

Young Adults' Implicit and Explicit Attitudes towards the Sexuality of Older Adults*

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RÉSUMÉ

L'intérêt sexuel et la capacité sexuelle peut s'étendre loin dans la vie plus tard, entraînant de nombreux effets positifs sur la santé. Cependant, il y a peu de soutien pour l'expression sexuelle dans la vie plus tard, notamment chez les jeunes adultes. Cette étude a évalué et comparé les attitudes implicites et explicites de jeunes adultes face à la sexualité des adultes âgés. Un échantillon de 120 participants (18-24 ans, dont 58 pourcent femmes) ont rempli un auto-évaluation et une série de tests d'associations implicites, capturant les attitudes envers la sexualité parmi les personnes âgées. Malgré des rapports des attitudes explicites positifs, les jeunes ont révélé un biais implicite contre la vie sexuelle des personnes âgées. En particulier, les jeunes adultes ont montré des partis pris implicites favorisant les activités générales, par rapport aux activités sexuelles, et les jeunes adultes sur les adultes plus âgés. En outre, les biais favorisant les activités générales ont été amplifiées à l'égard de personnes âgées par rapport aux jeunes adultes. Nos résultats mettent en doute la validité de la recherche en s'appuyant sur les déclarations des attitudes sur la sexualité des adultes plus âgés.

ABSTRACT

Sexual interest and capacity can extend far into later life and result in many positive health outcomes. Yet there is little support for sexual expression in later life, particularly among young adults. This study assessed and compared young adults' explicit and implicit attitudes towards older adult sexuality. A sample of 120 participants (18–24 years; 58% female) completed a self-report (explicit) measure and a series of Implicit Association Tests capturing attitudes towards sexuality among older adults. Despite reporting positive explicit attitudes, young people revealed an implicit bias against the sexual lives of older adults. In particular, young adults demonstrated implicit biases favouring general, as compared to sexual, activities and young adults as compared to older adults. Moreover, the bias favouring general activities was amplified with regard to older adults as compared to younger adults. Our findings challenge the validity of research relying on self-reports of attitudes about older adult sexuality.

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Introduction

Western cultures are witnessing rapidly increasing numbers of older people, many of whom report sexual interest, desire, and capacity for sexual activity that extends far into later life (Kontula & Haavio-Mannila, 2009; Lindau et al., 2007; Lindau & Gavrilova, 2010; Nicolosi et al., 2004). Despite the many positive health

and well-being outcomes associated with maintaining a sexual life for older adults (Weeks, 2002), sexual expression in later life often receives little support. Young adults appear to hold the most negative views of sexuality in older adults compared to children and middle-aged adults (Gordon & Avery, 2004; Hagestad & Uhlenberg, 2005; Kite, Stockdale, Whitley, & Johnson, 2005).

Older adults are defined here as individuals 65 years or older, in line with related research (Lai & Hynie, 2011; Sharpe, 2004), whereas young adults refer to those aged 18 to 24 (White, Hingson, Pan, & Yi, 2011). Historically, young adults' attitudes towards the sexuality of older adults have been primarily negative (Angiullo, Whitbourne, & Powers, 1996; Palmore, 2001). However, in keeping with a general trend towards more liberal, permissive, and accepting sexual attitudes among young people (Andersen & Fetner, 2008; Treas, 2002), some recent surveys of young adults suggest a movement towards more positive attitudes (Bouman, Arcelus, & Benbow, 2006; Lai & Hynie, 2011; Pratt & Schmall, 1989).

People who endorse positive attitudes towards the sexual lives of older people frequently reveal incongruent behaviours that hinder sexual expression or reflect avoidance, opposition, or disapproval (Mahieu, Van Elssen, & Gastmans, 2011). For example, in their review, Mahieu et al. (2011) found that despite reporting positive and accepting attitudes towards the sexuality among older adults, nurses often responded unfavourably to the sexual behaviour of nursing home residents by mocking the residents, or using physical barriers to prevent sexual interactions. The inconsistency between attitudes and behaviour may reflect reliance on measures of explicit attitudes – that is, measures assessing participants' self-reports. Self-reports often reflect socially desirable responding: in this case, to express positive attitudes towards sexuality and aging. One method for overcoming these inherent demand characteristics (i.e., changes in a participants' behaviour because of their awareness of what the researcher is investigating) is to assess implicit attitudes – those attitudes operating beyond conscious awareness. In the current study, we identified and compared young adults' explicit and implicit attitudes towards the sexuality of older adults.

Explicit Attitudes towards Sexuality among Older Adults

Ageism refers to prejudice and discrimination towards older persons generally (Butler, 1969). Even young children express aversion to and demonstrate avoidance of older adults (Isaacs & Bearison, 1986). People are especially likely to hold ageist attitudes regarding sexual expression because of pervasive societal messages that link sexuality with youth and fertility (Sharpe, 2004). In addition, many people hold narrow and/or negative views towards diversity in sexual expression generally (Tebbe & Moradi, 2012; Vincent, Parrott, & Peterson, 2011), which likely influence their views of sexuality among older adults. Even people who hold positive attitudes towards older adults and towards sexuality generally still may reveal negative attitudes towards sexuality among older adults (Aizenberg,

Weizman, & Barak, 2002; Bouman & Arcelus, 2001; O'Hanlon & Brookover, 2002; Tomlinson, 1998; Walker & Harrington, 2002; Walker, Osgood, Richardson, & Ephross, 1998). To gain insights into young people's attitudes towards sexual expression in older adults, it is important to assess attitudes towards both sexual expression (i.e., negativity towards sex) and older adults generally (i.e., ageism).

Surveys of younger cohorts have revealed fairly consistent and pervasive negative attitudes regarding the sexuality of older people (Fraboni, Saltstone, & Hughes, 1990; Rupp, Vodanovich, & Credé, 2005; Stuart-Hamilton & Mahoney, 2003). Young adults especially have long viewed the sexuality of older people as "ugly ... grotesque, and incongruous" (Bouman et al., 2006, p. 151) or non-existent altogether (Sharpe, 2004; West, 1975). In one of the first studies to address this topic, college students' attitudes were assessed using a sentence-completion task (Golde & Kogan, 1959). Almost all students indicated that sex for older adults was unimportant, inappropriate, or irrelevant.

A few studies, however, have found that younger generations express generally positive attitudes towards the sexuality of older adults, or at least reveal no signs of ageism. In one study, 293 college students evaluated a scenario depicting either younger or older adults (age 25 vs. 75) engaged in eight sexual behaviours using semantic differential scales (e.g., "good-bad," "nice-awful"; Pratt & Schmall, 1989). The target's age had little to no impact on the students' evaluations indicating that there was no systematic bias against older adults. In another study, 305 young adult university students rated younger (their own age) and older (65 years or older) men's and women's likely interest in a range of sexual activities (Lai & Hynie, 2011). Participants perceived older targets to be significantly less interested in the sexual activities than the younger targets. However, both older men and women were rated as somewhat to very interested in both traditional and experimental forms of sexual activity.

A qualitative study of 277 university students had participants respond to a film about the sexual lives of women over age 65 (Allen & Roberto, 2009). Students' narratives indicated that they endorsed views supportive of expressing sexual needs no matter one's age. An online survey asked 606 college students to rate the acceptability of various sexual behaviours for women in response to vignettes describing the sexual lives of women at age 75 (Allen, Petro, & Phillips, 2009). Participants reported moderately high levels of acceptability as long as the women were depicted as being both physically and mentally healthy. These findings suggest a trend

among young people to endorse more-permissive sexual attitudes compared to views expressed in the past (Treas, 2002).

Are young adults' attitudes towards the sexuality of older adults generally positive as indicated by these studies? Are young people becoming less ageist with respect to sexual expression? Researchers have encountered difficulties in detecting ageism, particularly in studies that have relied on self-reports of attitudes because of the social pressures to disavow prejudicial views (De Paula Couto & Wentura, 2012; Levy & Banaji, 2002). Each of the aforementioned attitude studies used self-report methodologies and often required participants to make direct comparisons between older and younger targets. Thus, these studies may have over-estimated positive attitudes towards the sexuality of older adults by invoking strong self-presentation or social desirability effects in respondents.

Measuring Implicit Attitudes

Greenwald and Banaji (1995) have criticized the use of explicit attitudes because they require cognitive effort, are moderated by higher order processes, and are plagued by issues of socially desirable responding, resulting in overly positive depictions of internalized views. Explicit attitudes are particularly problematic when addressing socially sensitive topics (O'Sullivan, 2008), such as attitudes towards sexuality and aging. By contrast, implicit attitudes are involuntary and effortless responses to stimuli occurring outside of conscious awareness (Greenwald & Banaji, 1995; Turner & Fischler, 1993). Implicit attitude measures assess automatic responses to stimuli, overcoming limitations of self-presentation inherent in explicit measures. Research suggests that implicit attitude measures are more predictive of behaviour outcomes than are explicit measures in such diverse areas as prejudice and racism (Greenwald, McGhee, & Schwartz, 1998), weight discrimination (Chambliss, Finley, & Blair, 2004), and disability biases (Pruett & Chan, 2006). Because explicit attitudes represent the views that individuals are able to access consciously and are willing to report, these attitudes typically only partially resemble implicit attitudes – that is, attitudes that are operating beyond conscious awareness. Indeed, researchers have found that explicit and implicit attitudes in other domains are typically only moderately correlated (Greenwald, Nosek, & Banaji, 2003).

In this current study, we employed the Implicit Association Test (IAT) to assess young adults' implicit attitudes towards sexuality among older adults. The IAT was created to measure automatic associations (i.e., preferential responses) between counterbalanced target stimuli by using a number of response dis-

crimination tasks (Greenwald et al., 1998). Faster sorts between two stimuli indicate a bias towards, or greater ease in making, an association between those stimuli, whereas slower sorts indicate more difficulty (cognitive interference) in making links between two stimuli. Two studies have used the IAT to study attitudes towards sexuality (Geer & Robertson, 2005; Thompson & O'Sullivan, 2012) and found that both men and women have negative implicit attitudes to sexual words and pictures. In addition, three studies that used the IAT to investigate attitudes towards aging among young adults (Gast & Rothermund, 2010; Jelenec & Steffens, 2002; Nosek, Banaji, & Greenwald, 2002) found that young people have an automatic bias favouring stimuli depicting younger as compared to older adults. Researchers have examined implicit attitudes in relation to other areas of sexuality, such as attitudes towards homosexuality (Jonathan, 2008), and the sexual double standard (Sakaluk & Milhausen, 2012), but not with regard to general sexual attitudes, nor with regard to attitudes towards the sexuality of older adults specifically.

In our study, we created two IATs to assess attitudes towards aging (i.e., ageism); one assessed attitudes towards older adults generally (the Aging Nonsexual IAT) and the other towards older adults engaged in sexual activities specifically (the Aging Sexual IAT). We hypothesized that participants would demonstrate an automatic bias favouring younger over older adults for both IATs (hypothesis H1). However, because sexuality is a sensitive social topic and thus likely to generate some discomfort relative to more generalized topics, we expected that this difference would be greater for sexual than for non-sexual activities for both men and women (hypothesis H2).

We also created two separate IATs to assess sexual attitudes (i.e., negativity towards sex); one assessed attitudes towards sexual activities in young adults (the Sexual Young Adult IAT, and the other assessed attitudes towards sexual activities among older adults (the Sexual Older Adult IAT). Again, because sex is a socially sensitive topic, we expected a bias in favour of general as compared to sexual activities for both younger and older adults (hypothesis H3). However, because of societal messages linking sexuality and youth, we expected that this bias would be greater for older targets as compared to younger ones (hypothesis H4). In addition, in keeping with gender role socialization, we expected that the bias in favour of general over sexual activities would be greater for women than for men (hypothesis H5). Women tend to demonstrate less tolerance for (and more negative attitudes overall towards) the sexuality of older adults compared to men (e.g., Allen et al., 2009). These findings correspond to research indicating that women generally

hold more conservative (less permissive) sexual attitudes compared to men (Oliver & Hyde, 1993; Petersen & Hyde, 2010).

Predictors of Attitudes towards Sexuality among Older Adults

We also sought to examine whether general attitudes towards aging and/or attitudes towards sexuality are associated with explicit and implicit attitudes towards sexuality and older adults. There is some evidence that both types of attitudes are associated with explicit attitudes towards sexuality and older adults, although researchers have not examined their association with implicit attitudes. For example, sexual attitudes have been shown to predict greater acceptance among college students of the sexual expression of older adults (Allen et al., 2009). Similarly, ageist attitudes have been shown to be related to traditional views about sexual interests among older adults (Lai & Hynie, 2011). Our final hypothesis (H6) was that individuals with more-permissive aging and sexual attitudes would demonstrate more-positive attitudes towards older adults' sexuality on both the explicit and implicit measures.

The Current Study

In this study, we sought to identify and compare young adults' explicit and implicit attitudes towards the sexual lives of older adults. We assessed both implicit and explicit attitudes with the aim of developing a better understanding of attitudes towards the sexuality of older adults and possible discrepancies between individuals' reported versus internalized views. Factors likely associated with these attitudes, namely (explicit) ageist and sexual attitudes, were also explored.

Method

Participants

The study participants were 134 students who were attending an Eastern Canadian university. Because of the heterosexual nature of the stimuli used in the study, nine participants indicating a sexual orientation other than heterosexual were removed from data analyses. We also excluded five participants because of missing data (greater than 10%) and 18 participants who had an error rate (i.e., categorized stimuli incorrectly) of 30 per cent or greater on the IAT. Thus, our final sample size consisted of 120 participants (50 men and 70 women).

All participants were aged 18 to 24 ($M = 19.2$ years). Participants were predominantly White (91.4%) and English-speaking (93.3%). Almost all (93.3%) were born in Canada. Over half of our participants indicated that they were in a committed relationship at the time of the study (8.3% married or cohabitating and 44.2%

dating someone exclusively), 8.3% were dating someone but not exclusively, and 39.2% indicated that they were not dating anyone.

Measures

Background Questionnaire. Participants provided their background information including age, gender, ethnicity, relationship status, and sexual orientation.

Fraboni Scale of Ageism (Fraboni et al., 1990). The 29-item Fraboni Scale of Ageism assesses attitudes towards aging, in particular the affective components of prejudice and discrimination against older adults. Respondents indicated their agreement with each item on a 5-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5). We reversed the scale scoring for ease of interpretation so that higher scores indicated more-permissive attitudes towards older adults (Explicit Aging Attitudes). Examples of items included "I do not like it when older people try to make conversation with me", and "I personally would not want to spend time with an older person." Research indicates that the scale has strong reliability and validity (Fraboni et al., 1990; Rupp et al., 2005; $\alpha = .85$ in the current study).

Brief Sexual Attitudes Scale – Permissiveness Subscale (Hendrick & Hendrick, 1987; Hendrick, Hendrick, & Reich, 2006). The Brief Sexual Attitude Scale is a multi-dimensional measure of sexual attitudes that assesses the following dimensions: conservatism/permissiveness, instrumentality, communion/relationality, and sexual practices. We used the 10-item Permissiveness Subscale (e.g., "It is okay for sex to be just good physical release", "I do not need to be committed to a person to have sex with him/her"; Explicit Sexual Attitudes) as our measure of tolerance. The other subscales assessed constructs irrelevant to our hypotheses. Participants indicated their agreement with each item on a 5-point Likert scale ranging from *strongly agree* (1) to *strongly disagree* (5). We reversed scoring on this scale so that higher scores indicated more-permissive attitudes. The Permissiveness Subscale and the measure as a whole have strong psychometric properties (Hendrick et al., 2006; $\alpha = .90$ in the current study).

Attitudes towards Sexuality of Older Adults Scale. Because no appropriate explicit measure could be found, we adapted a measure of attitudes towards sexuality in disabled people to measure explicit attitudes towards sex among older adults (Scotti, Slack, Bowman, & Morris, 1996). Respondents indicated the extent to which they believed it was acceptable for older adults to engage in each of 16 behaviours (e.g., masturbation, prolonged kissing with a partner in public, oral sex without a condom) on a 5-point Likert scale ranging from *completely unacceptable* (1) to *completely acceptable* (5). The original measure has strong psychometric properties

(Scotti et al., 1996), but because it was modified significantly, it is unclear to what extent those data can be applied to the current measure. Internal consistency for the modified scale was high ($\alpha = .86$).

Implicit Association Test (Greenwald et al., 1998). For the current study, we created two groups of two IATs. The first group assessed biases in attitudes towards aging by contrasting photographic stimuli of older people with stimuli of younger people. In particular, the first (Aging Nonsexual IAT) compared stimuli of younger people to older people engaging in general activities (i.e., playing chess, grocery shopping, having dinner). The second (Aging Sexual IAT) contrasted stimuli of younger people to older people engaging in sexual activities with an individual of the other gender (i.e., mutual masturbation, oral sex, penile-vaginal intercourse). The second group of IATs was designed to measure attitudes towards sex by contrasting the same stimuli of general activities with the stimuli of sexual activities. We used both sexual and general activities to assess bias in sexual and non-sexual contexts as well as to control for discomfort that many individuals feel in responding to sexual stimuli. Specifically, the third IAT (Sexual Young Adult IAT) contrasted stimuli of younger people engaging in general activities to stimuli of young people engaging in sexual activities, whereas the fourth IAT (Sexual Older Adult IAT) contrasted stimuli of older people engaging in general activities to older people engaging in sexual activities. Four IAT tests were required to perfectly counterbalance both older and younger targets (to assess ageism in attitudes) with general versus sexual activities (to assess negativity towards sex) because each IAT captures biases in one dimension only.

Each IAT protocol was programmed using Inquisit 3 for Windows from Millisecond Software (www.millisecond.com). The IATs were presented on a personal computer and followed the standard paradigm (Greenwald et al., 1998). This experimental procedure incorporated five blocks of stimuli, with the third and the fifth blocks providing the critical data. The first block included 20 trials that introduced the participant to the categorical stimuli. The second block was identical, but required that the participant sort the attribute dimension (e.g., pleasant and unpleasant) rather than the categorical dimension (e.g., older people and younger people). The third block was the first test block, in which the categorical dimension was paired with the attribute dimension (e.g., sexual with pleasant and neutral with unpleasant). A total of 40 discrimination trials were used to collect the critical data. The fourth block, similar to blocks one and two, switched the location of the attribute labels, so that they appeared in reverse corners of the screen. The fifth block was the final test block and was identical to the third block, but

required opposite associations between both dimensions (e.g., sexual with “unpleasant” and neutral with “pleasant”). In sum, participants completed three practice blocks with 20 discrimination trials each and two critical trial blocks with 40 discrimination trials each.

During the IAT blocks, stimuli were presented in the middle of the screen with a black background. We used neutral (e.g., couple playing chess, couple shopping together) and sexual (e.g., couple engaging in oral sex, couple engaging in penile-vaginal intercourse) categorical images selected from a research database. We used pleasant (e.g., “joy” and “beautiful”) and unpleasant (e.g., “nasty” and “horrible”) words for the attribute dimension also selected from a research database. The category names were presented in the upper corners of the screen, one in each corner. Participants were asked to associate the stimuli with one of the two categories according to a given rule. They pressed the “e” key to indicate the stimuli should be sorted to the left category and the “i” key to sort to the right category. The stimulus remained on the screen until the participant correctly associated it with a given category. According to the most recent sorting rule presented, if it was incorrectly sorted, the program flashed a red “x” on the screen until it was sorted correctly. Administration of all IAT protocols took approximately 40 minutes in total.

Computation of IAT Scores. The IAT generates a difference score (i.e., D score) that is calculated using a standard scoring procedure (Schnabel, Asendorpf, & Greenwald, 2008). Specifically, the algorithm computes a D score for the two test blocks by calculating the difference between the response latencies divided by the total standard deviation (Nosek, Greenwald, & Banaji, 2005). The algorithm addresses two types of errors: errors from exceptionally fast response times (before stimuli are presented) and exceptionally slow response times (suggesting distraction or task interruption). In particular, latencies that were quicker than 300 ms were recoded to equal 300 ms, and latencies exceeding 3,000 ms were recoded to equal 3,000 ms.

D scores are reported on a continuum ranging from -2.0 to $+2.0$. Negative D scores in the Aging Nonsexual IAT reflect a stronger automatic bias favouring general activities among young adults as compared to general activities among older adults, whereas positive D scores reveal a stronger automatic bias favouring general activities among older adults as compared to general activities in younger adults. In the Aging Sexual IAT, negative scores reflect a bias in favour of sexual activities in young adults over sexual activities in older adults, whereas positive scores reflect a bias in favour of sexual activities in older adults over sexual activities

in young adults. In the Sexual Young Adult IAT, negative scores indicate a bias favouring general activities in younger adults over sexual activities in younger adults; positive scores indicate that the bias is reversed. Finally, for the Sexual Older Adults IAT, negative scores reveal a bias favouring general activities among older adults over sexual activities in older adults, and positive scores mean that the bias is reversed. In each case, zero indicates no automatic bias. This scoring procedure produces higher internal consistencies, higher correlations with other implicit measures, higher correlations with explicit measures, and is more resistant to extraneous variables than the original scoring algorithm that did not incorporate error responses (Greenwald et al., 2003).

Piloting of IAT Stimuli

For piloting purposes, 25 participants were asked to categorize the 40 IAT images into their proper categories (i.e., older sexual, younger sexual, older general, younger general) as fast as possible. The stimuli that were placed in the correct category the most efficiently were the ones chosen for actual data collection. Following procedures used successfully in another IAT image-based study (Thompson & O'Sullivan, 2012), efficiency was calculated using a response latency metric and the number of errors made when associating the stimuli with the target categories. Five out of ten pictures in each category were chosen for creation of the four IATs we used in this study.

Procedure

Participants were recruited from introductory psychology courses via an academic online scheduling system. Recruitment advertisements indicated that participants would be asked to complete a questionnaire package as well as an assortment of computerized tests evaluating their associations with regard to sexuality across the lifespan. Upon arriving for the study, participants were tested individually in a private research space. After providing informed consent, in line with standard definitions used in psychological research (Orimo et al., 2006), respondents were told that the term "older people" was used to refer to "anyone equal to or over the age of 65". Each participant completed the four separate IATs, with each IAT taking approximately 10 minutes to complete, followed by the package of questionnaires. All participants received extra credit in their introductory psychology course and were debriefed about the purpose of the study. The study was approved by our institution's ethics review board.

Results

Implicit and Explicit Attitudes towards Sex among Older Adults

Participants reported very positive explicit attitudes towards sex among older adults, with a mean score of 4.26 per item out of a possible 5 ($SD = 8.95$). In terms of implicit attitudes, as predicted, participants' Aging Nonsexual IAT ($M = -.46, SD = .37$) and Aging Sexual IAT ($M = -.48, SD = .39$) scores both revealed an implicit bias favouring younger people over older people (H1) for both general and sexual activities. In addition, participants' Sexual Young Adult IAT ($M = -.36, SD = .48$) and Sexual Older Adult IAT ($M = -.54, SD = .44$) scores revealed an implicit bias favouring general activities as compared to sexual activities among both younger and older adults (hypothesis H3). To determine the extent of association between the implicit and explicit measures, we examined the bivariate correlations between Explicit Aging Attitudes and our two implicit measures of attitudes towards sex among older people (Aging Sexual IAT and Sexual Older Adults IAT) (see Table 1). Contrary to what we expected, neither of the correlations was significant ($r = -.01$ and $r = .12, p > .05$ for the Aging Sexual IAT and Sexual Older Adults IAT respectively).

Differences in Implicit Aging Attitudes

To determine the effects of gender and target age (hypothesis H2) on the first IAT group (Aging Nonsexual IAT and Aging Sexual IAT), we conducted a 2 (IAT) \times 2 (gender) mixed-design ANOVA. Contrary to our predictions, participants' scores on the Aging Nonsexual IAT (older versus young people engaging in general activities) and the Aging Sexual IAT (older versus younger people engaging in sexual activities) were not significantly different – $F(1, 188) = .70, p = .40$ – indicating that the bias in favour of younger over older people did not vary significantly as a function of the activity in which they were depicted engaging. In addition, men's and women's responses were also not significantly different from one another: $F(1, 118) = 3.37, p = .07$.

Differences in Implicit Sexual Attitudes

We used the same design to assess the effects of gender and target age (Sexual Older Adult IAT) on the second IAT group (Sexual Young Adult IAT and Sexual Older Adult IAT). The results indicated that the main effect for IAT was significant: $F(1, 118) = 207.80, p < .001$. Participants' scores on the Sexual Young Adult IAT (general versus sexual activities in older adults) were significantly lower than were their scores on the Sexual Older Adults IAT (general versus sexual activities in younger adults). This finding suggests that participants' bias in favour of general activities over sexual activities was

Table 1: Correlations among variables used in this study

Study Variables	Bivariate Correlations						
	1	2	3	4	5	6	7
1 Aging Nonsexual IAT							
2 Aging Sexual IAT	.18						
3 Sexual Young Adult IAT	-.04	.18					
4 Sexual Older Adult IAT	.13	.17	-.07				
5 Explicit Sex and Aging Attitudes	.20*	-.01	-.14	.12			
6 Gender	.05	.20*	.08	.04	-.01		
7 Explicit Sexual Attitudes	-.02	.01	-.18	.20*	.07	-.32**	
8 Explicit Aging Attitudes	.14	.02	.24**	.05	.24**	.30**	-.25**

^a N = 120

^b Gender: Men = 0, Women = 1

^c Aging Nonsexual IAT = younger people vs. older people engaging in general activities; Aging Sexual IAT = younger people vs. older people engaging in sexual activities; Sexual Young Adult IAT = general activities vs. sexual activities among younger adults; Sexual Older Adult IAT general activities vs. sexual activities among older adults

^d * p < .05; ** p < .01

significantly stronger when viewing photos of older people, in line with hypothesis H4. Men’s and women’s responses were not significantly different from one another – $F(1, 118) = .90, p = .34$ – which is contrary to hypothesis H5.

Predicting Implicit and Explicit Attitudes towards Sex among Older Adults

We used three separate hierarchical multiple regression analyses to test the extent to which gender, Explicit Aging Attitudes, and Explicit Sexual Attitudes were associated with both explicit and implicit attitudes towards sexuality among older adults (hypothesis H6). The first multiple regression analysis predicted explicit attitudes towards sexuality and aging (see Table 2). Examination of the zero-order correlations indicated that individuals with more-positive Explicit Aging Attitudes reported more-positive explicit attitudes towards sexuality and aging. Results of the multiple regression analysis indicated that the set of predictors was significant: $R^2 = .08; F(3, 116) = 3.15, p = .03$. Only Explicit Aging Attitudes uniquely accounted for a significant amount of the variance.

Table 2: Multiple regression analysis predicting explicit attitudes towards sexuality and aging

Predictors	R ²	β	sr
Step 1	.08*		
Gender		-.06	-.06
Explicit Sexual Attitudes		.12	.11
Explicit Aging Attitudes		.28	.26*

^a N = 120

^b $F(3, 116) = 3.15, p = .03$. Gender: Men = 0, Women = 1

^c * = p < .05, ** = p < .01

The second multiple regression analysis predicted participants’ scores on the Aging Sexual IAT (younger versus older people engaging in sexual activities) (see Table 3). Examination of the zero-order correlations indicated that only gender was significantly correlated with the Aging Sexual IAT scores with women demonstrating somewhat less bias than did men with respect to sexual activities in young compared to older adults. However, this gender difference was small ($M_s = -.57$ and $-.42$ for men and women respectively). Of note, the predictors were not significantly associated with the Aging Sexual IAT scores: $R^2 = .04; F(3, 116) = 1.70, p = .17$.

The third multiple regression predicted scores on the Sexual Older Adult IAT (older adults engaged in general versus sexual activities) (see Table 4). Examination of the zero-order correlations indicated that Explicit Sexual Attitudes were significantly associated with the Sexual Older Adult IAT scores, and the regression itself revealed that the set of predictors was marginally

Table 3: Multiple regression analysis predicting Aging Sexual IAT Scores

Predictors	R ²	β	sr
Step 1	.04		
Gender		.22	.20*
Explicit Sexual Attitudes		.05	.05
Explicit Aging Attitudes		-.03	-.03

^a N = 120

^b $F(3, 116) = 1.70, p = .17$

^c Aging Sexual IAT = younger versus older adults engaged in sexual activity

^d Gender: Men = 0, Women = 1

^e * = p < .05, ** = p < .01

Table 4: Multiple regression analysis predicting Sexual Older Adult IAT Scores

Predictors	R ²	β	sr
Step 1	.06		
Gender		.10	.09
Explicit Sexual Attitudes		.25	.24**
Explicit Aging Attitudes		.09	.08

^a N = 120

^b F(3, 116) = 2.41, p = .071

^c Sexual Older Adult IAT = Older adults engaged in general versus sex activities

^d Gender: Men = 0, Women = 1^e * = p < .05, ** = p < .01

related to Sexual Older Adult IAT scores: $R^2 = .06$; $F(3, 116) = 2.41$, $p = .071$. Only Explicit Sexual Attitudes added uniquely to the equation. Participants with restrictive sexual attitudes were more likely to reveal an implicit bias favouring general versus sexual activities among older adults.

Discussion

In this study, we examined and compared young adults' explicit and implicit attitudes regarding the sexuality of older adults. Past research assessing such attitudes has relied entirely on self-reports, which are known to be influenced by demand characteristics (Colton & Covert, 2007; Evans & Rodney, 2008). We believe that the study of attitudes regarding the sexuality of older adults may be especially prone to such demand characteristics given the highly sensitive nature of the topic as well as social pressure to hide or suppress ageist views about the elderly. This study incorporated a relatively complex design, but may be the first to begin to parse out the associations of both explicit and implicit measures to the study of attitudes towards the sexuality of older adults.

Consistent with other recent research (Bouman et al., 2006; Lai & Hynie, 2011; Pratt & Schmall, 1989), we found that, when asked, young adults report positive views about the sexuality of older adults. However, our research counters these findings by demonstrating that their implicit attitudes towards sexuality and aging, in fact, are negative, not positive. This is a notable discrepancy. By virtue of being beyond conscious awareness and control, the IAT results lead us to question the validity of measures of explicit attitudes of sexuality and aging, which reflect what an individual deliberately chooses to reveal. Our findings that participants' implicit attitudes towards sexuality and aging were unrelated to self-reported explicit attitudes towards either sexuality or aging alone reinforces the disconnection noted between explicit and implicit measures. Future research employing self-report measures should,

at the very least, incorporate standard measures of socially desirable responding to control for this potential bias.

Explicit Attitudes towards Sexuality and Aging

The young adults in our sample reported explicit attitudes towards the sexuality of older adults that corresponded to a rating between *acceptable* and *completely acceptable* across a wide range of sexual activities. Nonetheless, there was some variability in participants' responses such that some participants were less accepting than were others. Our results provide some insights into the extent to which attitudes towards sexuality and attitudes towards aging influence attitudes towards sexual expression in older adults. We found that (explicit) attitudes regarding the sexual lives of older adults could be accounted for best by explicit attitudes towards aging; in fact, no meaningful connection was found with explicit sexual attitudes. This finding suggests that young people with more ageist attitudes, or at least those who are willing to endorse explicitly more negative attitudes towards aging, apply these attitudes to sexual expression in older adults. That is, there is some carry-over in attitudes towards aging. Neither the valence nor intensity of individuals' attitudes towards sexuality was related to the extent to which they exhibited bias towards sexual expression in older adults. Thus, to change views about sexuality and aging, it may be necessary to change views about aging generally rather than about sexuality specifically.

Implicit Attitudes towards Sexuality, Aging, and Sexuality among Older Adults

The results of this study also shed light on young adults' implicit attitudes towards sexuality, aging, and the combination of sexuality and aging (i.e., sexual expression by older adults). The design allowed us to examine the relative contribution of sexual and aging attitudes to those about the sexuality of older adults. Participants' implicit attitudes indicated a moderate bias against older adults in favor of younger adults with regard to both their sexual lives and in more-general contexts. That is, when presented with younger adults and older adults engaged in general activities (the Aging Nonsexual IAT) as well as when presented with younger adults and older engaged in sexual activities (the Aging Sexual IAT), participants demonstrated a bias favouring younger adults. This finding reveals that young people hold ageist attitudes. This may be particularly true for men because we found that the men had a somewhat stronger bias against older people engaged in sexual activity than did the women. These results are consistent with past research investigating general ageist attitudes (Gast & Rothermund, 2010; Jelenec & Steffens, 2002; Nosek et al., 2002), and

extends them to the sexual context, but are inconsistent with our predictions regarding gender differences.

The finding that young adults hold ageist implicit attitudes is particularly problematic because this form of prejudice has been linked to the daily communication of ageist stereotypes (Lagacé, Tanguay, Lavallée, Laplante, & Robichaud, 2012), emotional rejection of older people (Lookinland & Anson, 1995), and neglect (Winterstein, 2012). On the other hand, this finding may simply reflect greater comfort, ease, and perhaps familiarity with experiences captured by sorting tasks depicting young adults because the participants themselves are young adults. An essential next step in furthering our understanding of young people's attitudes towards older adults is to examine how the bias noted in implicit attitudes is expressed behaviourally, if at all, in ways that reflect discrimination. This could be done experimentally either by presenting participants with hypothetical scenarios depicting opportunities to interact with younger compared to older adults or by conducting experiments in which participants would indicate behaviourally their preferences (e.g., how closely they sit near an older adult along a row of empty chairs).

Our findings also indicate that young people hold attitudes reflecting a notable bias against sexual activities in favor of more generic activities for both younger (the Sexual Young Adult IAT) and older adults (the Sexual Older Adult IAT). These results are consistent with past IAT research assessing attitudes towards sexuality that has used sexual words compared to neutral words and sexual photos compared to romantic photos (Geer & Robertson, 2005; Thompson & O'Sullivan, 2012). However, it extends this work by generalizing the findings across age groups. That is, our results replicate work indicating a bias against sexual activities depicted among young people and show that this bias is also present with respect to sexual activity in older adults. A bias favouring general over sexual activities is not particularly surprising; sexual issues, imagery, and information have long been regarded as socially sensitive topics, producing any of a range of emotions, such as anxiety, arousal, embarrassment, or curiosity. This connection is developed early in life. For instance, children learn at a young age that their bodies should be viewed as shameful or dirty (Kaestle & Allen, 2011) and to keep sexual interest private (de Graaf & Rademakers, 2011). Thus, it is likely that participants experienced greater degrees of discomfort, and hence cognitive interference, when pairing sexual activities than when pairing general activities.

Conversely, it was likely easier for our participants to sort stimuli containing no sexual content because the generic content of those stimuli introduced no cognitive interference. In keeping with this interpretation,

we found that individuals with more negative explicit sexual attitudes demonstrated a stronger automatic bias favouring general compared to sexual activities in older adults. Surprisingly, men and women responded to the tasks comparing general and sexual activities similarly. In contrast, consistent with past research (Petersen & Hyde, 2010), we found that the men reported more positive explicit sexual attitudes. This association suggests that sexual socialization and gender role expectations affect men's and women's reports of their sexual attitudes, but not their (implicit) responses beyond their conscious control. Indeed, we did not find gender differences in implicit sexual attitudes towards young adults (the Sexual Young Adult IAT).

We found a bias against sexual expression in older adults both when compared to sexual expression in younger adults (the Aging Sexual IAT) and when compared to older adults engaging in nonsexual activities (the Sexual Older Adult IAT). Combining stimuli representing both sexuality and aging produced greater bias than did stimuli for either sexuality or aging alone. Although the bias towards general as compared to sexual activities was present for both age groups, this finding was stronger for older adults (the Sexual Young Adults IAT) than for younger adults (the Sexual Older Adult IAT) among both the men and the women. The bias we found against both sex and aging interact to produce an even greater effect when presented with the combination of age and sex. The social psychological literature indicates that multiple, intersecting, stigmatized identities, such as older adult and sexual person, often compounds the impact of stigma and, in some cases, the resulting discrimination (Nabors, 2012).

Limitations and Future Directions

Like all studies, ours contained a number of limitations that we could not rectify. First, we did not assess behaviour or behavioural intentions. Research is needed to determine whether, consistent with these findings, ageist (implicit) attitudes affect young people's behaviour with respect to accepting and supporting sexual expression in older adults more so than behaviour in other contexts. Second, our sample consisted of young adults (18–24 years) attending university. Research on individuals currently caring for older adults would provide more-proximal insights into the extent to which prejudicial attitudes are reflected in discriminatory behaviour that has an impact on the sexual lives of those under their care. As individuals age, they may become increasingly more comfortable with the idea of sexuality in later life, as some researchers have suggested (Lai & Hynie, 2011). It is possible that the IAT responses reflect a degree of familiarity with cultural stereotypes rather than attitudes regarding the associated stimuli. However, the extreme automaticity and the

evaluative components embedded in IAT tasks indicate that they capture attitudes, not familiarity or knowledge alone (Gawronski & Bodenhausen, 2006; Nosek & Hansen, 2008). In fact, previous studies have found that cultural knowledge has a minimal independent relationship with performance on the IAT (e.g., Nosek & Hansen, 2008; Olson & Fazio, 2004). Finally, frequency and quality of contact with older people, aging knowledge, or experience and comfort with sexuality imagery or tasks are factors that we did not assess but which might help explain attitudes towards the sexuality of older adults.

Conclusion

Despite these limitations, we believe that our study makes three contributions to the field. First, we demonstrated that assessing individuals' explicit attitudes have almost no predictive utility in understanding their implicit attitudes – that is, those evaluative reactions beyond conscious control or awareness. Second, using a mixed-methods design that incorporated both self-report measures and a series of IAT tests, we showed that young people do indeed reveal negative implicit attitudes (despite explicitly endorsing positive attitudes) regarding the sexual lives of older adults. Third, we revealed that it is young people's discomfort around sexual matters, rather than biases against older people generally, that best explains the significant negative bias in their reactions towards the sexuality of older adults. Although this is an exploratory study, such information points to the importance of implementing programs that are designed to improve acceptance regarding sexuality and eliminate prejudicial attitudes among young people and those caring for older adults regardless of these individuals' stated views on the subject. Given our finding that explicit attitudes towards sexuality but not towards aging were associated with attitudes towards sexual expression in older adults, these programs need also to target improving comfort around sexual matters more broadly. As the number of older adults grows in coming decades (Pratt & Schmall, 1989), changing these attitudes may be increasingly important.

References

- Aizenberg, D., Weizman, A., & Barak, Y. (2002). Attitudes toward sexuality among nursing home residents. *Sexuality & Disability, 20*, 185–189.
- Allen, K. R., & Roberto, K. A. (2009). From sexism to sexy: Challenging young adults' ageism about older women's sexuality. *Sexuality Research & Social Policy: A Journal of the NSRC, 6*, 13–24.
- Allen, R. S., Petro, K. N., & Phillips, L. L. (2009). Factors influencing young adults' attitudes and knowledge of late-life sexuality among older women. *Aging & Mental Health, 13*, 238–245.
- Andersen, R., & Fetner, T. (2008). Cohort differences in tolerance of homosexuality: Attitudinal change in Canada and the United States, 1981–2000. *Public Opinion Quarterly, 72*, 311–330.
- Angiullo, L., Whitbourne, S., & Powers, C. (1996). The effects of instruction and experience on college students' attitudes toward the elderly. *Educational Gerontology, 22*, 483–495.
- Bouman, W., & Arcelus, J. (2001). Are psychiatrists guilty of 'ageism' when it comes to taking a sexual history? *International Journal of Geriatric Psychiatry, 16*, 27–31.
- Bouman, W., Arcelus, J., & Benbow, S. (2006). Nottingham Study of Sexuality & Ageing (NoSSA I). Attitudes regarding sexuality and older people: A review of the literature. *Sexual & Relationship Therapy, 21*, 149–161.
- Butler, R. (1969). Age-ism: Another form of bigotry. *The Gerontologist, 9*, 243–246.
- Chambliss, H. O., Finley, C. E., & Blair, S. N. (2004). Attitudes toward obese individuals among exercise science students. *Medicine and Science in Sports and Exercise, 36*, 468–474.
- Colton, D., & Covert, R. W. (2007). *Designing and constructing instruments for social research and evaluation*. San Francisco: Jossey-Bass.
- de Graaf, H., & Rademakers, J. (2011). The psychological measurement of childhood sexual development in Western societies: Methodological challenges. *Journal of Sex Research, 48*, 118–129.
- De Paula Couto, M., & Wentura, D. (2012). Automatically activated facets of ageism: Masked evaluative priming allows for a differentiation of age-related prejudice. *European Journal of Social Psychology, 42*, 852–863.
- Evans, A. N., & Rodney, B. (2008). *Methods in psychological research*. Thousand Oaks, CA: Sage.
- Fraboni, M., Saltstone, R., & Hughes, S. (1990). The Fraboni Scale of Ageism (FSA): An attempt at a more precise measure of ageism. *Canadian Journal on Aging, 9*, 56–66.
- Gast, A., & Rothermund, K. (2010). When old and frail is not the same. Dissociating category and stimulus effects in four implicit attitude measurement methods. *Quarterly Journal of Experimental Psychology, 63*, 479–498.
- Gawronski, B., & Bodenhausen, G. V. (2006). Associative and propositional processes in evaluation: An integrative review of implicit and explicit attitude change. *Psychological Bulletin, 132*, 692–731.
- Geer, J. H., & Robertson, G. G. (2005). Implicit attitudes in sexuality: Gender differences. *Archives of Sexual Behavior, 34*, 671–677.
- Golde, P., & Kogan, N. N. (1959). A sentence completion procedure for assessing attitudes toward old people. *Journal of Gerontology, 14*, 355–360.

- Gordon, R. S., & Avery, R. D. (2004). Age bias in laboratory and field settings: A meta-analytic investigation. *Journal of Applied Social Psychology, 34*, 468–492.
- Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review, 102*, 4–27.
- Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology, 74*, 1464–1480.
- Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the Implicit Association Test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology, 85*, 197–216.
- Hagestad, G. O., & Uhlenberg, P. (2005). The social separation of old and young: A root of ageism. *Journal of Social Issues, 61*, 343–360.
- Hendrick, C., Hendrick, S., & Reich, D. A. (2006). The Brief Sexual Attitudes Scale. *Journal of Sex Research, 43*, 76–86.
- Hendrick, S. S., & Hendrick, D. (1987). Multidimensionality of sexual attitudes. *Journal of Sex Research, 23*, 502–526.
- Isaacs, L. W., & Bearison, D. J. (1986). The development of children's prejudice against the aged. *The International Journal of Aging & Human Development, 23*, 175–194.
- Jelenec, P., & Steffens, M. C. (2002). Implicit attitudes toward elderly women and men. *Current Research in Social Psychology, 7*, 275–293.
- Jonathan, E. (2008). The influence of religious fundamentalism, right-wing authoritarianism, and Christian orthodoxy on explicit and implicit measures of attitudes toward homosexuals. *International Journal for the Psychology of Religion, 18*, 316–329.
- Kaestle, C. E., & Allen, K. R. (2011). The role of masturbation in healthy sexual development: Perceptions of young adults. *Archives of Sexual Behavior, 11*, 983–994.
- Kite, M. E., Stockdale, G. D., Whitley, B. R., & Johnson, B. T. (2005). Attitudes toward younger and older adults: An updated meta-analytic review. *Journal of Social Issues, 61*, 241–266.
- Kontula, O., & Haavio-Mannila, E. (2009). The impact of aging on human sexual activity and sexual desire. *Journal of Sex Research, 46*, 46–56.
- Lagacé, M., Tanguay, A., Lavallée, M., Laplante, J., & Robichaud, S. (2012). The silent impact of ageist communication in long term care facilities: Elders' perspectives on quality of life and coping strategies. *Journal of Aging Studies, 26*, 335–342.
- Lai, Y., & Hynie, M. (2011). A tale of two standards: An examination of young adults' endorsement of gendered and ageist sexual double standards. *Sex Roles, 64*, 360–371.
- Levy, B., & Banaji, M. R. (2002). Implicit ageism. In T. Nelson (Ed.), *Ageism: Stereotyping and prejudice against older persons* (pp. 49–75). Cambridge: MIT Press.
- Lindau, S., Schumm, L., Laumann, E. O., Levinson, W., O'Muirheartaigh, C. A., & Waite, L. J. (2007). A study of sexuality and health among older adults in the United States. *New England Journal of Medicine, 357*, 762–774.
- Lindau, S. T., & Gavrilova, N. (2010). Sex, health, and years of sexually active life gained due to good health: Evidence from two US population-based cross sectional surveys of ageing. *British Medical Journal, 340*, c810.
- Lookinland, S., & Anson, K. (1995). Perpetuation of ageist attitudes among present and future health care personnel: Implications for elder care. *Journal of Advanced Nursing, 21*, 47–56.
- Mahieu, L., Van Elssen, K., & Gastmans, C. (2011). Nurses' perceptions of sexuality in institutionalized elderly: A literature review. *International Journal of Nursing Studies, 48*, 1140–1154.
- Nabors, N. A. (2012). The social psychology of stigma. In R. Nettles & R. Balter (Eds.), *Multiple minority identities: Applications for practice, research, and training* (pp. 13–34). New York: Springer.
- Nicolosi, A., Laumann, E. O., Glasser, D. B., Edson, D., Moreira, J., Paik, A., et al. (2004). Sexual behavior and sexual dysfunctions after age 40: The global study of sexual attitudes and behaviors. *Urology, 64*, 991–997.
- Nosek, B. A., Banaji, M. R., & Greenwald, A. G. (2002). Harvesting implicit group attitudes and beliefs from a demonstration web site. *Group Dynamics: Theory, Research, and Practice, 6*, 101–115.
- Nosek, B. A., Greenwald, A. G., & Banaji, M. R. (2005). Understanding and using the Implicit Association Test: II. Method variables and construct validity. *Personality and Social Psychology Bulletin, 31*, 166–180.
- Nosek, B. A., & Hansen, J. J. (2008). The associations in our heads belong to us: Searching for attitudes and knowledge in implicit evaluation. *Cognition & Emotion, 22*, 553–594.
- O'Hanlon, A. M., & Brookover, B. (2002). Assessing changes in attitudes about aging: Personal reflections and a standardized measure. *Educational Gerontology, 28*, 711–725.
- Oliver, M. B., & Hyde, J. S. (1993). Gender differences in sexuality: A meta-analysis. *Psychological Bulletin, 114*, 29–51.
- Olson, M. A., & Fazio, R. H. (2004). Reducing the influence of extrapersonal associations on the Implicit Association Test: Personalizing the IAT. *Journal of Personality and Social Psychology, 86*, 653–667.
- Orimo, H., Ito, H., Suzuki, T., Araki, A., Hosoi, T., & Sawabe, M. (2006). Reviewing the definition of 'elderly.' *Geriatrics and Gerontology International, 6*, 149–158.

- O'Sullivan, L. F. (2008). Challenging assumptions regarding the validity of self-report measures: The special case of sexual behavior. *Journal of Adolescent Health, 42*, 207–208.
- Palmore, E. (2001). The ageism survey: First findings. *The Gerontologist, 41*, 572–575.
- Petersen, J. L., & Hyde, J. S. (2010). A meta-analytic review of research on gender differences in sexuality, 1993–2007. *Psychological Bulletin, 136*, 21–38.
- Pratt, C. C., & Schmall, V. L. (1989). College students' attitudes toward elderly sexual behavior: Implications for family life education. *Family Relations, 38*, 137–141.
- Pruett, S. R., & Chan, F. (2006). The development and psychometric validation of the Disability Attitude Implicit Association Test. *Rehabilitation Psychology, 51*, 202–213.
- Rupp, D. E., Vodanovich, S. J., & Credé, M. (2005). The multidimensional nature of ageism: Construct validity and group differences. *The Journal of Social Psychology, 145*, 335–362.
- Sakaluk, J. K., & Milhausen, R. R. (2012). Factors influencing university students' explicit and implicit sexual double standards. *Journal of Sex Research, 49*, 464–476.
- Schnabel, K., Asendorpf, J. B., & Greenwald, A. G. (2008). Understanding and using the Implicit Association Test: V. Measuring semantic aspects of trait self-concepts. *European Journal of Personality, 22*, 695–706.
- Scotti, J. R., Slack, B. S., Bowman, R. A., & Morris, T. L. (1996). College student attitudes concerning the sexuality of persons with mental retardation: Development of the perceptions of sexuality scale. *Sexuality and Disability, 14*, 249–264.
- Sharpe, T. H. (2004). Introduction to sexuality in late life. *Sex Therapy, 12*, 199–205.
- Stuart-Hamilton, I., & Mahoney, B. (2003). The effect of aging awareness training on knowledge of, and attitudes towards, older adults. *Educational Gerontology, 29*, 251–260.
- Tebbe, E. N., & Moradi, B. (2012). Anti-transgender prejudice: A structural equation model of associated constructs. *Journal of Counseling Psychology, 59*, 251–261.
- Thompson, A., & O'Sullivan, L. (2012). Gender differences in associations of sexual and romantic stimuli: Do young men really prefer sex over romance? *Archives of Sexual Behavior, 41*, 949–957.
- Tomlinson, J. (1998). ABC of sexual health. *BMJ: British Medical Journal (International Edition), 317*, 1573–1576.
- Treas, J. (2002). How cohorts, education, and ideology shaped a new sexual revolution on American attitudes toward nonmarital sex, 1972–1998. *Sociological Perspectives, 45*, 267–283.
- Turner, C. W., & Fischler, I. S. (1993). Speeded tests of implicit knowledge. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 19*, 1165–1177.
- Vincent, W., Parrott, D. J., & Peterson, J. L. (2011). Effects of traditional gender role norms and religious fundamentalism on self-identified heterosexual men's attitudes, anger, and aggression toward gay men and lesbians. *Psychology of Men & Masculinity, 12*, 383–400.
- Walker, B. L., & Harrington, D. (2002). Effects of staff training on staff knowledge and attitudes about sexuality. *Educational Gerontology, 28*, 639–654.
- Walker, B. L., Osgood, N. J., Richardson, J. P., & Ephross, P. H. (1998). Staff and elderly knowledge and attitudes toward elderly sexuality. *Educational Gerontology, 24*, 471–489.
- Weeks, D. J. (2002). Sex for the mature adult: Health, self-esteem and countering ageist stereotypes. *Sexual & Relationship Therapy, 17*, 231–240.
- West, N. D. (1975). Sex in geriatrics: Myth or miracle? *Journal of American Geriatric Society, 23*, 551–552.
- White, A. M., Hingson, R. W., Pan, I.-J., & Yi, J.-Y. (2011). Hospitalizations for alcohol and drug overdoses in young adults ages 18–24 in the United States, 1999–2008: Results from the Nationwide Inpatient Sample. *Journal of Studies on Alcohol and Drugs, 72*, 774–786.
- Winterstein, T. (2012). Nurses' experiences of the encounter with elder neglect. *Journal of Nursing Scholarship, 44*, 55–62.