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Unintended Interviewer Bias in a Community-based Participatory Research Randomized Control Trial among American Indian Youth

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Introduction

Community-based participatory research (CBPR) is, at its core, an alternative approach to conducting research with a specific aim of altering power distributions between researchers and those who participate in the research (Minkler and Wallerstein 2008). CBPR aims to genuinely incorporate community partners with research institutions. To this end, CBPR assumes that: a) genuine partnerships means co-learning, b) research efforts include capacity building, c) findings and knowledge should benefit all partners, and d) CBPR involves long-term commitments (Wallerstein and Duran 2006).

The benefits of a CBPR approach in the social and behavioral sciences are considerable. In a 2004 Agency for Healthcare Research and Quality report on CBPR evidence, they found that 78% of studies that took a CBPR approach to health outcomes reported increase community capacity after the studies were conducted (Viswanathan et al. 2004).

One common implementation of CBPR is to hire and train local community members to implement research with the academic institutions assistance. In some cases this means hiring local program facilitators (Ivanich et al. 2018), interviewers (Sittner, Greenfield, and Walls 2018), research councils (Fong, Braun, and Tsark 2003), or a combination of these or additional efforts to build local partnership.

Employing local community members builds sustainability, increases capacity, allows for transparency, and opens dialogues of meaningful feedback learning between parties. However, it remains an open question if this approach introduces any unintended negative consequences to the overall study design, implementation, recruitment, and data quality.

One major concern for researchers in a CBPR framework that hires local interviewers and facilitators is social desirability effects, specifically those that are based around privacy. We look at three measures of privacy and assess their association with the primary outcomes of the study.

Privacy & Interviewers

Presence of a third party: Is there someone else present during the interview? In these settings participants have often been found to edit their response when asked about sensitive questions, but less so when asked about neutral questions (Aquilino 1993; Gfroerer, Wright, and Kopstein 1997; Hartmann 1995; Mneimneh et al. 2015; Turner and Martin 1984).

Interview location: Is the interview taking place where the participant does not have to worry about disclosure or being overheard? For this study, was the interview conducted in the home or somewhere else?

Pre-existing relationship between the interviewer and the participant: There is real potential for this to occur in the CBPR context when interviewers are hired from small communities that are also the location for the research project. Here, the participant has to additionally consider what kinds of information they are comfortable divulging to a member of their own community with whom they will continue to have contact with after the interview is complete.

Primary Outcomes

Internalizing and externalizing behavior: Assessed using the Achenbach System of Empirically Based Assessment. Includes subscales for anxiety, withdrawn, somatic complaints, rule breaking, and aggression.

Substance use: Participant said yes to any of the following questions. Had a drink that contains alcohol, smoked a cigarette, used marijuana, use another substance to get high.

Cultural participation: Sum of yes responses (1) to participating in activities in the past 12 months. Offered tobacco, participated in ceremonial songs, smudged or saged, participated in ceremonial dance, gone to a traditional healer, sought advice from a spiritual advisor, participated or sang in a drum group.

Cultural Discrimination: Participants were asked 8 questions about discrimination due to their ethnicity. They could respond: never (0), rarely (1), sometimes (2), and often (3). These are summed to make a single measure.

Data & Approach

This study uses baseline data from the Bii-Zin-Da-De-Dah (bē-zen-dä-dē-dä; Listening to One Another; BZDDD) program. BZDDD is an on-going multi-site randomized control trial (RCT) of a family-based substance use prevention program for American Indian pre-adolescents aged 8-10. The program is a culturally adapted evidence-based intervention program (for detailed discussion of the adaptation process see Ivanich et al. 2018) delivered in four communities that share a common language, culture, and history.

Youth and their families were recruited through a school-based and community outreach recruitment strategy. Working with our community partners, we created a web-based interest form that local recruiters could use to collect information from interested families at events, school take-home flyers, and other community outreach. A total of 679 surveys were conducted with 303 families that met eligibility (i.e., youth living in the home of the target 8-10 range, and a caregiver willing to attend the 14-week program) and did not refuse enrollment.

We use multilevel linear mixed-effects models to examine the association between the primary study outcomes and our three measures of privacy. Participants are grouped by their interviewer.

Descriptive Statistics (n = 365)

Statistic	Mean/%	St. Dev.	Min	Max
Female	52%	0.50	0	1
Age	9.10	0.91	7	11
Know Interviewer	26%	0.44	0	1
Present 3rd Party	31%	0.46	0	1
Interviewed in Home	73%	0.45	0	1
Internalizing - Total	16.77	8.99	0	53
Anxiety/Depressed	5.53	3.96	0	20
Withdrawn	4.67	2.92	0	15
Somatic Complaints	6.57	3.89	0	19
Externalizing - Total	7.95	6.92	0	35
Rule Breaking	2.15	2.50	0	15
Aggressive Behavior	5.80	4.91	0	24
Substance Use - Yes	11%	0.31	0	1
Cultural Participation	2.41	2.24	0	7
Cultural Discrimination	13.59	5.44	0	31

Internalizing & Externalizing Behaviors

Table 2: Linear Mixed-Effects models Predicting Internalizing and Externalizing Behaviors

	Internalizing				Externalizing			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Female	0.874	0.808	0.848	0.952	-1.358^{+}	-1.348^{+}	-1.418^{+}	-1.400^{+}
	(0.918)	(0.933)	(0.934)	(0.923)	(0.724)	(0.724)	(0.725)	(0.728)
Age	-1.573**	-1.594**	-1.557**	-1.555**	-0.253	-0.260	-0.277	-0.279
	(0.506)	(0.514)	(0.514)	(0.508)	(0.399)	(0.399)	(0.399)	(0.400)
Know Interviewer	-3.539***			-3.459**	-0.201			-0.200
	(1.042)			(1.049)	(0.822)			(0.827)
Present 3rd Party		0.684		0.530		0.443		0.289
		(1.045)		(1.052)		(0.811)		(0.829)
Interviewed in Home			-0.942	-0.924			0.812	0.770
			(1.013)	(1.016)			(0.786)	(0.801)
Constant	31.556***	30.352***	30.780***	31.228***	11.011**	10.696**	10.956**	10.824**
	(4.669)	(4.777)	(4.732)	(4.723)	(3.682)	(3.709)	(3.672)	(3.723)
N	365	365	365	365	365	365	365	365
AIC	2,628.065	2,639.116	2,638.674	2,631.101	2,454.627	2,454.386	2,453.611	2,457.409

+ p<0.1; * p<0.05; ** p<0.01; *** p<0.001

Table 4: Linear Mixed-Effects Models Predicting Subscales of Externalizing Behavior

	Rule Breaking				Aggression			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Female	-0.682**	-0.674*	-0.684**	-0.682**	-0.681	-0.681	-0.737	-0.719
	(0.260)	(0.261)	(0.261)	(0.262)	(0.515)	(0.515)	(0.516)	(0.517)
Age	-0.033	-0.033	-0.035	-0.038	-0.215	-0.221	-0.235	-0.236
	(0.144)	(0.144)	(0.144)	(0.144)	(0.284)	(0.284)	(0.284)	(0.285)
Know Interviewer	0.229			0.243	-0.453			-0.461
	(0.301)			(0.302)	(0.584)			(0.588)
Present 3rd Party		0.116		0.125		0.314		0.157
		(0.296)		(0.300)		(0.578)		(0.589)
Interviewed in Home			0.107	0.093			0.667	0.655
			(0.288)	(0.291)			(0.559)	(0.569)
Constant	2.759*	2.740*	2.811*	2.686*	8.228**	7.936**	8.119**	8.126**
	(1.328)	(1.339)	(1.327)	(1.344)	(2.619)	(2.640)	(2.613)	(2.647)
N	365	365	365	365	365	365	365	365
AIC	1,709.10	1,709.51	1,709.541	1,712.790	2,205.952	2,206.260	2,205.125	2,208.381

+ p<0.1; * p<0.05; ** p<0.01; *** p<0.001

Table 3: Linear Mixed-Effects Models Predicting Subscales of Internalizing Behavior

	Dependent variable:											
	Anxiety				Withdrawn				Somatic Complaints			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Female	0.219	0.197	0.185	0.209	0.113	0.092	0.107	0.130	0.566	0.591	0.605	0.622
	(0.412)	(0.415)	(0.416)	(0.415)	(0.301)	(0.304)	(0.304)	(0.303)	(0.394)	(0.399)	(0.399)	(0.395)
Age	-0.363	-0.368	-0.369	-0.367	-0.475**	-0.479**	-0.470**	-0.469**	-0.728***	-0.725**	-0.700**	-0.714**
	(0.227)	(0.229)	(0.229)	(0.228)	(0.166)	(0.168)	(0.168)	(0.166)	(0.218)	(0.221)	(0.221)	(0.218)
Know Interviewer	-1.031*			-1.036*	-0.923**			-0.912**	-1.561***			-1.519**
	(0.468)			(0.472)	(0.341)			(0.344)	(0.463)			(0.459)
Present 3rd Party		0.127		0.007		0.077		0.035		0.400		0.466
		(0.465)		(0.473)		(0.340)		(0.345)		(0.458)		(0.454)
Interviewed in Home			0.112	0.143			-0.257	-0.235			-0.739	-0.823^{+}
			(0.451)	(0.457)			(0.330)	(0.333)			(0.450)	(0.442)
Constant	8.989***	8.682***	8.758***	8.984***	9.175***	8.922***	8.973***	9.154***	13.349***	12.632***	12.914***	13.083***
	(2.097)	(2.127)	(2.108)	(2.123)	(1.529)	(1.556)	(1.541)	(1.547)	(2.016)	(2.061)	(2.037)	(2.028)
N	365	365	365	365	365	365	365	365	365	365	365	365
AIC	2,043.564	2,048.371	2,048.383	2,047.459	1,813.122	1,820.399	1,819.839	1,816.617	2,012.701	2,022.836	2,020.977	2,012.712

+ p<0.1; * p<0.05; ** p<0.01; *** p<0.001

Substance Use, Cultural Participation, Cultural Discrimination

Table 5: Linear Mixed-Effects Models Predicting Substance Use, Cultural Participation, and Cultural Discrimination

	Substance Use				Cultural Participation				Cultural Discrimination			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Female	0.016	0.016	0.015	0.015	0.162	0.156	0.158	0.153	0.274	0.267	0.290	0.251
	(0.033)	(0.033)	(0.033)	(0.033)	(0.221)	(0.221)	(0.222)	(0.222)	(0.566)	(0.566)	(0.568)	(0.569)
Age	0.003	0.003	0.003	0.003	-0.034	-0.032	-0.037	-0.035	-0.804*	-0.788*	-0.800*	-0.794*
	(0.018)	(0.018)	(0.018)	(0.018)	(0.123)	(0.123)	(0.123)	(0.124)	(0.313)	(0.313)	(0.313)	(0.314)
Know Interviewer	-0.046			-0.047	0.112			0.111	0.597			0.538
	(0.039)			(0.039)	(0.272)			(0.273)	(0.650)			(0.656)
Present 3rd Party		-0.002		-0.007		-0.156		-0.166		-0.684		-0.648
		(0.037)		(0.038)		(0.257)		(0.260)		(0.640)		(0.652)
Interviewed in Home			0.014	0.015			0.067	0.093			-0.017	0.075
			(0.037)	(0.037)			(0.259)	(0.262)			(0.624)	(0.633)
Constant	0.095	0.084	0.082	0.099	2.524*	2.655*	2.555*	2.625*	20.605***	21.110***	20.718***	20.982***
	(0.167)	(0.169)	(0.167)	(0.169)	(1.150)	(1.157)	(1.147)	(1.164)	(2.884)	(2.906)	(2.884)	(2.917)
N	365	365	365	365	365	365	365	365	365	365	365	365
AIC	195.360	196.806	196.672	199.191	1,599.400	1,599.194	1,599.498	1,602.911	2,275.479	2,275.180	2,276.322	2,278.482

+ p<0.1; * p<0.05; ** p<0.01; *** p<0.001

Conclusions

Presence of a third party: Although 31% of participants completed their interview with a 3rd party present this presence is not associated with any of the key outcomes.

Interview location: 73% of the participants completed their interview in their home, a place where their may have been more of a parental/guardian oversight. However, the location of the interview was not associated with any the key outcomes.

Pre-existing relationship between the interviewer and the participant: Interviewers reported knowing 26% of the children they interviewed. Knowing the participant is reported with a 3.4-3.5 reduction in reports of internalizing behavior ($p < 0.05$). When examining the subscales we show that this association is present among all three subscales: anxiety, withdrawn, and somatic complaints. However, knowing the participant is not associated with changes in reports of externalizing behavior, substance use, cultural participation, or cultural discrimination.

Overall: A longstanding challenge of CBPR projects is that there is greater potential for breaches of confidentiality and privacy when the lines between researcher and participant blur. This is particularly true when we employ interviewers and other research members for a research project situated in their own community (Banks et al. 2013; Holkup et al. 2004). The findings of this paper are therefore largely reassuring as they show very few associations between reduced privacy and edited responses. To address the source of error we suggest employing self-report modules for sensitive questions in the future and providing more reminders about confidentiality of the data throughout the interview. Overall, the lack of significant associations suggests that the CBPR implementation is not introducing sources of error related to privacy and the employment of community interviewers.

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References: Available in a handout from the authors.