Differences Between Landline and Mobile Phone Users in Sexual Behavior Research.

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ABSTRACT

This study investigated differences between the demographic characteristics, participation rates (i.e., agreeing to respond to questions about sexual behavior), and sexual behaviors of landline and mobile phone samples in Australia. A nationally representative sample of Australians aged 18 years and over was recruited via random digit dialing in December 2011 to collect data via computer assisted telephone interviews. A total of 1012 people (370 men, 642 women) completed a landline interview and 1002 (524 men, 478 women) completed a mobile phone interview. Results revealed that telephone user status was significantly related to all demographic variables: gender, age, educational attainment, area of residence, country of birth, household composition, and current ongoing relationship status. In unadjusted analyses, telephone status was also associated with women's participation rates, participants' number of other-sex sexual partners in the previous year, and women's lifetime sexual experience. However, after controlling for significant demographic factors, telephone status was only independently related to women's participation rates. Post-hoc analyses showed that significant, between-group differences for all other sexual behavior outcomes could be explained by demographic covariates. Results also suggested that telephone status may be associated with participation bias in research on sexual behavior. Taken together, these findings highlight the importance of sampling both landline and mobile phone users to improve the representativeness of sexual behavior data collected via telephone interviews.

Keywords: Telephone surveys, Demographic factors, Sexual behavior

INTRODUCTION

One of the most widely used methods for population-based sex research is computer assisted telephone interviewing (CATI) using randomly selected landline telephone numbers. Since its introduction in the 1970s, CATI has provided a quick and cost-effective method of obtaining data that are representative of target populations (Dillman, 2002; Dutwin, Keeter, & Kennedy, 2010), allowing researchers to draw valid, generalizable conclusions about populations from smaller groups of participants (Kempf & Remington, 2007). In large-scale sex research, CATI represents a preferred method of data collection because it attracts relatively high response rates, improves access to hard to reach populations, allows for greater confidentiality and privacy, does not require high levels of literacy, and lowers the potential for interviewer bias (Smith, Rissel, Richters, Grulich, & de Visser, 2003). For such reasons, landline-based CATI has been widely used for collecting national sexual health and behavior data throughout the world (e.g., Bajos et al., 2010; Dubois-Arber, Jeannin, Konings, & Paccaud, 1997; Layte et al., 2006; Paul et al., 1995; Rissel, Bauman, Lesjak, & McLellan, 2000; Smith et al., 2003; Smith, Pitts, Shelley, Richters, & Ferris, 2007; Spira et al., 1992; Uitenbroek & McQueen, 1992).

More recently, however, the representativeness of landline surveys has been challenged by the changing nature of personal communication (Lavrakas, Shuttles, Steeh, & Fienberg, 2007), including the increased prevalence of mobile phone use and the decline in the proportion of households with fixed telephone lines (Australian Communications and Media Authority, 2011; Newman, 2011). A recent estimate in Australia suggests that over 18% of adults live in households without a fixed line telephone (Australian Communications and Media Authority, 2012), and research in the United States has indicated that the proportion of mobile-only households is as high as 34% (Blumberg & Luke, 2012). The inability of landline-based surveys to reach a substantial proportion of the population

introduces a potential bias in results that should not be ignored (Blumberg & Luke, 2009; Lee, Brick, Brown, & Grant, 2010; Link, Battaglia, Frankel, Osborn, & Mokdad, 2007). An added complication emerges from the usage patterns of those who have access to both landlines and mobile phones (Lee et al., 2010), with non-response bias in landline-based surveys likely to be further exacerbated by landline householders relying mainly on their mobile for communication (Brick, Dipko, Presser, Tucker, & Yuan, 2006). Non-coverage of the mobile-only population proves especially problematic, as mobile-only users differ from those with landlines (Lee et al., 2010; Newman, 2011). Research suggests substantial differences in demographic characteristics, attitudes, and health-related behaviors between those who live in mobile-only households and those with landline telephones (Ansolabehere & Schaffner, 2010; Blumberg & Luke, 2012; Blumberg, Luke, & Cynamon, 2006; Dal Grande & Taylor, 2010; Keeter, Kennedy, Clark, Tompson, & Mokrzycki, 2007; McBride, Morgan, & Hannah, 2012; Vicente & Reis, 2009; Voigt, Schwartz, Doody, Lee, & Li, 2011).

While there is growing evidence in the United States pointing to demographic and health differences related to telephone use (Blumberg & Luke, 2012), developing international standards of best practice in specific research domains requires further targeted research into the relationship between local telecommunication patterns and particular health outcomes. This is certainly true of sexual health research, which has relied heavily on landline CATI surveys and has revealed differences between the sexual behaviors of populations across different countries (Wellings et al., 2006). Although a number of studies have examined the characteristics of mobile phone users in Australia (e.g., Barr, Van Ritten, Steel, & Thackway, 2012; Dal Grande & Taylor, 2010; Holborn, Reavley, & Jorm, 2012; Liu et al., 2011; Pennay, 2010, 2012), beyond one study investigating reproductive health in young women (Liu et al., 2011), the relationship between telephone use and sexual behaviors has not been investigated.

Accordingly, the aim of this study was to explore the potential impact of mobile versus landline telephone use on the representativeness of sexual behavior data collected via CATI. To do so, we investigated differences between the demographic characteristics and selected sexual behaviors of mobile and landline users in Australia by employing a dual-frame sampling approach. We also examined whether differences in the sexual behaviors reported by mobile versus landline users might be attributable to the confounding influence of between-group demographic differences. Given the potential issue of participation bias in research on sexual behavior (Dunne et al., 1997; Smith, Rissel, Richters, Grulich, & de Visser, 2003), the relationship between telephone use and participation rates was also explored.

METHOD

Participants

Participants were 894 men and 1120 women aged 18 years and over across all states and territories of Australia contacted via landline or mobile telephone (Pennay, 2012). Of this sample, 1012 (370 men, 642 women) completed a landline interview and 1002 (524 men, 478 women) completed a mobile phone interview. The mean age of participants was 45.6 years ($SD = 17.3$).

Procedure and Measures

Between 2 December and 20 December 2011, a modified random digit dialing method was employed to collect data via CATI, using the randomly generated, previously validated samples of landline and mobile telephone numbers provided by *Sampleworx*. After having the study briefly explained to them, participants either gave their oral consent to be interviewed or refused. Of all those contacted, 40% agreed to participate; response rates for the landline and mobile phone frame were 42% and 38%, respectively. Age and language were the only selection criteria, with participants interviewed only if aged 18 years or older

and able to speak English or one of the six most commonly spoken non-English languages in Australia (Mandarin, Cantonese, Vietnamese, Italian, Greek or Arabic). Participants for the landline component were chosen using the “next birthday” selection method, where interviewers ask to speak to the adult household member who has the next birthday (Salmon & Nichols, 1983). Participants for the mobile phone component included all eligible telephone answerers.

The average interview length was 19.8 minutes for both sampling frames. Non-English language interviewing occurred in 25 cases. Approval for this study was granted by the University of Queensland Behavioural and Social Sciences Ethical Review Committee.

Survey

This study was part of a larger, dual-frame omnibus survey that collected information across 12 domains: self-assessed health; road safety attitudes and behaviors; employment; physical activity; sun protection; climate change attitudes; television viewing behavior; tobacco, alcohol, and marijuana use; experience of racism; problem gambling; sexual behavior; and demographics (Pennay, 2012). The current analysis used data from the demographic and sexual behavior modules.

Demographic variables used in this analysis were gender; age (18-24, 25-39, 40-49, 50-64, 65+); educational attainment (≤ 11 years of education, 12 years, >12 years, other); area of residence (capital city, other); country of birth (Australia, overseas English speaking country, overseas non-English speaking country, other); household composition (shared household, living alone, family, couple with or without children, other), and current ongoing relationship status (yes, no, other). The sexual behavior variables included: consent to participate in the sexual behaviors module (yes, no); lifetime sexual experience (other-sex only, any same sex, none); and number of other-sex sexual partners in the previous year (0, 1,

2+). A sexual partner was defined as someone with whom the respondent had had vaginal sex.

Analytic Strategy

A two-stage approach was used to weight the data, comprising design weights and poststratification. The design weights adjusted for: (1) the probability of being sampled in the landline frame given the number of landline interviews achieved in relation to the estimated number of residential landlines in Australia and the number of landlines and in-scope adults in participants' households; (2) the probability of being sampled in the mobile phone frame given the number of mobile phone interviews achieved in relation to the estimated number of mobile phones in Australia; and (3) the overlapping chances of selection for persons with both a mobile phone and a landline (Pennay, 2012). Data were then weighted to match the Australian population on the basis of educational attainment by age group, gender, area of residence, country of birth, and telephone status (landline-only, dual-user, mobile-only), using population statistics obtained from the Australian Bureau of Statistics and the Australian Communications and Media Authority (Pennay, 2012). The product of the above two weights was applied for all statistical analyses. Data were analyzed using SPSS version 19.

The sample was divided into four "telephone status" groups on the basis of telephone sampling frame and usage patterns (mobile-only, landline-only, mobile dual user, landline dual user). Mobile dual users were those contacted by mobile phone who also had a landline; landline dual users were those contacted by landline who also had a mobile phone. Between-group differences in demographic characteristics and the sexual behavior variables were analyzed initially using Pearson χ^2 tests. All analyses for the three sexual behavior variables were performed separately for each gender. To adjust for confounding by demographic factors, the relationship between each sexual behavior variable and telephone status was

examined using logistic regression for binary outcomes and multinomial logistic regression for polytomous outcomes. Demographic variables were only included in each initial regression model if bivariate chi-square analyses showed that they predicted the outcome at $p < .25$. Variables were sequentially removed from each model according to their statistical significance until all remaining variables were significant at $p < .05$. Removed variables were then checked to ensure that they were not significant in the final model. Finally, we calculated Nagelkerke's pseudo- R^2 statistics to estimate bivariate effect sizes for each significant predictor and conducted post-hoc stepwise logistic regression analyses to explore whether telephone status significantly enhanced prediction of the sexual behavior outcomes over and above the contribution of demographic covariates.

RESULTS

Relationships Between Telephone Status and Demographic Characteristics

As shown in Table 1, for the 2014 participants, telephone status differed significantly by each of the seven demographic variables. In contrast to the landline-only group, the majority of mobile-only users were men, in the younger age groups of 18 to 39, and had completed over 12 years of education. When compared to the other three groups, a substantially greater proportion of mobile-only users lived in shared households. Conversely, the majority of landline-only participants were women, 65 years of age or over, had completed 11 years of education or less, and were living as part of a couple. Although differences between mobile and landline dual users were less pronounced, approximately 15% more of dual users contacted via mobile were men and aged 18–24 years.

Relationships Between Telephone Status and Participation Rates

Of the 2014 participants, 19% (13% of men, 24% of women) refused to answer the sexual behavior module of the survey. Thus, a subsample of 1628 participants agreed to participate in the sexual behavior component of the study, comprising 321 men and 468

women who completed a landline interview (78% of the total landline sample) and 453 men and 386 women who completed a mobile phone interview (84% of the total mobile sample). On bivariate analysis, telephone status was significantly associated with women's provision of consent to participate in the sexual behaviors module, $\chi^2(3) = 29.0, p < .001$, but not men's, $\chi^2(3) = 3.2$. As shown in Table 2, after controlling for significant demographic covariates, women in the mobile-only group were significantly more likely than those in the landline dual user group (the reference category) to consent, while those in the landline-only group were more likely to refuse. The pattern was similar for men but the differences were not statistically significant.

Relationships Between Telephone Status and Sexual Behaviors

On bivariate analysis, telephone status was related to participants' reported number of other-sex sexual partners in the previous year for both men, $\chi^2(6) = 49.8, p < .001$, and women, $\chi^2(6) = 57.5, p < .001$. As shown in Table 3, a greater proportion of those in the mobile phone groups reported two or more partners than those in the landline groups. This was particularly pronounced among men in the mobile-only group, with almost one-third reporting two or more sexual partners in the past year (compared to approximately 10 per cent of landline participants). Notably, after controlling for demographic factors, telephone status was not a significant, independent predictor of the reported number of sexual partners for either men or women. Bivariate pseudo- R^2 statistics also revealed large, significant effect sizes for each of the demographic covariates, and two post-hoc multinomial logistic regression analyses with backwards elimination showed that for both men, $\chi^2(18) = 413.7, p < .001, R^2_{Nagelkerke} = 0.51$, and women, $\chi^2(18) = 429.2, p < .001, R^2_{Nagelkerke} = 0.58$, telephone status was excluded due to its trivial contribution to the final model. These results suggest that the significant, bivariate relationships between telephone status and participants' number

of sexual partners could be explained by the confounding influence of demographic covariates, rather than telephone status *per se*.

Telephone status was also significantly associated with participants' reported lifetime sexual experience for women, $\chi^2(6) = 19.7, p = .003$, but not men, $\chi^2(6) = 8.0$. As shown in Table 4, a greater proportion of women in the mobile phone groups reported previous same-sex sexual experience than those in the landline groups. This was particularly the case for female mobile-only users, where approximately one-fifth reported some same-sex experience. Two multivariate logistic regression analyses were then performed for each gender to adjust for significant demographic covariates, using the most frequent sexual behavior ("other-sex only") as the reference category and "same-sex experience" and "no previous sexual experience" as the outcome category. Results of these analyses revealed that telephone status was not a significant, independent predictor of lifetime sexual experience for men or women (see Table 4). Further, bivariate pseudo- R^2 statistics revealed larger effect sizes for the demographic covariates when compared to those for telephone status, and two post-hoc multivariate logistic regression analyses with backwards elimination showed that telephone status was excluded from the final models because it did not significantly enhance prediction (men: $\chi^2_8 = 55.8, p < .001, R^2_{Nagelkerke} = 0.14$; women: $\chi^2_8 = 60.8, p < .001, R^2_{Nagelkerke} = 0.14$). These findings again suggest that significant differences in participants' reported lifetime sexual experiences across the telephone groups could be explained by the influence of demographic factors.

DISCUSSION

The aim of this study was to employ a dual-frame sampling design to explore relationships between mode of telephone use and Australians' demographic characteristics, sex survey participation rates, and sexual behaviors. Results revealed a significant association between telephone status and all seven demographic variables, including gender, age,

educational attainment, area of residence, country of birth, household composition, and current ongoing relationship status, showing that there are important differences in the demographic characteristics of mobile phone versus landline samples. Consistent with previous research in Australia, the United States and the United Kingdom (Australian Communications and Media Authority, 2010; Barr et al., 2012; Blumberg & Luke, 2010, 2012; Holborn et al., 2012; McBride et al., 2012; Pennay, 2010), mobile phone only participants were more likely to be men, younger, and living in shared accommodation. As emphasized by others (e.g., Blumberg & Luke, 2009; Lee et al., 2010; Link et al., 2007), our results point to the importance of using a dual-frame sampling approach to minimize noncoverage bias.

With respect to participation rates, our finding that a substantial minority of participants explicitly refused to complete the sexual behavior component of the survey is consistent with previous evidence of participation bias in sex research (Dunne et al., 1997). After controlling for significant demographic covariates, we also found a significant relationship between telephone user status and participation rates for women: those in the landline-only group were less likely than landline dual users to agree to participate in the sexual behavior component of the survey, and those in the mobile-only group were more likely to participate. These findings point to a possible source of non-response bias in sexual behavior surveys related to telephone status. However, it is encouraging to note that, provided researchers can overcome the challenges of recruiting mobile phone users (McBride et al., 2012), our findings suggest that adding them to CATI survey sampling frames has the potential to improve population representativeness.

Finally, bivariate analyses indicated significant relationships between mode of telephone use and the majority of sexual behaviors. A greater proportion of both men and women in the mobile phone groups reported two or more partners in the previous year than

those in the landline groups, and a greater proportion of women in the mobile phone groups reported some previous same-sex sexual experience when compared with those in the landline groups. Importantly, multivariate analyses revealed that, after controlling for demographic factors, telephone status was not significantly related to any of the sexual behavior outcomes as an independent predictor. Conversely, pseudo- R^2 statistics revealed moderate to strong effect sizes for each of the demographic covariates. These results suggest that significant differences in the sexual behaviors of mobile phone and landline users are likely to be attributable to demographic differences between the two samples. Such findings lend further support to the view that using landline-only CATI may adversely affect the quality of sexual behavior survey data as a consequence of noncoverage bias.

The primary methodological limitation of this research was the limited range of sexual behaviors investigated and the absence of measures of important health correlates such as rates of sexually transmissible infections. The use of a more comprehensive sexual behavior and health questionnaire is required to address this issue. Further, the small numbers of people in the “same-sex experience” and “no previous sexual experience” categories is likely to have affected the power of statistical analyses to provide generalizable results concerning the relationships between telephone status, demographics and participants’ lifetime sexual experience. Use of a larger dual-frame sample is therefore recommended for future investigations. As with all survey endeavors, our participation rate of 40% suggests that nonresponse bias is also a potential issue, emphasizing the need for replication. Finally, it should be acknowledged that although the vast majority of Australians have telephone access, some minority groups may not have access to, or the ability to use, landline or mobile telephones, suggesting a potential selection bias. For example, samples collected via CATI may not include minority groups such as prisoners and people with hearing difficulties.

Despite these limitations, the current analysis adds to a growing body of evidence highlighting key differences in the demographic characteristics, behavior, and health outcomes of mobile phone versus landline samples (Ansolabehere & Schaffner, 2010; Blumberg & Luke, 2012; Blumberg et al., 2006; Dal Grande & Taylor, 2010; Keeter et al., 2007; McBride et al., 2012; Vicente & Reis, 2009; Voigt et al., 2011). Of particular relevance to sexual health researchers, it provides preliminary evidence for a relationship between telephone use and Australians' sexual behaviors, due to the confounding influence of demographic factors. Our work therefore lends further empirical support to a growing consensus that public health researchers can no longer ignore the impact of mobile phone use on the representativeness of CATI surveys.

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COMPLIANCE WITH ETHICAL STANDARDS

Conflict of Interest: All authors declare that they have no conflict of interest.

Ethical Approval: All study procedures were in accordance with the ethical standards of the institutional research ethics committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent: Informed consent was obtained from all individual participants included in the study.

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Table 1. Comparison of Demographic Characteristics among Telephone Status Groups

Demographic factor	Telephone Status*				χ^2 value (p value)
	Mobile Only (N = 383) n (column %)	Landline Only (N = 179) n (column %)	Mobile Dual (N = 685) n (column %)	Landline Dual (N = 767) n (column %)	
Gender					59.98
Men	232 (60.6)	67 (37.4)	378 (55.2)	316 (41.2)	< .001
Women	151 (39.4)	112 (62.6)	307 (44.8)	451 (58.8)	
Age group					515.55
18-24 years	82 (21.4)	5 (2.8)	137 (20.0)	35 (4.6)	< .001
25-39 years	190 (49.6)	16 (8.9)	202 (29.5)	161 (21.0)	
40-49 years	36 (9.4)	14 (7.8)	139 (20.3)	174 (22.7)	
50-64 years	56 (14.6)	43 (24.0)	160 (23.4)	223 (29.1)	
65+ years	19 (5.0)	101 (56.4)	47 (6.9)	174 (22.7)	
Education					75.72
≤ 11 years	93 (24.3)	90 (50.3)	149 (21.8)	229 (29.9)	< .001
12 years	80 (20.9)	34 (19.0)	194 (28.3)	159 (20.7)	
> 12 years	207 (54.0)	51 (28.5)	332 (48.5)	365 (47.6)	
Other ^a	3 (0.8)	4 (2.2)	10 (1.5)	14 (1.8)	
Area of residence					16.51
Capital city	254 (66.3)	109 (60.9)	476 (69.5)	459 (59.8)	< .001
Other	129 (33.7)	70 (39.1)	209 (30.5)	308 (40.2)	
Country of birth					55.14
Australia	238 (62.1)	132 (73.7)	441 (64.4)	570 (74.3)	< .001
Overseas ESB ^b	39 (10.2)	16 (8.9)	66 (9.6)	96 (12.5)	
Overseas	103 (26.9)	30 (16.8)	175 (25.6)	101 (13.2)	
NESB ^c					
Other ^{a,d}	3 (0.8)	1 (0.6)	3 (0.4)	0 (0.0)	
Household composition					256.76
Living alone	55 (14.4)	43 (24.0)	32 (4.7)	104 (13.6)	< .001
Shared household	102 (26.6)	7 (3.9)	68 (9.9)	28 (3.7)	
Family ^e	45 (11.7)	21 (11.7)	129 (18.8)	88 (11.5)	
Couple	159 (41.5)	97 (54.2)	431 (62.9)	525 (68.4)	
Other ^a	22 (5.7)	11 (6.1)	25 (3.2)	22 (2.9)	
Current relationship					51.21

Yes	245 (64.0)	108 (60.3)	543 (79.3)	595 (77.6)	< .001
No	134 (35.0)	71 (39.7)	139 (20.3)	171 (22.3)	
Other ^{a,d}	4 (1.0)	0 (0.0)	3 (0.4)	1 (0.1)	

*Total numbers contacted by mobile and landline differ from 1002 and 1012 respectively due to weighting

^a Includes “Refused” and “Don’t Know”

^b ESB, English speaking background

^c NESB, Non-English speaking background

^d Excluded from χ^2 analysis due to insufficient n

^e Includes “At home with parents/guardians” and “One parent family with children at home”

Table 2. Relationships of Telephone Status and Significant Demographic Covariates with Participation Rates for Sexual Behaviour Questions

Predictors	Consenting to Participate ^a			
	Men (N = 993) ^b		Women (N = 1021) ^b	
	<i>n</i> ^c (%)	AOR (95% CI) ^d	<i>n</i> ^c (%)	AOR (95% CI) ^d
Phone status				
Mobile only	205 (88.4)	1.39 (0.79–2.43)	132 (87.4)	2.10 (1.17–3.80)*
Landline only	55 (82.1)	0.59 (0.28–1.24)	66 (58.9)	0.61 (0.38–0.96)*
Mobile dual	322 (85.2)	0.93 (0.58–1.47)	236 (76.9)	0.94 (0.65–1.35)
Landline dual	279 (88.3)	1.00	345 (76.5)	1.00
Age group				
18-24 years	122 (89.7)	–	103 (85.1)	1.22 (0.66–2.23)
25-39 years	269 (84.6)	–	206 (82.1)	1.00
40-49 years	153 (90.5)	–	160 (82.5)	1.12 (0.67–1.87)
50-64 years	195 (86.7)	–	188 (72.6)	0.63 (0.41–0.99)*
65+ years	122 (84.1)	–	122 (62.2)	0.46 (0.28–0.75)**
Country of Birth				
Australia	587 (90.7)	1.00	583 (79.4)	1.00
Overseas ESB ^e	101 (90.2)	0.84 (0.43–1.64)	78 (75.0)	0.76 (0.47–1.25)
Overseas NESB ^f	171 (74.7)	0.28 (0.19–0.43)**	118 (65.2)	0.43 (0.29–0.62)**
Other ^g	3 (50.0)	– ^h	0 (0.0)	– ^h
Current relationship				
Yes	666 (88.1)	1.00	573 (78.0)	–
No	195 (83.3)	0.61 (0.40–0.94)*	203 (72.2)	–
Other ^g	0 (0.0)	– ^h	3 (60.0)	–

* $p < .05$; ** $p < .01$

^a Reference category = “No”

^b Total numbers for men and women differ from 894 and 1120 respectively due to weighting

^c *n* for consenting participants only

^d AOR, Odds Ratio adjusted for other variables in the column; CI, Confidence Interval

^e ESB, English speaking background

^f NESB, Non-English speaking background

^g Includes “Refused” and “Don’t Know”

^h Excluded from regression analysis due to insufficient *n*

Table 3. Relationships of Telephone Status and Significant Demographic Covariates with the Number of Reported Other-Sex Partners in the Previous Year

Predictors	Number of Sexual Partners				
	0		1 ^a	2+	
	<i>n</i> (Row %) (95% CI) ^b	AOR	<i>n</i> (Row %)	<i>n</i> (Row %) (95% CI) ^b	AOR
Men (N = 801)^c	$\chi^2(24) = 440.82$, $R^2_{\text{Nagelkerke}} = 0.52^{**}$ $R^2_{\text{Nagelkerke}}^d = 0.06^{**}$				
Telephone status					
Mobile only	20 (10.5)	0.70 (0.32–1.56)	112 (58.9)	58 (30.5)	1.44 (0.74–2.82)
Landline only	15 (30.6)	1.00 (0.42–2.37)	31 (63.3)	3 (6.1)	0.65 (0.16–2.56)
Mobile dual	33 (11.0)	0.71 (0.36–1.37)	216 (72.2)	50 (16.7)	1.15 (0.62–2.12)
Landline dual	40 (15.2)	1.00	195 (74.1)	28 (10.6)	1.00
Age group					$R^2_{\text{Nagelkerke}}^d = 0.23^{**}$
18-24 years	20 (19.8)	3.53 (1.29–9.62)*	38 (37.6)	43 (42.6)	1.69 (0.84–3.40)
25-39 years	14 (5.6)	1.00	181 (71.8)	57 (22.6)	1.00
40-49 years	4 (2.8)	0.35 (0.10–1.27)	124 (85.5)	17 (11.7)	0.63 (0.30–1.33)
50-64 years	23 (12.4)	1.96 (0.85–4.52)	148 (80.0)	14 (7.6)	0.36 (0.17–0.75)**
65+ years	46 (39.0)	12.40 (5.23–29.41)**	64 (54.2)	8 (6.8)	0.83 (0.31–2.20)
Household composition					$R^2_{\text{Nagelkerke}}^d = 0.33^{**}$
Living alone	30 (36.1)	1.07 (0.35–3.29)	27 (32.5)	26 (31.3)	8.56 (3.74–19.59)**
Shared	7 (7.8)	0.37 (0.09–1.52)	36 (40.0)	47 (52.2)	8.17 (4.00–16.68)**
Family ^e	28 (29.8)	1.22 (0.34–4.31)	30 (31.9)	36 (38.3)	5.98 (2.59–13.79)**
Couple	39 (7.7)	1.00	441 (87.5)	24 (4.8)	1.00
Other ^f	4 (13.3)	1.12 (0.24–5.22)	19 (63.3)	7 (23.3)	5.08 (1.82–14.17)**
Current relationship					$R^2_{\text{Nagelkerke}}^d = 0.32^{**}$
Yes	45 (7.1)	1.00	525 (82.3)	68 (10.7)	1.00
No	62 (38.0)	36.56 (12.91–103.50)**	29 (17.8)	72 (44.2)	4.90 (2.68–8.98)**

Other ^f	0	— ^g	0	(—)	0	— ^g
	(—)				(—)	
Women (N = 731)^c					$\chi^2(24) = 433.22, R^2_{Nagelkerke} = 0.58^{**}$	
Telephone status						$R^2_{Nagelkerke}^d = 0.09^{**}$
Mobile only	22 (17.2)	1.21 (0.57–2.56)	88 (68.8)		18 (14.1)	1.80 (0.65–4.96)
Landline only	30 (49.2)	1.10 (0.46–2.63)	29 (47.5)		2 (3.3)	2.61 (0.41–16.81)
Mobile dual	30 (14.0)	0.90 (0.48–1.69)	167 (78.0)		17 (7.9)	2.20 (0.84–5.79)
Landline dual	75 (22.9)	1.00	244 (74.4)		9 (2.7)	1.00
Age group						$R^2_{Nagelkerke}^d = 0.25^{**}$
18-24 years	13 (14.4)	1.67 (0.62–4.50)	59 (65.6)		18 (20.0)	1.54 (0.61–3.84)
25-39 years	15 (7.6)	1.00	166 (84.3)		16 (8.1)	1.00
40-49 years	17 (11.0)	1.67 (0.69–4.03)	130 (84.4)		7 (4.5)	0.84 (0.29–2.47)
50-64 years	43 (24.3)	4.01 (1.79–8.95)**	130 (73.4)		4 (2.3)	0.48 (0.13–1.75)
65+ years	68 (60.2)	19.74 (8.25–47.22)**	45 (39.8)		0 (0.0)	0.07 (0.00–7.85)
Household composition						$R^2_{Nagelkerke}^d = 0.37^{**}$
Living alone	54 (68.4)	1.07 (0.31–3.65)	19 (24.1)		6 (7.6)	8.16 (1.75–38.12)**
Shared	7 (13.7)	0.40 (0.09–1.77)	25 (49.0)		19 (37.3)	17.57 (4.64–66.53)**
Family ^e	42 (35.3)	1.11 (0.37–3.27)	61 (51.3)		16 (13.4)	7.12 (2.01–25.19)**
Couple	42 (9.3)	1.00	405 (89.8)		4 (0.9)	1.00
Other ^f	11 (35.5)	0.48 (0.12–1.98)	19 (61.3)		1 (3.2)	1.62 (0.16–16.48)
Current relationship						$R^2_{Nagelkerke}^d = 0.41^{**}$
Yes	48 (8.7)	1.00	489 (88.4)		16 (2.9)	1.00
No	108 (61.4)	34.16 (11.96–97.54)**	39 (22.2)		29 (16.5)	6.15 (2.62–14.43)**
Other ^f	0 (0.0)	— ^g	1 (50.0)		1 (50.0)	— ^g

* $p < .05$; ** $p < .01$

^a Reference category

^b AOR, Odds Ratio adjusted for other variables in the table; CI, Confidence Interval

^c N based on valid responses

^d On bivariate analysis

^e Includes “At home with parents/guardians” and “One parent family with children at home”

^f Includes “Refused” and “Don’t Know”

^g Excluded from regression analysis due to insufficient n

Table 4. Relationships of Telephone Status and Significant Demographic Covariates with Lifetime Sexual Experience

Predictors	Lifetime Sexual Experience						AOR	(95% CI) ^b
	Other-sex Only ^a	Any Same Sex		None				
	<i>n</i> (Row %)	<i>n</i> (Row %)		<i>n</i> (Row %)				
Men (<i>N</i> = 850)^c						$\chi^2(11)=58.99, R^2_{Nagelkerke} = 0.15^{**}$		
Phone status						$R^2_{Nagelkerke}^d = 0.01$		
Mobile only	180	(88.2)	14	(6.9)	10	(4.9)	0.59	(0.29–1.20)
Landline only	51	(94.4)	0	(0.0)	3	(5.5)	0.87	(0.25–3.08)
Mobile dual	293	(92.1)	16	(5.0)	9	(2.8)	0.58	(0.30–1.11)
Landline dual ^a	251	(91.6)	17	(6.2)	6	(2.2)	1.00	
Age group						$R^2_{Nagelkerke}^d = 0.07^{**}$		
18-24 years	97	(80.8)	6	(5.0)	17	(14.2)	1.46	(0.73–2.94)
25-39 years ^a	237	(88.8)	25	(9.4)	5	(1.9)	1.00	
40-49 years	148	(96.7)	3	(2.0)	2	(1.3)	0.28	(0.10–0.78)*
50-64 years	177	(93.2)	12	(6.3)	1	(0.5)	0.61	(0.29–1.27)
65+ years	116	(96.7)	1	(0.8)	3	(2.5)	0.27	(0.08–0.86)*
Household composition						$R^2_{Nagelkerke}^d = 0.11^{**}$		
Living alone	75	(84.3)	13	(14.6)	1	(1.1)	5.56	(2.54–12.18)**
Shared	87	(82.9)	7	(6.6)	11	(10.5)	4.04	(1.87–8.75)*
Family ^c	87	(82.9)	10	(9.5)	8	(7.6)	3.34	(1.48–7.54)**
Couple ^a	498	(96.5)	14	(2.7)	4	(0.1)	1.00	
Other ^f	29	(82.9)	3	(8.6)	3	(8.6)	5.45	(1.94–15.33)**
Women (<i>N</i> = 760)^c						$\chi^2(11)=67.21, R^2_{Nagelkerke} = 0.15^{**}$		
Phone status						$R^2_{Nagelkerke}^d = 0.05^{**}$		
Mobile only	102	(78.5)	25	(19.2)	3	(2.3)	1.28	(0.70–2.34)
Landline only	61	(95.3)	2	(3.1)	1	(1.6)	0.38	(0.10–1.42)
Mobile dual	186	(80.9)	36	(15.7)	8	(3.5)	1.54	(0.91–2.59)
Landline dual ^a	303	(89.4)	29	(8.6)	7	(2.1)	1.00	
Age group						$R^2_{Nagelkerke}^d = 0.10^{**}$		

18-24 years	71 (68.9)	23 (22.3)	9 (8.7)	0.97 (0.53–1.78)
25-39 years ^a	160 (79.2)	41 (20.3)	1 (0.5)	1.00
40-49 years	142 (89.9)	15 (9.5)	1 (0.6)	0.45 (0.24–0.86)*
50-64 years	170 (92.9)	8 (4.4)	5 (2.7)	0.32 (0.16–0.62)**
65+ years	110 (94.0)	5 (4.3)	2 (1.7)	0.31 (0.12–0.77)*
Household composition				$R^2_{Nagelkerke}{}^d =$ 0.08**
Living alone	74 (87.1)	8 (9.4)	3 (3.5)	2.34 (1.09–5.02)*
Shared	42 (75.0)	12 (21.4)	2 (3.6)	2.30 (1.09–4.86)*
Family ^e	94 (72.3)	27 (20.8)	9 (6.9)	3.24 (1.86–5.67)**
Couple	417 (91.0)	40 (8.7)	1 (0.2)	1.00
Other ^f	27 (79.4)	4 (11.8)	3 (8.8)	2.41 (0.90–6.42)

* $p < .05$; ** $p < .01$

^a Reference category

^b AOR, Odds Ratio adjusted for other variables in the table; CI, Confidence Interval; adjusted odds ratios are given

for both “Any Same Sex” and “None” versus “Other-sex Only”

^c N based on valid responses

^d On bivariate analysis

^e Includes “At home with parents/guardians” and “One parent family with child(ren) at home”

^f Includes “Refused” and “Don’t Know”