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The Association of Attitudes about Contraceptives with Contraceptive Use in a Random Sample of Colorado Women

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Abstract

Context—Research regarding unintended pregnancy often focuses on how women make decisions about whether or not to use contraceptives, and structural barriers to contraception. Less research examines how multidimensional attitudinal characteristics may be associated with effective contraceptive use.

Methods—In fall 2007, we conducted a random telephone survey of 801 sexually active women in Colorado to assess associations of the attitudinal dimensions of Planning, Partner Communication, and Stigma and Misinformation with contraceptive use. We also examine demographic differences on hypothesized predictors.

Results—Stigma and Misinformation is higher in Latina women, women on Medicaid or with no insurance, women with less than a college degree, and women living in small towns or rural areas. Partner Communication attitudes are most positive among those with a bachelor's degree, and those with less than a high school degree, while they are most negative among those living in small towns and rural areas. In multivariate analysis, planning to use contraceptives is associated with greater likelihood of more effective contraceptive use. Higher levels of planning and partner communication are associated with greater likelihood of any contraceptive use.

Discussion—In addition to addressing structural barriers to contraception, interventions to address the need to plan for contraception are vital to mitigate the high prevalence of unintended pregnancies in the United States.

Keywords

contraception; unintended pregnancy; attitudes; barriers to contraceptive use

The United States has the highest unintended pregnancy rate of all industrialized nations reporting these statistics (Mishell, 2000; Peipert, Madden, Allsworth, & Secura, 2012). The most recent statistics put the U.S. unintended pregnancy rate at about half of all pregnancies (Finer & Zolna, 2014), with just under half of those ending in abortion (Finer & Zolna,

2014). Unintended pregnancies are most common in young, low-income, uneducated, or unmarried women (Finer & Henshaw, 2006) – all groups that tend to have fewer resources to deal with an unintended pregnancy or infant. Children born to women at risk for unintended pregnancy will face greater social and economic disadvantages, and an increased likelihood of mental, physical, and psychosocial challenges (Logan, Holcombe, Manlove, & Ryan, 2007). Latina women experience high levels of unintended pregnancy (Finer & Henshaw, 2006) and are among the group least likely to use contraceptives (Raine, Minnis, & Padian, 2003). Therefore, a better understanding of motivations for contraceptive use among this group specifically is needed.

Necessary precursors for unintended pregnancy prevention are avoidance of sexual activity without use of contraception, and use of effective methods of contraception (Kaye, Suellentrop, & Sloup, 2009). However, structural barriers such as high unemployment, rapid population growth, low socioeconomic status, high levels of religious affiliation, cost and access to services, and lack of insurance coverage (Culwell & Feinglass, 2007; Frost, Singh, & Finer, 2007) also effect contraceptive use. Less is known regarding multidimensional attitudes toward contraception which may interfere with use of effective contraceptive methods. However, previous research suggests several components worthy of further study such as the influence of a partner (James-Hawkins, 2015a; Sable et al., 2000), perceptions that contraceptives make sex unpleasurable, unspontaneous, unnatural, or foreign and invasive (Ayoola et al., 2007), viewing birth control as a hassle or feeling that it takes too much planning (Barber, Gatny, Kusunoki, & Yarger, 2010), wanting to hide sexual activity from others (Ayoola et al., 2007), fear of stigma (Banker, Kaestle, & Allen, 2010; Berntson, Hoffman, & Luff, 2014; James-Hawkins, 2015a), and finally, misunderstanding the effectiveness of contraception (Kaye et al., 2009; Roberts & Noyes, 2009; Woodsong, Shedlin, & Koo, 2004). All of these attitudinal components may affect contraceptive behavior, yet they have never been systematically examined in multivariate analysis predicting contraceptive use.

We address this gap in the research by assessing associations of attitudinal components of contraception, perceived severity of an unintended pregnancy (Campo, Askelson, Spies, & Losch, 2012), and external barriers to contraceptive use (Peipert et al., 2012; Secura, Allsworth, Madden, Mullersman, & Peipert, 2010) with contraceptive behavior. Specific attitudinal components included are stigma and misinformation about contraceptives (Banker et al., 2010; Berntson et al., 2014; James-Hawkins, 2015a), partner communication about contraceptives (Cox, Posner, & Sangi-Haghpeykar, 2010; Davies et al., 2006; James-Hawkins, 2015a), and planning to use contraceptives (Wilder et al., 2009). We use a representative sample of women who are heterosexually active, and may be using contraceptives but are still at risk for experiencing an unintended pregnancy, given high failure rates of some contraceptive methods.

Methods

We report on a telephone survey of a random sample of adult women in the State of Colorado who are at risk of experiencing an unintended pregnancy. The telephone survey was conducted by NARAL Pro-Choice Colorado Foundation as part of the Prevention First

Colorado program. To ensure unintended pregnancy risk, eligibility criteria include women who: 1) are not pregnant or trying to get pregnant at the time of the survey, 2) believe that neither they, nor their partner are surgically sterile, and 3) have had sex with a man at least once in the 12 months prior to the survey. Eligible respondents are identified by screening households using a list-assisted random-digit sample of telephone numbers in Colorado. Quota sampling is used to oversample Latina women as the largest racial/ethnic minority group in the State of Colorado. A total of 22,000 telephone numbers are screened for inclusion in the study. Of these 39% are disconnected or business numbers, 13% refuse on initial contact, 9% have no eligible household member, 3% have eligible household members but refuse to participate, and 9% terminate the call during the screening questions. Three call backs are made before a number is dropped. Of the 2,165 calls made to households identified as eligible during the screening process, 37% of qualifying households (N = 801) complete the survey. Only female interviewers are used and each is bilingual so the surveys can be conducted in either Spanish (13%) or English (87%) as the respondent desires. Verbal consent is obtained at the beginning of the call. On average, the survey takes just under thirteen minutes to complete.

Measures

Contraceptive attitudes scale—A 22-item Contraceptive Attitudes Scale, created for this study, includes subscales of Planning ($\alpha = .70$), Partner Communication ($\alpha = .75$), and Stigma and Misinformation ($\alpha = .69$). The Cronbach's alpha levels reported assess each subscale's internal reliability, indicating a high level of intercorrelation among items. Scale items are generated as a result of a review of the literature suggesting primary psychosocial concepts associated with both contraceptive use and unintended pregnancy (Ayoola et al., 2007; Sable et al., 2000), and comprehensive pilot testing with two previous samples of 1,016 women in waiting rooms of Colorado clinics and 528 women responding to an online survey. Response options are on a one-to-five scale ranging from "strongly disagree" to "strongly agree." Example items include "I make sure I always have birth control with me" (Planning), "I am willing to discuss birth control with my partner before sex" (Partner Communication), and "Only sluts plan for birth control" (Stigma and Misinformation). An exploratory factor analysis is conducted, using a varimax rotation to maximize distinction of items' loadings on extracted factors. Analysis confirms the three-factor structure, although we eliminate one item that does not load highly on any factor and one item that loads equally on two factors (see Table 1). Higher scores on the Planning scale indicate higher levels of planning to use contraceptives. Higher scores on the Partner Communication scale indicate greater willingness on the part of the respondent to communicate with their partners about contraceptives. Finally, higher scores on the Stigma and Misinformation scale indicate a higher level of stigma and misinformation about contraceptives.

Perceived severity of pregnancy—Two questions are averaged to assess perceived severity or negative impact of pregnancy as used in previous research (Kost, Singh, Vaughan, Trussell, & Bankole, 2008). The questions are, "How important is it to you to NOT get pregnant right now?" rated as "Not at all important" to "Very important", and "How would you feel if you found out you were pregnant right now?" rated from "Not at all upset" to "Very upset". Higher values indicate greater perceived severity of an unintended pregnancy.

External barriers—To capture external barriers commonly found to affect contraceptive use (Culwell & Feinglass, 2007; Eisenberg, McNicholas, & Peipert, 2013; Forrest, 1994; Frost & Darroch, 2008; Secura et al., 2010) answers to three questions are averaged assessing: 1) cost: “How would you rate the cost of birth control?”, 2) transportation: “How big an issue is it for you to get transportation to a doctor or clinic that can give you birth control?”, and 3) overall barriers: “How much of an issue is it for you to get birth control?” are averaged. Higher scores indicate more external barriers to contraceptive use.

Contraceptive behavior—Contraceptive use is measured as contraceptive method used at the participant’s last occasion of sexual intercourse. To assess current use of more effective methods for pregnancy prevention, we code reported methods of contraceptive use at last sex as “more effective” and “less effective” strategies. More effective strategies include methods with a 90% or higher effectiveness rate for pregnancy prevention in typical use, such as the birth control pill, injectable, IUD, and the implant or patch. Less effective strategies include methods with lower than a 90% effectiveness rate for pregnancy prevention with typical use such as condoms, diaphragms, withdrawal, rhythm method, or simply not using any contraceptives (Kost et al., 2008).

Demographic variables—Demographic variables included marital status, ethnicity, insurance type, education, residence location, and parity.

Hypotheses and Analysis Structure

First we examine demographic differences in the Contraceptive Attitudes Scale’s three subscales, as well as Perceived Severity, and External Barriers, using analysis of variance. We expect that participants with lower educational attainment, without private insurance, and who live in rural areas will report more external barriers and more stigma and misinformation. We further expect that Latina women will report more external barriers than white women, but that they will score lower on Perceived Severity. We then test if multidimensional attitudes are associated with higher likelihood of 1) any form of contraception versus no contraception, and 2) use of a more effective contraceptive method at last sex versus a less effective method. We hypothesize that higher scores on the Planning, and Partner Communication subscales, and Perceived Severity of Pregnancy will be associated with greater likelihood of both outcomes. We also hypothesize that higher scores on the Stigma and Misinformation subscale and External Barriers will be associated with lower likelihood of both outcomes. Analysis proceeds in two phases for each outcome variable. First, we examine logistic regressions of each independent variable with the outcome variable. Next, all variables are entered simultaneously into a logistic regression. We control for marital status and parity in all analyses as married women (Forrest, 1994; Jones and Mosher 2010) and higher parity women have both been shown to be more likely to use contraceptives (Frost, Singh, Finer 2007; Jones and Mosher 2012; Jones, Mosher, and Daniels 2012; Mosher and Jones 2010).

Results

Sample Description

Age is fairly normally distributed with 35% of the sample under 30, 44% aged 30–39, and 21% 40 or older however, no differences were found in any measure by age. Whites represent 60% of the sample, with 30% Latina and 10% African-American or “Other.” Married women represent 54% of the sample, followed by single women (35%), and divorced women (10%). The majority of women have at least one child (66%). Private health insurance is most commonly reported (60%) followed by no insurance (20%). Medicaid recipients represent 10% of the sample and 10% has some other insurance type. Individuals with less than a high school education represent 12% of the sample, 27% has a high school education, GED, or vocational or technical training, 25% has some college or an associate’s degree, and 36% has a bachelors or higher. Urban and suburban are the most common residential responses at 35% and 36% respectively, with 29% living in a small town or rural area. Compared to the female population of the State of Colorado overall our sample has fewer women in their 20’s and more women in their 30’s (44% vs. 37%) and slightly more women with a high school degree and fewer with an AA or some college (U.S. Census Bureau, 2007). Women in the sample most frequently report using condoms (25%) or birth control pills (25%), with the next most common responses being that they either use no contraceptive at all (18%), or that they have an IUD (13%). A small percentage of women use injectibles (4%) or withdrawal (3%) for contraception, and 5% used multiple forms.

Demographic Differences

Race and ethnicity—Latina women have significantly higher scores on the Stigma and Misinformation scale when compared to non-Latina women. Caucasian women score significantly higher than Latina or women of other races on Perceived Severity, and Latina women score significantly lower than Caucasian or women of other races. Caucasian women report significantly fewer External Barriers than Latinas and women of other races. Women in the Other Race category score significantly lower on the Planning scale, and marginally significantly lower on the Partner Communication scale compared to Caucasian and Latina women (Table 2).

Insurance type and education—Stigma and Misinformation, and External Barriers are significantly associated with insurance type. Specifically, women with private insurance score significantly lower on External barriers than those with other types of insurance, while those with no insurance score significantly higher on External Barriers. The general trend for education is for respondents with a college degree or higher to score higher on Planning and Partner Communication, and lower on both External barriers and Stigma and Misinformation, when we compare them to those without a college degree. An exception to this trend occurs in the less than high school population which scores significantly lower on Perceived Severity of Pregnancy (Table 2).

Location of residence—Women living in a small town or rural area score significantly lower on the Planning and Partner Communication scales, and higher on Stigma and Misinformation compared to those living in either suburban or urban areas.

Contraceptive Behavior

Use of more effective contraceptive methods—In univariate analysis, all five hypothesized predictors are significantly related to use of a more effective method of contraceptive. Respondents scoring high on Planning, Partner Communication, and Perceived Severity of Pregnancy are more likely to use a more effective method. Respondents scoring high on External Barriers and Stigma and Misinformation are less likely to use a more effective method. In a multivariate model predicting use of more effective methods, Planning and External Barriers remain significant, while Perceived Severity of Pregnancy becomes marginally significant. Partner Communication and Stigma and Misinformation, are non-significant in the full model (see Table 3).

Use of any contraceptive method—All five hypothesized predictors significantly predict use of any contraception in univariate tests (see Table 3). In multivariate analysis, the regression coefficients for Planning and Partner Communication are somewhat attenuated, although still significant. Perceived Severity of Pregnancy and External Barriers also remain significant. However, Stigma and Misinformation is no longer significant.

Discussion

To our knowledge this study is the first to capture multiple dimensions of attitudes about contraceptives and investigate their *relative importance* to one another in predicting effective use. Our findings extend previous research by examining attitudes among a state-level sample with women from age 18 to 44, while previous research has focused on 18 and 19 year olds in one community (Barber et al., 2010; Barber et al., 2013), and unmarried women in their late teens and 20s (Jaccard, 2009; Kaye et al., 2009). All women in this sample indicate that they are not currently planning a pregnancy, yet many also indicate that they had recently had sex without the use of contraceptives or with less effective methods, leaving them vulnerable to an unintended pregnancy (Culwell & Feinglass, 2007; Culwell & Feinglass, 2007; Frost & Darroch, 2008; Frost, Finer, & Tapales, 2008; Wells, 2001).

Findings confirm the need for policies designed to reduce cost and make contraceptives more widely available, especially in small towns and rural areas, and to support educational attainment by girls and women. However, our research also suggests that low-cost and easy access to contraceptives is a necessary *but not sufficient* condition for use. We found that multiple attitudinal dimensions are related to using more effective methods of contraceptives, and to any contraceptive use at all. A one-point increase on our Planning scale is associated with two and a half times higher odds of having used a more effective method of contraceptive the last time they had sex, and two times higher odds of having used any form of contraceptive. These strong associations, even after controlling for other attitude dimensions such as Stigma and Misinformation, suggests that interventions designed to increase contraceptive use and reduce unintended pregnancies should address how women can effectively plan for contraceptive use and fully integrate its use into their daily lives and habits. It is arguably easier to teach women how to plan to use contraceptives than it is to convince them that their perceptions of the social constructions of contraception are incorrect. Therefore, although interventions are potentially most needed in communities

with high levels of stigma and misinformation, they are unlikely to be successful unless planning to use contraceptives is simultaneously addressed. Our findings suggest that such communities include Latina women, women on Medicaid or with no insurance, women with less than a college degree, and women living in small towns or rural areas.

Considering the complexity of pregnancy intentions, the eligibility criteria we use to select a sample of women not intending to become pregnant may be considered a limitation of the current study. Strong negative feelings about the possibility of pregnancy reduce pregnancy risks, while positive feelings about parenting and a partner's likely positive reaction to a pregnancy increase pregnancy risks (Barber et al., 2010; Barber et al., 2013). However, many men and women express pregnancy ambivalence, indicating that it is important not to become pregnant or impregnate someone, yet that they would not be upset if a pregnancy did occur (Higgins, Popkin, & Santelli, 2012). Pregnancy ambivalence may also be related to contraceptive nonuse (Frost et al., 2007). Qualitative research indicates that women who do not desire a pregnancy may still romanticize the idea of pregnancy with their partner, may fantasize about how a pregnancy may positively change their lives, and also suggests that the possibility pregnancy may enhance sexual pleasure during intercourse with partners (Higgins, Hirsch, & Trussell, 2008). Many women confuse unintended pregnancy with unwanted pregnancy and therefore remember inaccurately that their children were intended, or accept a pregnancy even if they are not actively seeking it. Therefore, some have argued that pregnancy intentions may be best understood along a psychological continuum as opposed to distinct and concrete categories (Santelli et al., 2003; Schwartz, Peacock, McRae, Seymour, & Gilliam, 2010).

Potential participants who answered that they were currently trying to get pregnant were deemed ineligible, as we are interested in women who are vulnerable to an *unintended* pregnancy. However, the concept of "actively" trying or not trying to get pregnant may not capture pregnancy ambivalence, or true pregnancy intentions, especially in the Latina community (Wells, 2001). Continued refinement of pregnancy intentions assessment, as well as qualitative examination of what pregnancy and unintended pregnancy mean to Latina women will allow for a more complete understanding of how to develop culturally-sensitive intervention content. Additional limitations include concurrent measurement of all variables and outcomes, meaning that no causal inferences can be drawn. We suggest a longitudinal study design for future research which would allow temporal placement of changes in attitudes and their relationship to events such as unintended pregnancy, and the use of specific contraceptive methods. Also, use of a telephone survey limits generalizability to women who have phone lines. Finally, our sample differs slightly from the relative demographic distribution in Colorado, and our overall sample size is somewhat smaller than is ideal which prevented us from weighting our sample to more closely reflect state averages.

Conclusion

To reduce unintended pregnancies in the United States, we need to understand what factors make women successful contraceptive users. Our results suggest that a more comprehensive examination of the attitudinal dimensions that influence successful contraceptive use would

be useful in designing programs to increase contraceptive use. While previous research examines several of these factors in isolation, such as partner communication or cost and access, the current research underlines the importance of including multiple attitudinal components in interventions designed to increase contraceptive use. Our findings suggest that it is of particular importance to incorporate planning to use contraceptives in interventions. No single variable can account entirely for lack of contraceptive use or lack of use of more effective contraceptive methods. Therefore, only a comprehensive effort which addresses contraceptive use from multiple angles, including planning for contraception and communicating effectively with one's partner, will contribute to the reduction of unintended pregnancy.

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Table 1

Contraceptive Attitude Scale Analysis.

	Statements ¹	Factor Loadings			% variance explained	Alpha ²
		F1	F2	F3		
Partner Communication (F1)	I'm willing to ask my partner if he has pregnancy protection with him.	0.62	-0.04	-0.02	13.3%	.75
	I don't mind stopping during sex to get a condom.	0.75	0.04	0.00		
	I care more about safety than being "in the moment" during sex.	0.68	-0.07	0.12		
	I'm okay with stopping sex if I don't have birth control.	0.56	-0.04	0.17		
	I am willing to discuss birth control with my partner before sex.	0.60	-0.03	0.19		
	If a man wants to have sex with me he has to agree to birth control.	0.62	-0.09	0.23		
	If a man cares about me he won't mind using a condom.	0.46	-0.11	0.13		
Stigma and Misinformation (F2) ³	If I use birth control my partner might think I'm being unfaithful.	0.03	0.62	-0.08	12.4%	.69
	If I use birth control I'm "easy".	-0.06	0.67	0.09		
	Why should I use birth control if it can fail?	0.09	0.54	-0.16		
	My boyfriend would think I don't love him if I insisted on birth control.	0.04	0.67	-0.03		
	Only sluts plan for birth control.	-0.13	0.61	0.04		
	No one I know uses birth control.	-0.04	0.54	-0.09		
	I don't have any control over when I get pregnant.	-0.05	0.51	-0.11		
	It's wrong to use birth control.	-0.06	0.37⁴	-0.09		
Planning (F3)	Losing my health insurance would not stop me from using birth control.	0.14	-0.09	0.48	11.6%	.70
	I am never too busy to worry about birth control.	0.21	-0.07	0.61		
	I make sure I always have birth control with me.	0.31	0.00	0.56		
	The side effects from birth control are worth managing.	0.08	0.00	0.56		
	I plan for birth control even when I'm not having sex regularly.	0.09	0.03	0.59		
	I am never too busy to worry about preventing pregnancy.	-0.03	-0.04	0.65		
	I don't like waiting until the last minute to decide about birth control.	0.13	-0.04	0.58		
Eliminated Statement	If I don't have a method available for preventing pregnancy I just won't have sex.	0.39	0.42	-0.05		
	If my usual birth control is unavailable I will use something else.	0.26	0.37	-0.07		

¹Variables used exclude decline to state and don't know answers, including only those who indicated a value of 1 through 5 on the scale.

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² Alpha assesses internal reliability of the scale, cut off used was above .4.

³ The eight variables included in this sub scale were reversed coded.

⁴ These variables were included although they just missed the .4 cut off for inclusion. Authors believe there is a theoretical basis for their inclusion.

Mean differences in Planning, Partner Communication, Stigma and Misinformation, Perceived Severity, and External Barriers by Selected Characteristics.

Table 2

Characteristic	Planning	Partner Communication	Stigma and Misinformation ⁱ	Perceived Severity ⁱⁱ	External Barriers ⁱⁱⁱ
	Mean (SE)	Mean (SE)	Mean (SE)	Mean (SE)	Mean (SE)
Race/Ethnicity					
White	4.13 (.04)	4.43 (.03)	1.27 (.03) [†]	4.87 (.05) [†]	1.93 (.05) [‡]
Latina	4.14 (.05)	4.38 (.05)	1.52 (.05) [†]	4.63 (.07) [†]	2.08 (.07)
Other	3.79 (.12) [†]	4.22 (.10) [§]	1.41 (.06)	4.78 (.11)	2.26 (.13) [‡]
Insurance Type					
Private	4.11 (.04)	4.40 (.04)	1.29 (.02) [†]	4.79 (.05)	1.85 (.04) [†]
Medicaid/Oth. Gov't	4.08 (.07)	4.38 (.07)	1.55 (.07) [†]	4.87 (.09)	2.21 (.11) [‡]
No Insurance	4.09 (.07)	4.38 (.06)	1.45 (.05) [§]	4.75 (.08)	2.31 (.09) [†]
Education					
BA or Higher	4.17 (.05) [§]	4.49 (.04) [†]	1.22 (.03) [†]	4.75 (.06)	1.76 (.05) [†]
AA or Some College	4.04 (.06)	4.42 (.05)	1.35 (.04)	4.93 (.07) [‡]	2.07 (.08)
High School	4.02 (.06)	4.19 (.06) [†]	1.42 (.04) [§]	4.81 (.07)	2.20 (.08) [†]
Less than High School	4.18 (.08)	4.52 (.08) [§]	1.71 (.10) [†]	4.58 (.11) [‡]	2.18 (.13)
Location of Residence					
Small Town/Rural	3.96 (.06) [†]	4.29 (.05) [‡]	1.48 (.05) [†]	4.76 (.06)	2.18 (.07) [†]
Suburban	4.22 (.05) [†]	4.42 (.04)	1.26 (.03) [†]	4.83 (.06)	1.97 (.06)
Urban	4.08 (.05)	4.42 (.05)	1.36 (.04)	4.78 (.06)	1.90 (.06) [‡]

[†] p < .01,

[‡] p < .05,

[§] p < .1

ⁱ Higher means represent increased psychological barriers.

ⁱⁱ Perceived Severity was measured on a 1 to 4 scale with higher means representing increased severity.

ⁱⁱⁱ For External Barriers higher means represent increased barriers.

Table 3

Odds ratios from logistic regression analyses examining the association between Planning, Partner Communication, Stigma and Misinformation, Perceived Severity of Pregnancy, and External Barriers, controlling for marital status and parity.

	Use of a More Effective Contraceptive Method (vs. less effective methods) at last sex	Sex With Contraception (vs. without) at last sex
Planning	2.45t	2.32t
Partner Communication	1.24t	1.74t
Stigma and Misinformation	0.11t	0.65t
Perceived Severity	1.17t	1.45t
External Barriers	0.81t	0.73t
Married	1.16	0.62t
Parity	0.94	0.93
Hosmer-Lemeshow Good-of-fit	0.96	0.95
	<i>i</i> =5.09, <i>p</i> =.83	<i>i</i> = 3.14, <i>p</i> =.92

Note: Each column represents a separate univariate regression controlling for marital status and parity, with the last column representing a multivariate regression analysis entering all variables simultaneously; t *p* .01, t *p* .05,

§ *p*<.1; N's are unweighted.