

## Correlates of Loneliness among Adults of Childbearing Age

Yvonne Wesley<sup>1\*</sup>, Cheryl A Krause Parello<sup>2</sup> and Minnie Campbell<sup>3</sup>

<sup>1</sup>Y Wesley Consulting LLC, 46 East Cherry Street, Rahway, NJ, USA

<sup>2</sup>College of Nursing, University of Colorado Denver, Anschutz Medical Campus, Aurora, Colorado, USA

<sup>3</sup>College of Nursing, Seton Hall University, South Orange, New Jersey, USA

### Abstract

The purpose of this quantitative study was to examine the relationship between loneliness, pet attitude (PA), and Desire For Children (DFC) among adults of childbearing age.

**Method:** A descriptive correlational design was utilized to conduct an online survey utilizing version 3 of the UCLA Loneliness Scale, the Pet Attitude Scale and the Modified Index of Parenthood Motivation. Demographic factors such as age, gender and race were collected.

**Results:** A total of 215 participants, mainly women ( $n=183$ , 85%), were on average 31.61 ( $SD=8.38$ ) years old. The following statistically significant positive relationships were identified: loneliness with DFC ( $r=.18$ ,  $p=.00$ ), DFC with PA ( $r=.29$ ,  $p=.00$ ), gender with loneliness ( $r=.18$ ,  $p=.01$ ), race with PA ( $r=.36$ ,  $p=.01$ ), and DFC ( $r=.20$ ,  $p=.01$ ). Loneliness was not related to age or race. Pet attitude and DFC were not related to age or gender. Increased loneliness was reported among women. African Americans reported decreased PA ( $p=.000$ ) and decreased DFC ( $p=.00$ ).

**Conclusions:** Women of childbearing age reported more loneliness than men of the same age. Participants with increased loneliness reported increased DFC. Moreover, participants reporting increased DFC also reported positive attitudes toward pets. Gender differences in loneliness and racial differences in PA and DFC emphasize the need for gender- and race-specific interventions targeting adults of childbearing age.

**Keywords:** Loneliness; Pet attitude; Desire for children; Parenthood motivation; Intersectional framework

### Introduction

Loneliness is a complex concept that has an impact on one's health [1]. Moreover, the prevalence of loneliness is not limited to elderly adults. Defined, in part, as social isolation and feelings of emptiness [2], loneliness occurs when a sense of belonging and connectedness are insufficient. The perception that one's relationships or lack thereof, are not living up to some expectation can produce loneliness [3]. Given its impact on health, it is crucial for health-care professionals to gain an understanding of the factors that alleviate loneliness to promote well-being.

Both pets and/or children have been noted in the literature as objects of desire to alleviate loneliness. Specifically, Kjelsvik and Gjengedal [4] found that women making reproductive decisions considered the future and were concerned about loneliness. Historically, Cole [5] noted that the desire for children was a pressing issue for single women in their 30s. Today, pets have become family members and serve as companions. However, the literature is unclear whether loneliness, Pet Attitude (PA), and Desire For Children (DFC) are related and vary as a function of age, gender, and/or race.

The intersectional theory posits that gender and race will influence loneliness, PA, and DFC among people of childbearing age. Some studies showed that women report more loneliness than men [6], while other studies report more loneliness among men [7]. Persons of minority groups have also been found to report increased loneliness [8,9]. These findings supported posits of the intersectional framework, which suggests that gender and race have an influence on loneliness.

The intersectional framework seeks to capture the consequences of the intersection between two or more forms of systematic subordination, including gender and race [10]. The intersectional perspective, which is a feminist research paradigm, addresses the manner in which marginalization creates inequality that results

in gender and racial disparities, according to Nsiah-Jefferson [10]. Therefore, the purpose of this study was to examine the relationships of demographic characteristics, loneliness, PA, and DFC among adults of childbearing age.

### Purpose

This manuscript reports a correlational study that addressed the following questions:

- Is there a relationship between loneliness and PA among adults of childbearing age?
- Is there a relationship between loneliness and DFC among adults of childbearing age?
- Is there a relationship between DFC and PA among adults of childbearing age?
- Does loneliness, PA, or DFA differ by gender or race?

### Literature Review

#### Loneliness

Loneliness is a psychological concept that consists of feelings of social isolation due, in part, to the discrepancy between an individual's

**\*Corresponding author:** Yvonne Wesley, Y Wesley Consulting LLC, 46 East Cherry Street, Rahway, NJ07065, USA, Tel: (732) 382-2120; E-mail: [ywesley@earthlink.net](mailto:ywesley@earthlink.net)

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desired and actual relationships [2]. Comparable with notable theoretical postulates by Weiss [11], Vanderweele et al. [12] suggested that loneliness has a detrimental effect on one's health and described loneliness as a strong sense of isolation, social pain, emptiness, sadness for lack of close friends, unimportance, and worthlessness.

Hawkey et al. [13] found decreased physical activity with increased loneliness among middle-aged and older adults. Hence, Hawkey and Cacioppo [14] theorized that as people age, loneliness accelerates the rate at which physiological resilience erodes, causing more health problems.

Sawir et al. [6] found that women reported loneliness more often than men in a sample of 200 university students in Australia. Graham and Juvonen [9] reported that adolescents of a minority ethnic group were found to report significantly ( $p<.001$ ) more loneliness than majority adolescents in a study of 265 adolescents. Hence, the literature suggests a relationship among loneliness, age, gender, and race.

### Pet attitude

The American Humane Association (AHA) [15] noted that there are many people who own pets as more than just a hobby, and many pet owners regard their pets as part of the family. Their telephone survey results of individuals aged 18 years and older ( $N=1,005$ ) showed that a majority of American households (57%) have dogs, cats, or both.

Empirical evidence suggests that a pet lessens loneliness. Krause-Parello [16] found that pet attachment support had a significant ( $p=.01$ ) mediating effect on the relationship between loneliness and general health in a study of 159 older (ages 55–84) predominately white women (97%) who were pet owners. Krause-Parello concluded that as pet attachment increased, the negative relationship between loneliness and general health diminished. In other words, the more pet attachment, the less impact loneliness had on general health. Cohen [17] found that women reported significantly more feelings of kinship with pets ( $p=.05$ ) than men. Cohen's [17] findings suggested that gender is related to PA. Risley et al. [18] found that whites had the most positive attitudes toward pets compared to other ethnicities. Brown [19] also showed that whites had the most positive attitudes toward pets and slept with the pets in their beds most often upon comparing 175 veterinary students (76 African Americans [AAs] and 57 whites). These studies link race, gender, PA, and loneliness, which may be supportive of the intersectional theory.

### Desire for children

Cole [5] explained how society in the 1990s viewed a woman's life as incomplete without marriage and bearing children. However, Cole's posit did not consider a woman's DFC. Perhaps today's men and women find a sense of identity outside marriage and children and therefore may have a low DFC.

Historically, children were valued for the psychological benefits that they provide for their parents [20]. Moreover, children were a way to avoid loneliness, according to Jones and Brayfield [20]. With data from six European nations, Jones and Brayfield [20] found that women from Great Britain ( $p<.05$ ) and the Netherlands ( $p<.001$ ) were less likely than men to see children as central to their life. Compared with Austrians, persons from Great Britain ( $p<.001$ ), Ireland ( $p<.001$ ), and West Germany ( $p<.001$ ) viewed children as significantly less central, and persons from Italy ( $p<.001$ ) saw children as significantly more central. Furthermore, contrary to what was hypothesized, a significant gender effect was found as women had reported children as less central

than men did ( $p<.01$ ). Similar to the intersectional theory, these findings suggested that nationality and gender have an impact on DFC.

Sable et al. [21] found that unintended pregnancy was not significantly associated with perceived loneliness in a sample of 72 women between the ages of 18 and 35. The extent to which the pregnancies were reported as consciously purposeful was positively correlated with social support ( $r=0.27$ ,  $p<.05$ ), which indicated that women with higher levels of social support were more likely to report their pregnancies as a result of purposeful intention. The findings from this study suggested that loneliness is not a predictor of pregnancy intention. In other words, it did not appear that the women had a desire for pregnancy as a result of loneliness [21].

## Method

### Design

This non-experimental investigation utilized a correlational research design to examine relationships among loneliness, PA, DFC, age, gender, and race in adults of childbearing age in an online survey setting.

### Sample

The 215 participants of this Web-based study approved by the Institute Review Board were recruited through the snowball method, which started with an original e-mail to 65 of the investigators' contacts. A total of 408 people visited the website. The study criteria included persons aged 18–45 to control for the effect of age on loneliness. Participants were asked to complete the UCLA Loneliness Scale version 3 [22], the Pet Attitude Scale (PAS) [23], and the Modified Index of Parenthood Motivation (MIPM) [24]. Of the 408 persons who visited the survey website, 238 completed all the surveys, and 215 were between the ages of 18 and 45. This sample size afforded sufficient power for a 95% chance of correctly rejecting the null that there is a zero relationship between X and Y [25].

Racial/ethnic categories in this study were derived from United States census methods. Persons of childbearing age (18–45) were recruited for this study as DFC is age related [24]. The LGBT (lesbian, gay, bisexual, and transgender) gender category was included as this population is underrepresented [26]. However, due to a low number ( $n=3$ ) of responses, one of the LGBT persons was recategorized into the male group, and two were re categorized into the female group.

### Instruments

**The UCLA Loneliness Scale version 3:** As a measure of emotional and social loneliness, the UCLA Loneliness Scale version 3 [22], was used to measure loneliness. It is a 20-item summative four-point Likert-type rating scale that measures the subjective experience of loneliness by degrees of agreement and disagreement: 1 (never), 2 (rarely), 3 (sometimes), and 4 (often). The scores can range from 20 to 80 with higher scores indicating higher levels of loneliness. "I feel in tune with people around me" is an item from the scale. Psychometric evidence for the UCLA Loneliness Scale has been reported to range from a reliability coefficient of 0.89 to 0.94 across various samples. Among the 215 participants of this study, the Cronbach's alpha reliability coefficient was 0.90.

**PAS:** Attitudes toward pets were measured by the PAS [23]. The PAS is an 18-item summative seven-point Likert-type rating scale utilizing degrees of agreement and disagreement. Templer et al. [23] reported a Cronbach's alpha of 0.93 and a test-retest reliability of 0.92.

Among the 215 participants of this study, the Cronbach's alpha was 0.94.

**MIPM:** The MIPM is a 14-item self-report instrument designed to assess the intensity of DFC among AA women in a straightforward and inexpensive manner [27]. Items 9 and 10 were revised to include attributes of men. Specifically, the word motherhood was replaced with parenthood. In addition, the item that mentioned woman was reworded to mention woman or man. Wesley [27] reported a reliability coefficient of 0.85 within a sample of AA women ages 18–45. Among the 215 participants of this study, the Cronbach's alpha was 0.79.

### Data analysis

SPSS version 16 software for Windows was used for the data analysis. Descriptive statistics included frequency distributions for study variables and demographic data. With Spearman's rho, a two-way contingency table analysis was conducted to determine associations among the study variables.

## Results

### Descriptive analysis

The mean age of the 215 participants was 31.61 ( $SD=8.38$ ), with 33 men and 183 women. The race/ethnicity of the participants was 45% AA, 40% white, 6% Hispanic, and 9% Asian. Marital status was 41% married, 49% single, 6% divorced, and 4% cohabitating. Approximately 87% were employed, and 21% were born outside the United States. The mean loneliness score (63.48,  $SD=9.07$ ) was somewhat above the midpoint: 50 on the scale. The mean PA score (90.34,  $SD=24.23$ ) was also above the midpoint: 72 on the scale. The DFC mean score (49.80,  $SD=8.10$ ) was slightly above the scale's midpoint: 42.

### Associations

The results for question no. 1 did not support a statistically significant relationship between loneliness and PA. A statistically significant positive relationship between loneliness and DFC ( $r=.18$ ,  $p=.00$ ) was found to answer the second research question. For the third question, a relationship between DFC and PA was found to have a statistically significant positive association ( $r=.29$ ,  $p=.00$ ).

Spearman's rho correlation test was conducted to assess the magnitude of the relationship between the variables seen in Table 1. To answer the fourth question, regarding the intersection of age, gender, and race with the criterion variables loneliness, PA, and DFC, age was not related to loneliness, PA, or DFC. Gender was related to loneliness ( $r=.18$ ,  $p=.01$ ), and as shown in Figure 1, women reported more loneliness than men. Race had a significant relationship with PA ( $r=.36$ ,  $p=.01$ ) and DFC ( $r=.20$ ,  $p=.01$ ). However, race was not related to loneliness scores.

To gain a better understanding of the relationship between race and PA, a two-way contingency table analysis was conducted. PA scores were categorized as low if the participant's mean PA score was less than or equal to 90.34 and high if greater than 90.34. Race was found to be significantly related to PA, chi-square (3,  $N=212$ )=45.92,  $p=.000$ , Cramér's  $V=.46$ . The distribution of participants by race suggests the proportions of AA, white, Hispanic, and Asian participants with high positive attitudes toward pets were .30, .80, .46, and .60, respectively. AAs appeared to have the smallest proportion of participants with a high positive attitude toward pets.

A two-way contingency table was also utilized to examine the relationship between race and DFC. DFC scores were categorized as weak if participants' mean DFC score was less than or equal to 49.80 and strong if the DFC score was greater than 49.80. Race was found to be significantly related to DFC, chi-square (3,  $N=213$ )=11.77,  $p=.00$ , Cramér's  $V=.23$ . The distribution of participants by race suggests the proportions of AA, white, Hispanic, and Asian participants with a strong desire for children were .48, .73, .54, and .65, respectively. AAs appeared to have the smallest proportion of participants with a strong DFC.

To further explore the relationship between gender and loneliness, a two-way contingency table was utilized. Because the sample size for the LGBT population was too small ( $n=3$ ), LGBT participants were not included in the chi-square analysis. Loneliness scores were categorized as low if participants' mean loneliness score was less than or equal to 63.48 and high if the loneliness score was greater than 63.48. Gender was found to be significantly related to loneliness, noting a chi-square (1,  $N=215$ )=5.97,  $p=.01$ , Cramér's  $V=.16$ . In other words, the distribution of participants by gender indicates that the proportions of male and female participants reporting a high level of loneliness were .10 and .90, respectively. Women appeared to have the largest proportion of participants with high loneliness. Moreover, simple linear regression showed that a significant proportion of the total variation in loneliness was predicted by gender  $F(1, 210)=4.86$ ,  $p=.029$ . The  $\beta$  of .15 suggests that 15% of the variance in loneliness was predicted by gender.

## Discussion

Loneliness varied as a function of gender and DFC, but not age, race, or PA. Similar to historic postulates by Weiss [11] and a study by Sawir et al. [6], women in this online study reported higher loneliness scores than men. Perhaps women's experiences allow them to place more value on relationships than men, and women may be more strongly affected by deficiencies in relationships. Or perhaps men are more reluctant to disclose socially undesirable feelings like loneliness. Whichever the case, a better understanding of the relationship between gender and loneliness is warranted for the development of intervention

		1	2	3	4	5	6	7	8	9
1	Age	1.000								
2	Gender	.130	1.000							
3	Marital Status	-.258**	.043	1.000						
4	Race/Ethnicity	-.125	.052	-.076	1.000					
5	Employed	-.350**	-.161*	.092	.083	1.000				
6	Born in the U.S.	.103	.087	-.073	.211**	-.061	1.000			
7	Loneliness	.105	.181**	-.223**	.120	-.014	.156*	1.000		
8	Pet Attitude	-.032	.024	-.080	.369**	.041	-.170*	.030	1.000	
9	Desire for Children	-.099	.125	-.148*	.201**	.038	.002	.189**	.294**	1.000

\* is a  $p$  value less than .05; \*\* is a  $p$  value less than .01.

**Table 1:** Spearman's Rho Bivariate Correlations of Select Variables.

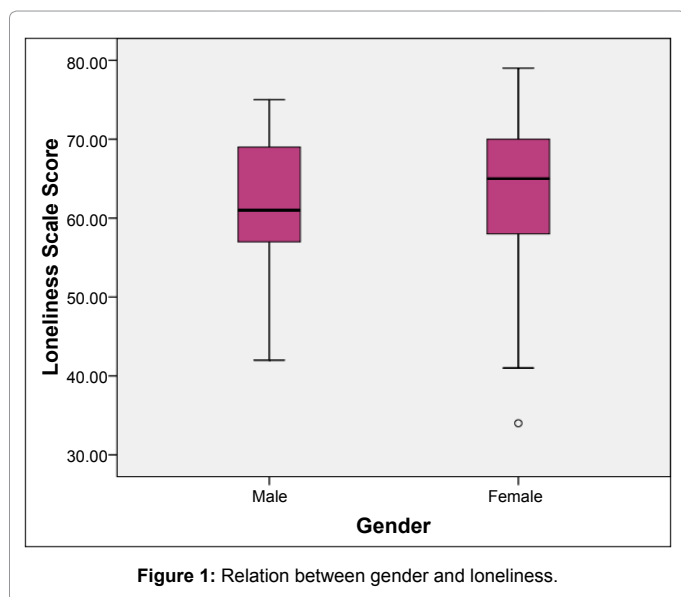


Figure 1: Relation between gender and loneliness.

methods that are tailored for men or women. As noted prior, loneliness has been shown to have ill effects on one's health.

The relationship between loneliness and desire for children lends support for Cacioppo and Hawkley's [28] postulate that loneliness has reproductive value. These authors stated that the need to belong fosters acculturation and sustains maternal nurturance. Coupling and the willingness to share to avoid loneliness sets the stage for progeny to continue, according to Cacioppo and Hawkley [28]. Specifically, the researchers explained that ancient hunter-gatherers who had a predisposition to belong and suffered from loneliness may have been more likely to share food and build families. While the present study was cross-sectional and not longitudinal, [28] dispositions seem to explain the relationship between loneliness and DFC.

Also, similar to Cole's [5] posit that adults may have a desire for children to avoid loneliness; the results of this study suggest a relationship between DFC and loneliness. Perhaps the historical value of children as a source of love [20] outweighs the economic concerns among some of today's men and women. However, further research is needed to determine whether feelings of loneliness are related to the number of children a person age 18–45 has. In addition, more research is needed to determine whether the living arrangements, such as whether the child lives in the home, have an influence on feelings of loneliness as many single and divorced parents share their children.

Age did not have a significant correlation with loneliness among these participants. This finding may be due in part to the sampling design as the study was designed to examine adults of childbearing age (18–45). Prior studies that relate loneliness and age have mainly been conducted among persons ages 65 and older. In this study, the mean age of the participants was 31 years old, while government trend data suggest that the mean age of women giving birth in the United States rose from 25 in 1980 to 27.5 in 2009 [29]. Moreover, these authors noted that U.S. birth rates per 1,000 mothers over age 40 rose from 3.9 in 1980 to 10.1 in 2009.

Statistically significant racial differences in PA and DFC were noted. Similar to Risley-Curtiss et al. [18] and Brown's [19] findings, this online study found that whites had the most positive attitude toward pets. Brown [19] suggested that these findings imply viewing

pets as children instead of animals with a purpose. For example, some individuals may see a dog as the guard of a house or protector of property. To explain the racial differences, Brown [19], similar to the intersectional framework, postulates that economics has an influence, and the way culture is passed down through generations has a potential effect. Below is a quote from Brown [19] that provides reasons for racial differences:

- "African Americans have more pressing priorities such as personal survival and racial discrimination;
- More African Americans than Whites have limited economic means and therefore may have to prioritize advocating for basic social needs;
- African American human-animal relations have been influenced by folktales passed down through the generations that stressed ferocious and threatening animals living in the forests of Africa;
- There has been pervasive discrimination against African Americans seeking recreation in parks and other natural facilities, which limited their contact with wildlife; and
- African Americans have been fighting for basic civil rights while White environmentalists (already having these basic needs met) were seeking to satisfy aesthetic or luxury needs."

Brown [19] also suggested that measures of pet attitude and pet attachment may not encompass the domain of African Americans' beliefs or views on pets.

Racial differences in DFC may be due in part to the low level of loneliness among African Americans. However, Sable et al. [21] found that pregnancy intention was not significantly associated with perceived loneliness. As a surrogate for DFC, pregnancy intention seems to be a result of perceived social support rather than loneliness. Hulseley's [30] findings on racial differences in intention/desire for pregnancy indicated that AAs' late entry into prenatal care may be due in part to a lower level of DFC. Racial differences in DFC need further investigation. As postulated in the intersectional framework, past and present experiences may explain racial differences. In addition, the impact of DFC on prenatal care is worthy of further investigation as it may help clarify behaviors such as no or late prenatal care. The notion that DFC and/or PA mediate loneliness is also in need of more research.

## Limitations

The generalizability of the findings from this study is limited as the snowball method of recruitment may have led to a biased sample. The representativeness of the sample cannot be determined from convenience samples [25]. Specifically, the nonprobability sampling used in this study did not involve random selection. The nonprobability snowball method of recruitment was used despite the risk of introducing bias. The snowball recruiting method relied on referrals from initial subjects to generate additional subjects [25]. In addition, it is not known how many people received an invitation to participate in the study but did not complete the survey; thus, a classic response rate cannot be calculated. Regarding loneliness, PA, and DFA in persons who identify as LGBT, the small sample size prevented valid findings.

## Implications for Practice

Loneliness is an insidious psychosocial problem that can affect people throughout their life span, impairing quality of life. Moreover,



loneliness impacts one's health [13]. With the finding that gender and DFC appear to be related to loneliness among adults of childbearing age, nurses should be prepared to assess their clients' level of loneliness as well as take advantage of state-of-the-art intervention methods to promote wellness.

This study alerts health-care professionals that women between the ages of 18 and 45 are more likely than men to report loneliness as measured by the UCLA Loneliness Scale version 3. While loneliness did not vary as a function of PA, age, and race in this study, the intersectional framework highlighted gender differences, which may be due in part to women's past experiences. Therefore, nursing care plans and therapeutic interactions may benefit from including active listening and therapeutic communication to give women a voice.

The relationship between DFC and loneliness in this age-group warrants further investigation. Specifically, the question of whether a relationship involving a partner or significant other will increase DFC or decrease loneliness is worthy of investigation. Furthermore, the question of whether a specific number of children that will alleviate or diminish loneliness can be raised. Finally, intervention methods that promote wellness among adults of childbearing age are needed.

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