Introduction Exposure misclassification can occur when information on occupational circumstances is derived from interviews conducted with proxy respondents. It is unknown whether this can impact reliability ratings (confidence that the exposure actually occurred) by experts who assign chemical exposures based on job descriptions. We aimed to assess differences in reliability level assignments when information is derived from interviews conducted with proxy respondents versus self-respondents.

Material and Methods Data were collected in the context of the Prostate cancer & Environment Study (PROtEuS), which included 1,937 prostate cancer cases and 1,994 population controls. Complete occupational histories were collected during in-person interviews with proxies (n=135) and self-respondents (n=3,790). Industrial hygienists conducted semi-quantitative evaluations of exposure, including reliability, to about 300 agents.

Results In total, 129,297 and 4,275 chemical exposures were derived from interviews from self and proxy respondents, respectively. Most assignments were from blue-collar jobs (77%). Based on the latter, experts most often assigned exposures with a low reliability level when information was provided by proxies (23% vs 12% of exposures), without any notable difference when considering the case or control status. Similar results were found in analyses focusing on exposures in common occupations such as firefighters (low reliability; proxies: 48% vs self-respondents: 12%). For motor-vehicle mechanics and repairmen, most exposures were assigned with a medium or high reliability, the latter being slightly more frequent among self-respondents (72% vs 60%). Some inverse findings emerged for exposures among truck drivers, particularly among controls (low reliability; proxies: 5% vs self-respondents: 16%).

Conclusion Reliability ratings by experts assigning chemical exposures were generally lower when information on occupational circumstances was derived from interviews conducted with proxy respondents, irrespective of case/control status, but exceptions occurred for certain occupations.

Methodology

Introduction Using proxy respondents can improve response rates and reduce potential selection bias. However, possible differences in reporting by type of respondent have rarely been documented. We compared general and occupational information collected from proxies and self-respondents, including the interview duration and quality, number of jobs reported and the extent of missing data.

Methods Data from the Prostate Cancer & Environment Study, a population-based case-control study conducted in 2005–2012 in Montreal, Canada were used. General information and detailed descriptions of each job held by male subjects, aged 65 years on average, were elicited during face-to-face interviews. Linear regression estimated the association between respondent status (proxy/self) and interview duration, adjusting for age and interviewer. Poisson regression was used to examine the relationship with number of reported jobs, adjusted for age, interviewer and career length.

Results Analyses included 3,790 self-respondents and 135 proxy respondents; 72% of proxies were spouses. Proxies more often responded on behalf of blue-collar-workers. Interview duration for proxies was on average 25.1 minutes shorter than for self-respondents (95% confidence interval (CI) = -29.7; -20.5), with a difference more pronounced for blue-collar workers. Interview quality was judged by interviewers as doubtful/poor for 11% of proxies and 5% of self-respondents. Proxies reported 1.5 fewer jobs than self-respondents (95%CI = -1.8; -1.2), similarly for blue- and white-collar workers. The proportion of subjects who provided no details on work schedules, chemical exposures, use of protective equipment or workplace characteristics was higher among proxies than self-respondents (7% vs 4%). There were only marginal differences in reporting between proxies and self-respondents according to the case or control status of index subjects.

Conclusion Findings suggest that the quantity and quality of occupational information elicited from proxies may be inferior to that of self-respondents, but that differences in reporting are non-differential according to disease status.