

An Egocentric Network Analysis of Women Survivors of Intimate Partner Violence

Social support is a well-established protective factor for survivors of intimate partner violence (Levendosky et al., 2004, Goodman & Smyth, 2011; Latta & Goodman, 2011; Sylaska & Edwards, 2014; Ogbe et al., 2020). Conversely, social isolation and geographical isolation are both associated with increased risk of intimate partner violence (Mojahed et al., 2021). However, little research has characterized the social networks of those who have experienced abuse. Analysis of survivors' close networks may provide the information needed to better tailor future social support interventions.

Social network analysis is a versatile tool for understanding connections between entities, either individuals or groups, in a number of research settings. At their core, social networks are made up of *actors* and the *ties* or the relationships connecting them (Borgatti et al., 2018). It is up to the researcher to determine the ties they are interested in analyzing among a set of actors. For example, a researcher may want to ask about survivors' social ties that provide practical resources. Another researcher may be more interested in emotional support ties. Even among the same set of actors, the structures of the practical resource network and emotional support network may be different. The research question and ties of interest will determine the measures included in the network analysis.

Measures used in social network analysis look at the structural characteristics and composition of a network. Measures include network size, network density, strength of ties, centrality, other structural network measures, and types of relationships in the network (Borgatti et al., 2018). Network size is the total number of actors within the network. Network density represents the ratio of actual number of ties in a network out of the number of all possible ties.

Tie strength can be characterized as a sense of closeness or is indirectly measured by the number or duration of interactions between actors (Borgatti et al., 2018). Centrality is measured in a number of ways to determine the 'importance' of an actor in a network. For example, degree centrality is based on the number of ties an actor has while betweenness centrality measures the number of times an actor is on the path between two other actors in the network.

These measures can be determined by first asking participants to name the people in the network of interest in what is called a name generator (Scott & Carrington, 2014; Knoke & Yang, 2019). The name generator is often followed by a name interpreter to gain demographic and relational data about each network member named by the participant. For example, the researcher may ask how close the participant feels to each named person to determine strength of ties. Demographic questions can be used to determine homophily, or how similar the people within a network are to each other.

The two main types of network analysis approaches in social network research are whole network analysis and egocentric network analysis. Egocentric network analysis involves asking the participant, or the *ego*, to describe their relationships to the other people, or *alters*, in their network (Crossley et al., 2015) Egocentric network analysis is particularly helpful in understanding the network features of individuals from a certain group, such as women survivors of violence.

Several studies to date have included formal social network analyses of IPV survivors' networks (Katerndahl et al., 2013; Willie et al., 2019; Nolet et al., 2021). Katerndahl et al. (2013) found the participants in the IPV group had greater centrality within their network but their networks were smaller than the matched non-abused cohort. This finding may suggest that IPV survivors have greater control over the flow of information between the people in their network

(Katerndahl et al., 2013). Similarly, women in Connecticut who experienced IPV in the past 6 months had significantly smaller networks than women who had not (Willie et al., 2019). Social network characteristics influenced awareness and behavior regarding pre-exposure prophylaxis, with IPV modifying those associations (Willie et al., 2019). Lastly, Nolet et al. (2021) compared the social support networks of IPV survivors at different stages and found they had greater relational autonomy after leaving an abusive relationship. In other words, women had more freedom to make choices after leaving an abusive relationship and entering a shelter. Findings from these initial studies suggest intimate partner violence and the structure of social networks are connected in some manner.

The aim of this pilot study is to describe the social support network characteristics of women who have experienced intimate partner violence in the past two years and compare their social support networks with a comparison group of women who have never experienced IPV. Network characteristics include composition network size, density, and structure.

Method

Participants

Study approval was obtained from the UVA IRB- Social Behavioral Sciences in March 2021 before initiation of participant recruitment. Inclusion criteria for participant selection were as follows: 1) Identify as a woman, 2) Age 18 years or older, 3) Reside in the US, 4) Able to answer questions in English, and 5) Able to answer questions via Zoom or phone. Participants were selected for the IPV group if they had experienced a form of intimate partner violence in the past 2 years. All others were placed in the “No-IPV” group.

Participants were recruited between March 2022 and February 2023 by posting an electronic flyer on social media and distributing the electronic flyer through newsletters of

national IPV advocacy organizations. The electronic flyer contained a link and QR code to direct respondents to a screening form in Qualtrics. Respondents were asked for their name, email and phone number. Participants were screened based on inclusion criteria. The final screening question asked about experience of IPV in the past two years to place participants in the appropriate group.

Screening form responses were reviewed daily in Qualtrics. If the respondent was validated through the screening process and answered “yes” to questions 1-5 and provided at least one form of contact information, the PI contacted the respondent to alert them of their eligibility. This message contained a link to the Qualtrics consent form and an attached list of resources. The resource list contained hotlines and online resources for domestic violence within a larger list of mental health and women’s health resources.

Fifty-four women were enrolled and completed both study sections. Group 1 (IPV) consisted of 26 women who had experienced some form of intimate partner violence within the two years prior to enrollment. Group 2 (No-IPV) included all other women enrolled in the pilot study who had not experienced intimate partner violence in their lifetime. Group 2 consisted of 28 women.

Procedures

Following completion of the consent form, participants were directed to the Qualtrics online survey. The online survey consisted of 5 sections, where participants answered questions about their demographics, general health, depressive symptoms, PTSD symptoms, and experiences of IPV within the last 2 years. The online survey was organized so that the most sensitive questions were placed at the end of the survey. Graduated consent was implemented.

Between sections, participants were given a short description of the section and asked if they wanted to proceed.

Participants who completed the online survey were sent a \$10 Amazon e-gift card. The PI then sent an invitation by email to schedule a Zoom or phone interview. Once a participant had scheduled an interview, the PI confirmed the interview date and time and the participant's choice of a Zoom or phone interview. Instructions for safety and privacy were sent to the participant prior to the interview.

The PI began each interview by asking if the participant was available. Once confirmed, the PI asked the participant if it was an appropriate time to go over some questions about their social support network. If the participant stated yes, the PI then reminded the participant they did not have to answer any questions that made them uncomfortable and they could end the call at any time. If the participant stated no, the PI would then end the call and work with the participant to schedule a new time.

Participants were first asked to list the alters in their network. They were then asked to describe each alter through a name interpreter. Participants were then asked to rate how close each alter was with every other alter in the network. Finally, participants in the IPV group were then asked several open-ended questions about the influence of their social support network on a difficult relationship or abuse they experienced within the last 2 years.

Materials

A demographics questionnaire was developed in Qualtrics. Participants were asked to describe their age, income level, education level, ethnic identity, sexuality, marital status, substance abuse, disabilities, and number of children under 18 in their household.

IPV measures

Seven IPV items taken from the National Intimate Partner and Sexual Violence Survey (Smith et al., 2017) were included in the online survey. Participants were asked if, in the past two years, they experienced physical abuse, emotional abuse, controlling behavior from a partner, physical force or threats to engage in sexual contact, unsuccessful physical force or threats to engage in sexual contact, sexual contact without consent while drunk, high, drugged or passed out, or lied or otherwise manipulated in order to have sexual contact. If participants answered YES to any of the items, they were asked the frequency and whether the last instance was more than 12 months ago. Finally, participants were asked if they needed medical care due to abuse.

Social network instruments

A *multi-name generator* was used to help participants list as many people (or ‘alters’) in their social network as possible. Participants were asked, “Who are the people with whom you discuss personal matters that are important to you?” “Who do you enjoy socializing with?” and, “Who do you feel close to?” If participants listed less than 15 people in their network, they were asked to, “Please list anyone else you are close to that you haven’t listed in the previous questions.”

A *name interpreter* was then administered for each alter listed by the participant in the order they were named in the multi-name generator. Participants were asked to describe each alter’s relationship to the participant, whether the alter identified as female, male or non-binary, age, ethnicity, education level, how close the participant felt to the alter on a scale from 1-5 with 5 being the closest, how often the participant communicated with each alter, and whether or not each alter provided emotional support and/or practical support. Examples of emotional support and practical support were given to the participant.

An *alter-alter interpreter* was administered for all alters. The participant was asked to rate how close they believed each alter was to every other alter. This question was asked for every individual alter. The PI entered each alter into an excel sheet template before asking the participant to rate their closeness to the other alters.

Social network instruments are listed in Appendix A.

IPV and Social Network Interview Questions

A semi-structured interview script was developed to bring additional context to help reveal the ‘meaning structure’ of the social network data (Crossley et al., 2015). Participants in the IPV group were first asked generally about the impact of their social support network on difficulties in their relationship or abuse they may have experienced. Specific questions about helpful and unhelpful support given by specific network members followed.

Analysis

Social network data collected in Excel was cleaned, converted to a CSV file format, and imported into UCINET network analysis software. Demographic and health data collected in Qualtrics were imported to SPSS and cleaned. A codebook was developed for defining and recoding variables in SPSS. Interview transcripts were imported into Dedoose for qualitative descriptive analysis.

Quantitative data was analyzed using Statistical Package for the Social Sciences (SPSS) for Windows, Version 29.0. Demographic variables were imported to SPSS to calculate descriptive statistics. Datasets for each group were created by case selection of IPV values (1 = IPV, 0 = no IPV) in SPSS. Independent samples t-tests were conducted for continuous variables. Chi square tests were conducted for comparing percent Hispanic, percent income level below \$35,000 per year, and percent reporting any disability.

Network size, density, and centrality measures were calculated in UCINET. Network size was calculated manually as the total degree of the network. Network size calculations were entered into SPSS under the variable 'SNAtotalsize'. Density was calculated as the number of actual ties among the total number of possible ties within the network. Degree centrality was calculated as the outdegree or number of outgoing ties of each actor. Average tie strength was calculated as the sum of valued ties divided by the sum of all ties at the highest possible value.

Standard multiple regressions were conducted to determine the predictive value of IPV status on network characteristics while accounting for differences in age and income. IPV was the predictor variable. Outcome variables were social network variables including total network size, network density, and average tie strength. Potential confounders included age and income variables.

Qualitative thematic analysis was conducted to elicit themes from semi-structured interviews of women in the IPV group. Raw interviews were transcribed, cleaned, and de-identified. Qualitative data was analyzed using Dedoose, Version 9.

Results

A comparison of sample characteristics between IPV subjects and control subjects is presented in Table 1. The mean age of IPV participants (33.12) was lower than the mean age of non-IPV subjects (43.18). Ethnicity was similarly matched between both groups. The percent of IPV participants at or below 200% of the poverty line was higher than the no-IPV participants. The percent of participants with a high school education or less was matched between groups, with only 1 participant in each group with no college education. The number of children averaged less than 1 child per participant for both groups. The groups were similarly matched in the percent of participants identifying as having any disability.

Table 1*Characteristics of Social Network Sample*

Descriptor	IPV Subjects (n= 26)	Non-IPV Subjects (n=28)	Statistic (two tailed p)
Age (Mean)	33.12 ± 10.84	43.18 ± 13.37	$t = -3.05 (.004)$
Race/Ethnicity (% Hispanic)	11.54	0	$\chi^2 = 3.42 (.64)$
Income level (% below 35k/year)	46.15	14.29	$\chi^2 = 6.57 (.010)$
Education level (% HS or less)	3.85	3.57	$\chi^2 = .003 (.957)$
# of children	0.35 ± 0.75	0.54 ± 0.999	$t = -0.79 (.436)$
Disability (% Any)	15.38	17.86	$\chi^2 = 0.06 (.808)$
SF-12 Score	31.35 ± 4.40	33.64 ± 5.79	$t = -1.63 (.109)$
CES-D Score	27.12 ± 8.93	17.46 ± 12.86	$t = 3.22 (.002)$
PTSD-C Score	50.50 ± 13.65	33.04 ± 11.77	$t = 5.02 (< .001)$

Table 2 compares the descriptors of the social support networks of the IPV group and the control group. The social support networks of both groups included more female than male or non-binary network members. The network composition based on relationship type was similar between groups. In both groups, the percentage of network members described as ‘friends’ was higher than ‘relatives’ or ‘other’ relationships. The percentage of network members described as having a relationship other than familial or friendship was the lowest for both groups. The most frequent ‘other’ relationship was with coworkers. There were no significant differences between groups based on network gender composition or relationship types.

Table 2

Alter Characteristics

Descriptor	IPV Subjects ($n = 26$)	Control Subjects ($n = 28$)	t Statistic (p)
<hr/> Characteristics of alters <hr/>			
Percentage female	.64 ± .19	.68 ± .17	.45
Percentage Relatives	.30 ± .29	.33 ± .20	.67
Percentage Friends	.56 ± .29	.54 ± .23	.76

Percentage Other	.14 ± .17	.13 ± .15	.88
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Characteristics of Network

Total Size	11.50 ± 5.49	16.75 ± 6.87	.003*
Density	.62 ± .25	.50 ± .20	.079
Degree Centrality	10.50 ± 5.49	15.75 ± 6.87	.003*
Average Tie Strength	.76 ± .12	.70 ± .10	.057

Social Network Size

Total network size was calculated as $n = \text{total number of alters} + 1$ (1 representing the participant). The average total network size of participants in the IPV group was significantly smaller than the networks of participants in the no-IPV group ($p = .005$). The mean network size of the IPV group was 11.50 (+/- 5.49). The mean network size of the no-IPV group was 16.75 (+/- 6.87). The largest network size was $n = 29$, while the smallest network size was $n = 3$. Alter nominations were cut off at 30 alters. However, no participant reached the alter nomination cutoff.

A multiple regression was run to predict network size from IPV status while accounting for income and age. The multiple regression model statistically significantly predicted network

size, $F(3, 50) = 3.975$, $p < .05$, adj. $R^2 = .144$. Only the IPV variable added statistically significantly to the prediction, $p < .05$. Regression coefficients and standard errors can be found in Table 3 (below).

Table 3

Multiple regression results for network size

Size	<i>B</i>	95% CI		SE <i>B</i>	β	R^2	ΔR^2
		LL	UL				
Model						.19	.14*
Constant	19.80	12.941	26.66	3.415			
IPV	-5.756	-9.569	-1.944	1.898	-.431**		
Income	1.722	-2.375	5.820	2.04	.118		
Age	-.105	-.251	.041	.073	-.204		

Social network density

Network density was calculated as the number of ties divided by the number of all possible ties in the network. The average density of the social networks of the IPV group participants was higher than the networks of participants in the non-IPV group. The mean density of the IPV group was 0.62 or 62% of all possible ties. The mean density of the non-IPV group was 0.50 or 50% of all possible ties. However, the difference between the two groups was not statistically significant ($p = .079$).

A multiple regression was run to predict network density from IPV status while accounting for income and age. The multiple regression model was not statistically significant in

predicting network density, $F(3, 50) = 2.594$, $p = .06$, adj. $R^2 = .08$. Regression coefficients and standard errors can be found in Table 4 (below).

Table 4

Multiple regression results for network density

Density	<i>B</i>	95% CI		SE <i>B</i>	β	R^2	ΔR^2
		LL	UL				
Model						.135	.083
Constant	.267	.025	.510	.121			
IPV	.173	.038	.308	.067	.378*		
Income	.054	-.092	.199	.072	.107		
Age	.004	-.001	.010	.003	.252		

Tie strength

Average tie strength was calculated as the sum of actual tie strengths in the network divided by the sum of all ties at the highest strength. The ratio was then converted to a scale between 0 and 1. The calculated mean average tie strength was higher for the IPV group (.76) than the never-IPV group (.70). The difference was not statistically significant.

A multiple regression was run to predict average network tie strength from IPV status while accounting for income and age. The multiple regression model was not statistically significant in predicting average network tie strength, $F(3, 50) = 2.642$, $p = .059$, adj. $R^2 = .09$. Regression coefficients and standard errors can be found in Table 5 (below).

Table 5*Multiple regression results for average tie strength*

Tie Strength	<i>B</i>	95% CI		SE <i>B</i>	β	R^2	ΔR^2
		LL	UL				
Model						.137	.085
Constant	.591	.473	.710	.059			
IPV	.084	.018	.149	.033	.376*		
Income	.005	-.066	.075	.035	.019		
Age	.002	.000	.005	.001	.278		

Centrality

Degree centrality was calculated for each ego. The average degree centrality among the IPV group was significantly lower ($p = .005$) at 10.50 while the average degree centrality of the never-IPV group was 15.75. It should be noted this finding correlates with the smaller average network size of the IPV group.

Emotional and practical support networks

Emotional support network size was significantly larger than practical support networks across both groups. The mean percent of ‘yes’ nominations for emotional support was 86% and 81% for the IPV group and never-IPV group respectively. The mean percent of ‘yes’ nominations for practical support was 60% for both groups. However, there was no statistical difference in emotional support or practical support nominations when comparing the averages of the two groups.

Qualitative findings for IPV group

Participants in the IPV group were asked additional open-ended questions about the impact of violence on their social support networks and key network members who provided support they found helpful or unhelpful. The most prominent theme was the impact of emotional support on the survivor. Another recurring theme throughout survivors' interviews was the importance of female network members and the support they provided. Additionally, awareness of abuse by network members determined whether they knew to give support in the first place. Lastly, survivors described unhelpful reactions and loss of support from network members.

Emotional support was described as the most helpful type of support. In particular, listening was the most frequently named as the most helpful support given by social support network members. Providing advice, allowing the survivor to vent or cry, distracting the survivor, and using humor were also listed as helpful forms of emotional support. Emotional support that felt like validation was helpful as well. A 32-year-old IPV survivor with a network size of 15 describes how validation was helpful,

“Mostly a lot of validation [was helpful], like texting and calling or messaging on social media, you know, validating that I was not crazy. That the things I was experiencing and had experienced were shitty and abusive.”

Awareness of abuse determined whether social network members provided support. Often close friends and female family members were the only social network members aware of abuse. Network members were aware of abuse to varying degrees. Several participants stated their parents were unaware or had minimal information about the relationship, while more details

were disclosed to close friends. Network members in the ‘other’ category, such as coworkers, were either not mentioned at all or were noted as unaware of abuse.

Friends and sisters were named as the most helpful. Other network members named as helpful included mothers and one grandmother. Additionally, participants almost exclusively spoke about female network members when describing helpful forms of support. Only one participant spoke named a male family member (brother) in the interview. Conversely, female network members also gave unhelpful forms of support.

Some forms of unhelpful responses from network members were advice, criticism, diminishing emotions around abuse, chastising, and continuing a relationship with the abuser. Participants found it unhelpful, or even harmful, when social network members continued to maintain a relationship with their abuser. One participant, a 20-year-old college student with a network size of 11, described how she felt upset when social network members continued a relationship with her abuser, but one friend discontinued the relationship,

“And so, for a while after I broke up with my abuser, that continued and I felt really upset but eventually I realized like [friend] was a safe enough person to say, ‘I’m not okay with this.’ And she took that to heart and she has since stopped associating with that person, that meant a lot to me.”

Abuse impacted relationships between the survivor and social network members. Several participants noted changes in their social support networks over time due to their relationship with their abuser. One participant, a 24-year-old woman with a network size of 11, spoke to such loss and subsequently how it impacted their help-seeking behavior,

“I mean I’ve lost some friends because of my relationships. It’s hard, because usually if something’s going on in my relationship, I would have my friends to fall back on. But I feel like if I do that too much, I usually end up losing them.”

Another participant, a 43-year-old woman with a network size of 14, described the change in her network after leaving the relationship,

“At the very end of February 2021, I left with my kids, because it was definitely like there was one group of friends that was more supportive kind of right then. And then as I got further out, it kind of all changed and I’m not really close to those people anymore.”

Discussion

In comparing the networks of women who have experienced IPV in the past two years and women who have not, several findings were significant. The social support networks of women in the IPV group were significantly smaller, networks consisted of more female network members than male or non-binary members, and emotional support was given more frequently and was described as the most helpful form of support.

Survivors’ networks were significantly smaller than the networks of the comparison group of women and IPV status was predictive of network size, whereas income and age were not. The smaller networks of survivors in this pilot study are consistent with the one previous social network analysis comparing the networks of survivors and a control group of women (Katerndahl et al., 2013). However, survivors’ networks were similar in density and average tie strength to comparison women. The density and average tie strength of the ego-networks of the IPV group was higher than the non-IPV group, but these findings were not statistically significant. IPV status did appear to influence network density and average tie strength, while

age and income did not. A future study based on this pilot with a larger sample size may elicit differences in survivors' network characteristics not found here.

Female network members play a significant role in providing support to the women survivors in this pilot study. During interviews with participants in the IPV group, female friends were most often described as providing helpful support. Female family members were also frequently mentioned as providing support. Male family members were more likely to provide practical support. In previous studies, female family members and friends have been reported as the most helpful or supportive among informal supporters and the most sought out by survivors when seeking help (Estrada Pineda et al., 2012, Katerndahl et al., 2013; Kyriakakis, 2014; Rodriguez Hernandez, 2016; Santos et al., 2022; Sylaska & Edwards, 2014; Vieira et al., 2015). The findings from this pilot study further support previous findings on the gender divide of informal support for IPV survivors.

In regard to support given by network members, emotional support nominations were significantly greater than practical support nominations for both groups. The percent of network members providing each type of support to survivors and comparison women was similarly matched on average. Emotional support, such as listening or providing advice or validation, was described as helpful by survivors. This finding is consistent with previous research, as emotional support has been described as a helpful form of support across studies and is the most common type of support provided (Sylaska & Edwards, 2014). Concerned family and friends should continue to be encouraged to provide emotional support and react positively to disclosure of violence.

The distribution of relationship types was similar between survivors and women who have not experienced violence, despite the IPV networks being significantly smaller. These

findings are consistent with the previous study that included a measure of relationship types (Katerndahl et al., 2013). No significant differences were found between groups for the percentages of each relationship type. Among both groups, friends made up over half of the support network, followed by family members. Network members in the 'other' category included coworkers, neighbors, and other acquaintances; this category made up the smallest percentage of all participant networks. These findings are in line with previous SNA of IPV support networks (Katerndahl et al., 2013).

Neither the quantitative and qualitative findings of this pilot study suggest survivors look to these weaker ties for support to the same level as friends and family. When describing the people in their network that provided helpful forms of support, survivors primarily spoke of close female friends and family members. However, future studies should further investigate the support function of network members with weaker ties to survivors.

Several implications for social support of women survivors may be drawn. The women survivors in this pilot study maintain smaller networks and rely mostly on female network members for emotional support. The smaller network size may suggest a degree of social isolation. Social isolation is known to be a risk factor for and consequence of IPV (Mojahed et al., 2021), particularly during the COVID-19 pandemic (Buttell & Ferreira, 2020) when this pilot data was collected. Survivors may maintain a more central role within their own networks and rely on a smaller number of contacts for informal support. One possible explanation may be survivors invest more in the relationships they are able to maintain and seek security within those relationships. As Katerndahl et al. (2013) suggest, it is also possible survivors seek to control information and minimize contact between network members. However, the survivors

participating in this pilot study had greater density within their networks suggesting contact between more network members.

Future social support interventions should continue to provide a focus on emotional support while also recognizing the importance of practical support. While emotional support was the most frequently given across groups and most often cited as helpful in the IPV group, some forms of practical support were listed as helpful. Providing a place to stay was highlighted as a helpful form of practical support, particularly in one severe case of violence in which the participant was leaving the relationship.

Limitations

Due to the cross-sectional nature of the pilot study, changes in the network were not captured in the network analysis. Several participants mentioned there were people they would have listed as alters in their network, but were no longer in contact with at the time of data collection. Reasons for not maintaining these relationships ranged from the participant moving away or differences in taking precautions against COVID. Due to the timing of data collection, it is likely COVID impacted the social networks of both groups.

COVID also impacted recruitment and the method of data collection for this pilot study. In order to make the pilot study accessible during COVID, all recruitment and data collection was conducted remotely. Social media and e-newsletters were used to recruit participants remotely. Three remote methods of data collection were employed: online, telephone, and videoconference. Future studies may employ remote methods of data collection in order to improve accessibility for rural, immunocompromised, and disabled IPV survivors as well as any other IPV survivors that experience barriers to participating in research activities.

The small sample size limits the generalizability of these findings. Additionally, the two groups were not matched on age and income. While a matched design was initially selected in the study planning phase to address confounding, the two groups were ultimately not matched on age or income. The non-IPV group was older and had higher household income on average. These findings are congruent with what is known about protective factors and risk factors for IPV. Secondary education and high socioeconomic status are protective factors while young age is a risk factor for IPV (Abramsky et al., 2011).

The majority of participants that completed the study were recruited using e-flyers on a social media platform. Self-selection likely had an impact on the characteristics of the women who were interested in participating. The sample was limited to women who were active on Twitter at the time or received newsletters from IPV organizations. Since a convenience sample was used, the sample is not representative of all adult women in the United States.

Conclusion

According to the findings of this pilot study, women survivors of IPV have smaller networks than women who have not experienced IPV. This finding is congruent with previous studies. Interestingly, the networks of survivors were found to be denser but not at a statistically significant level. Emotional support was more prominent than practical for both groups, and that emotional support was often given by female network members. Future, large population-based studies using similar network measures are needed to further examine network characteristics of survivors in the US.

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Demographic Name Interpreter Questions

1. How is (INITIALS) related to you?
2. Does (INITIALS) identify as male, female, non-binary or something else?
3. How old is (INITIALS)? (PROBE) What is your best guess?
4. Does (INITIALS) identify as Black, Asian, Latina/o, Native American, White, or something else?
5. How much education does (INITIALS) have?

Alter-Ego Tie Interpreter

1. How close do you feel to (INITIALS) on a scale of 1 to 5 with 1 being not close at all and 5 being extremely close?
2. About how often do you talk to (INITIALS)? Once a year, once a month, once a week, several times a week, or every day?
3. Does (INITIALS) provide any type of emotional support such as listening or giving advice? (Yes/No Emotional Support)
4. Does (INITIALS) provide any type of practical support such as giving a ride or providing a place to stay? (Yes/No Practical Support)

Alter-Alter Interpreter

Please think about the relations between these people you told me about earlier. Some of them may be total strangers in the sense that they wouldn't recognize one another if they bumped into each other on the street. Others may know each other a bit, or they may be especially close. First, think about (1) and (2). How close are they to one another:

4 = Very close

3 = Sort of close

2 = Not very close

1 = Don't know each other

8 = I don't know

(Perry et al., 2018)