097	1.818	.070	-.027	.688	
	Total # of Stressors	.461	.061	.773	7.555	.000	.341	.581	
Model 2*	(Constant)	-.020	.145	-.138	.891		-.304	.265	
	Basic Needs Stressor	-.234	.216	-.072	-1.084	.279	-.660	.191	
	Relational Stressor	-.618	.229	-.189	-2.703	.007	-1.069	-.168	
	Social Stressor	-.409	.227	-.123	-1.800	.073	-.856	.038	
	Mental Hlth Stressor	-.254	.184	-.075	-1.381	.168	-.617	.108	
	Total # of Stressors	.461	.061	.773	7.555	.000	.341	.581	

*Health Stressor Domain exceeds collinearity (VIF) tolerance & removed from model

CONCLUSIONS

Key Findings

- **Life stressors are common:** More than four out of five (82.8%) of women experience life stressors during the perinatal period. Many of them (68.1%) experience stressors across multiple domains.
 - Basic Needs, Relational & Social stressors tend to occur together
 - Mental Health & Health stressors tend to occur together

- **Emergency Department visits are less common:** Only one-third of perinatal women have an emergency department visit. In total, 104 (of 317) study subjects generated 254 ED visits.
 - The majority of visits (225, 88.5%) were for medical conditions, split fairly equally between perinatal-related complaints (104) and general medical complaints (121).
 - Of the remaining visits, 23 (9.1%) were injury-related, and 6 (2.3%) were for crisis (mental health, suicidality, substance abuse).

- **Life Stressors are strongly correlated with ED utilization.** Regardless of domain, women with higher ED utilization have more stressors.
 - Women with no ED visits have the lowest prevalence of stressors, across all five domains; while women with three or more ED visits have the highest prevalence.
 - Interestingly, the weakest relationship is with Health & Mental Health domains.
 - Women with no ED visits have the lowest mean number of stressors; while women with three or more ED visits have more than twice the mean number of stressors.

- **The number of stressors is more important than the domain of the stressor in predicting ED visits.** When the variable “total # of stressors” is added to the regression model, it explains a lot of the variance that was otherwise attributed to the stress-domain variables.
 - Without the “total # of stressors” variable, stressors in the Basic Needs and Social domains were statistically significant predictors of ED visits, and Mental Health stressors was trending towards significance.

Study Limitations

Several key variables (especially demographic and birth outcome variables) were collected through review and abstraction of medical records. As with any information that is originally collected for non-study purposes, the information documented may not precisely measure the variables of interest. Furthermore, several life stressors that were examined have social stigma and thus, may have been underreported.

Conclusions

As life stressors increase among perinatal women, regardless of type of stressor, emergency department visits increase.

Implications

Emergency Department utilization among perinatal women may serve as a red flag signaling stress-overload; and additional help, possibly mental health or social service, may be needed. Among other populations, “frequent flyer” ED programs have successfully linked high-utilizer ED patients with primary care outreach and community resources. Among perinatal women, with their unprecedented access to health and behavioral services, this type of identification and linkage could be particularly effective.

ACKNOWLEDGEMENTS

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