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Correlates of stalking victimization in Canada: A model of social support and comorbidity

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ABSTRACT

Research into stalking victimization has proliferated over the last three decades, but little research has been done with Canadian data and several theoretical questions related to stalking victimization remain largely unanswered. To address the gaps in the literature, this study advances an integrated approach of neighborhood social support from criminology and comorbidity model from health science to examine the correlates of stalking victimization. Relying on data from Canadian General Social Survey, results confirm that the correlation model is better justifiable than the causal model in exploring the relationships between risk factors and being stalked and that variables broadly derived from social support theory, such as community order and trust, are statistically significant correlates of stalking victimization. In addition, most variables in the comorbidity model are significant correlates of stalking victimization. We conclude that social contexts and individual life habits are both important for the risk of stalking victimization.

Ever since California passed an anti-stalking law in 1990, all 49 states in the United States of America have followed suit (Private Rights Clearinghouse, 2019). Although the legal definitions of stalking differ somewhat among states, the idea of anti-stalking legislations have spread to almost all industrialized societies in the world, including Canada (van der Aa, 2018). The essential concerns of stalking lay on victims’ fear or emotional distress caused by stalkers’ repeated following, harassment, and credible threatening words or behaviors against victims or their close others, with some cases ending up with extreme violence (see Deutsch et al., 2020). While the annual rate of stalking fluctuates, the latest statistics indicate that about 6% of Canadians were reported being stalked in the preceding five years (Statistics Canada, 2018).

Research into stalking victimization has also proliferated over the last three decades (Belknap and Erez, 1995; Fisher et al., 2002; Nobles et al., 2014; Reys et al., 2018; Reys et al., 2016; Tjaden; Thoernes, 1998). Key theoretical questions related to stalking victimization risk, including those occur in cyberspace, however, are largely unanswered. Although victims of stalking and cyber-stalking may have some differences, cyberstalking can be viewed as a subset of the generalized stalking (Nobles et al., 2014). The current study proposes that a joint consideration for social support (like cohabitating with friends or family) and co-occurring health-related issues (such as poor mental health) may help clarify factors associated with stalking victimization. This new model attempts to address several gaps in the existing literature. First, we argue that the existing causal or directional model is inadequate in the study of stalking victimization. Previous multivariate studies predicting stalking victimization commonly employ binary logistic regression, which is a causal modeling technique, to analyze cross-section data sets, implying that the variables in the model have a
causal order. However, determining the causality with cross-sectional data can be quite misleading, and inadequate theoretical framework cannot rule out alternative explanations. For example, inconsistent empirical evidence should have alerted scholars to whether it is one’s routine behaviors that cause stalking victimization and/or vice versa (see Reyns et al., 2016; Sanderson, 2020). The risk factors of being stalked in routine activity framework may be simply correlates, not causal factors of being a stalking victim (see the following sections for further discussion).

Second, the oft-used theory of lifestyle-routine activity in explaining stalking is largely a pragmatic perspective (Lilly et al., 2007), ineptly blaming victims not changing their own routines. Given the fact that victims’ some daily routines are usually known to stalkers, especially among intimate partners, changing daily routine to avoid immediate consequences provides only a short-term remedy, not a long-term solution. The implication of changing victims’ routines to avoid victimization can thus be counter-effective by mistakenly shifting the responsibility to the law-abiding party (see Townsend, 2020). Such a framework in practice may doubly jeopardize victims’ wellbeing (e.g., excessive stress as well as extra costs associated with moving, loss of job time, job changing, court hearings) and erode their confidence in the justice system.

Third, we address these shortcomings noted above by positing that social context as well as individual behaviors are important correlates of stalking. As such, we bring into support theory, first systematically proposed by Francis T. Cullen (1994), to the study of stalking and advance a more comprehensive model combining neighborhood social support and comorbidity approaches. There has been a growing recognition and interest in the intersection of health and criminology (Vaughn et al., 2020), including stalking victimization. Thus far, few studies have attempted to integrate the two lines of scholarly research in the study of stalking victimization. Finally, there is a dearth of empirical study in Canada on the issue of stalking victimization even though anti-stalking legislation has been adopted since the 1990s. Because of the limitations in prior research, in this study, we rely explicitly on the correlation model to better unpack the relationships between different risk variables and being stalked measured in cross-sectional data sets.

1. Prior stalking victimization studies

Not only are the legal definitions of stalking differ somewhat among states and between nations, but so are the definitions of stalking used by researchers (Fox et al., 2011; Owens, 2016). The key elements for social research are that perpetrators maliciously approach victims, more than once, who are subsequently frightened, fearful, and threatened, or distressfully trigger concerns of their safety or the safety of someone they know (Fox et al., 2011; McFarlane et al., 1999; Nobles et al., 2014; Owens, 2016; Spitzberg; Cupach, 2007). Unlike rape that requires the physical contact, the focal concern of stalking is on seriously psychological reactions from the victim. The majority of cases do not lead to physical violence between victims and offenders, but stalking signals other potential violence. In Canada, stalking is known as “criminal harassment” under the Criminal Code (1985). The behavior is considered “stalking” when the conduct involves a variety of repeated pursuit behavior, such as following, spying on, or otherwise communicating with the victim either in person or electronically, and the victim experiences feelings of fear or other comparable emotional reactions (e.g., anxiety, depression) as a result of the stalker’s course of conduct. This definition of stalking includes cyberstalking for which the stalking happens exclusively through Internet-enabled devices, such as cell phones, computers, and other electronic devices (Nobles et al., 2014; Reyns et al., 2018).

The concept of stalking is further complicated by the fact that a noticeable portion of victims do not label their experience as stalking even though the legal definition or criteria are met (Fox et al., 2016). Situational factors like seriousness of the behavior, victims’ psychological response, relationship between the victim and the offender, and the advice that the victim receives from others are found to have impacts on victims’ acknowledgement of whether stalking has occurred (for discussions, please see Englebrecht and Reyns, 2011 and Owens, 2016). Based on a national representative survey, Ngo (2014) reported that affect model (victims’ psychological response) is the best to correlate with stalking acknowledgement; if victims are afraid, anxious or concerned, frightened, and change day-to-day activities, they are more likely to acknowledge stalking.

Empirically, Ngo and Paternoster (2016) have found that feeling frightened and physically sick are oft-emerged emotional responses to stalking, especially when stalkers spy on or follow the victims. Indeed, the negative emotion like fear that a reasonable person would perceive is a condition before a pattern of pursuit behavior can be considered stalking (Spitzberg and Cupach, 2007) although it is possible that some victims of stalking may not experience fear (see Owens, 2016). Based on Canada’s Uniform Crime Reporting, which cover close to sixty percent of the population, the rate of stalking increased in the first decade of 2000s in cases known to the police. Other sources of information like Canadian General Social Survey portray a different picture because of a different scale used in the survey. According to the statistics of the Canada census, about 8% of women and 5% of men aged 15 and older reported being stalked in the preceding five years. Stalking victimization appears to be more prevalent among younger individuals (48% are aged 15 to 34) and female (62%), and stalkers are more likely to be male and known to the victims in Canada (Stalking in Canada, 2014, 2018). Similar characteristics of stalking victims are also found in the U.S. (Catalano, 2012). Relying on the data from residential households with a telephone in all 50 states and the District of Columbia, Tjaden and Thoennes (1998) also found that stalking was more common for younger women and for certain ethnic groups (e.g., American Indian/Alaska Native). Thus, many prior studies on stalking focus on young female as the group of victims (Belknap and Erez, 1995; Diette et al., 2014; Fisher et al., 2002; Ngo and Paternoster, 2016; Reyns et al., 2018).

Among academics, only a few studies have been done using data in Canada (Adams et al., 2009; Cripps and Stermac, 2018; Finnegan et al., 2018; Storey, 2016). Adams et al. (2009) studied the stalking of members of the parliament and the legislative assemblies in Canada and concluded that most stalkers suffered from mental disorder. Cripps and Stermac (2018) focused their descriptive attention on cyber-sexual violence against women on an Ontario university campus in Canada. By manipulating the details of an actual stalking case, Finnegan et al. (2018) examined the role of actor sex (man to woman and woman to man) on perceptions of
stalking in a sample of police officers in Windsor, Canada, and found that officers who read the man-to-woman cases anticipated more physical, emotional, psychological, and economic harm, as well as greater likelihood of a prison sentence by judges, than officers who read the woman-to-man scenarios. With a focus on a particular group of professionals, Storey (2016) found that about 7% of counselors have been stalked by their clients, especially among those who provide treatment for forensic, substance abuse, sexual abuse, and sexuality issues, as well as those with poor skills. Prior studies with Canadian context are mostly descriptive in nature. The governmental report presents a limited insight about the factors that may be related to the risk of stalking victimization, and none of the scholarly efforts directly or indirectly apply any criminological theory in explaining stalking victimization as a social pattern, except Reyns et al.’s work (2016), which we will discuss in the following section.

2. Theoretical frameworks

Applying the lifestyle-routine activity theoretical perspective to identify risk factors for victimization in Canada, Reyns et al. (2016) developed gender-based theoretical models to assess the possible moderating effects of gender on the relationship between lifestyle-routine activity and victimization risk. Cohen and Felson’s (1979) routine activity theory was initially proposed to understand changes in patterns and trends of predatory criminal events across time and space, and this theoretical framework has been applied to a wide range of victimization experiences. For a crime to occur, routine activity purports that three essential elements must be emerged in the physical space at the same time: motivated offenders, suitable targets, and the absence of capable guardians. Based on a representative sample of more than 15,000 residents of Canada from the Canadian General Social Survey (GSS), Reyns et al.’s (2016) analysis results suggested conditional support for lifestyle-routine activity theory and for the hypothesis that predictors of stalking victimization may be contingent on gender. Specifically, work or school (exposure), household income, relationship status (target suitability) are related to being stalked, but drinking frequency is not. All of the guardianship variables are statistically significant, but in the opposite directions, and the authors attributed these effects as a measurement issue of temporal ordering. In other words, using a causal theoretical framework can be inadequate to conclude risk factors for victimization when cross-sectional data is analyzed. Also, “total victimization” as a control variable measuring other victimization in the last 12 months positively correlates with the chance of being stalked. The empirical findings suggest weak support for gender difference in correlates of stalking.

In addition, the policy implications of routine activity/lifestyle framework are quite controversial. Changing victims’ life and ordinary routines to avoid victimization probably should be promoted as a short-term patch, and strengthening and building social supports in the community may be a long-term solution as effective outcomes. As demonstrated well in Reyns et al.’s (2016) study, the temporal order of the measured behavior is often messed up and thus the related policy implications are unclear. Stalking scholarship to date has produced weak and inconsistent empirical support of lifestyle/routine activity approach in explaining variations in stalking victimization (Vakhitova et al., 2016).

In their recent work, Reyns et al. (2018) moved away from routine activity/lifestyle theory in explaining cyberstalking victimization – a separable but related variant of offline stalking that exclusively takes place through widespread electronic devices, such as cell phones, computers etc. (see Nobles et al., 2014) – and expanded the theoretical framework to include self-control and control balance theory, in addition to opportunity framework (a variant of routine activity theory). Low self-control individuals are characterized with risk-seeking, impulsivity, self-centeredness, hot temper, and a preference for simple tasks and physical activities (Gottfredson and Hirschi, 1990) while control unbalanced between the amount of control exerted and subjected to would lead to deviance (Tittle, 1995). Both theories were extended to explain variation of cyberstalking victimization in Reyns et al.’s (2018) study. A direct effect for control deficit in addition to opportunity and an indirect effect of self-control on stalking victimization risk were found. However, their data (college women samples) limited the generalizability of the findings, and constrained inferences of the causal model did not seem to fit their argument. Other tests of control balance theory have resulted in mixed results (Fox et al., 2016; Nobles and Fox, 2013). Somewhat more consistent results have come out of the tests of self-control theory in reducing stalking (Fox et al., 2016) and in lessening cyberstalking victimization indirectly (Reyns et al., 2018).

Although above-mentioned criminological theories have proven useful in understanding stalking victimization, the current study builds on these studies and goes beyond all the afore mentioned frameworks to develop a more comprehensive model of stalking victimization. Our analyses in this study, using a nationally representative sample of Canada, contribute to the empirical literature by assessing the correlates of stalking victims. We explicitly abandon the routine activity framework and causal modeling derived from cross-sectional data and propose to combine two complementary approaches in examining the correlates of stalking: neighborhood social support model and comorbidity model.

Social support theory stems from sociological insight of Durkheim who argues for the importance of social integration and social ties. It was first applied in the sociological research of mental illness in the 1980s (Lin et al., 1986). Then in 1994, Francis T. Cullen conceived social support explicitly as a concept capable of organizing theory and research in criminology. The crux of social support theory is that no one is an isolated being in our society, and individuals with social support tend to live a healthy and normal life serving as a buffer against delinquency and deviant behaviors. Social support provides a general social context where an individual can thrive. Social supports exist at all levels of human interaction in society and in the immediate interactions with families and among friends, and they also exist in the interaction with larger social networks of neighborhoods, private organizations, and social institutions. The extent of social supports in a neighborhood varies. Where stronger informal social supports, such as trust, exist, various deviant behavior may be contained. Social supports create the context in which strong social bonds can emerge because enduring relations based on mutual trust are forged through interaction and the giving of assistance (Cullen, 1994). Social support theory has been tested with the dependent variables such as homicide (Altheimer, 2008; Pratt and Godsey, 2003), corruption (Zhang et al., 2009), anomie (Cao et al., 2010; Zhao and Cao, 2010), and illegal drug use (Cao et al., 2018). Yet, to the best of our knowledge, it has not been
applied to the study of victimization, stalking included.

We believe that social support theory, like most other crime theories (such as control balance theory, self-control theory), can be adjusted to shed light on patterns of victimization. The current study thus considers a range of variables broadly derived from social support theory and explore their correlations with stalking victimization. First, three aspects of dwelling arrangements are investigated: living alone, marriage, and housing types. The social support theory could be extended to suggest that when strong bonds are salient in a person’s life, the likelihood of being stalked is reduced. The variable of marriage was conceptualized as a guardianship in some prior studies utilizing the routine activity framework. We, however, regard it as an instrumental and expressive bond to the conventional society and as a social commitment to healthy life in the present study. Dwelling place is a context that has effects on crime and victimization as well as perception of social order and disorder. The housing types might be related to the opportunity of social interaction. Living in apartment housing, whether low-rise or high-rise, tends to increase the density of social interaction, and this may have direct implications for the frequency of stalking. We explore whether these social support conditions are related to the probability of being stalked.

Second, we investigate whether community order is associated with stalking. We are aware of the fact that stalkers and their victims might not live in the same community. However, living in a stable and well-connected community, where a resident enjoys an extended buffer zone from their stalkers, would certainly reduce or alleviate the fear and worry about stalking. We therefore hypothesize that since social support varies in each neighborhood, more community order would be associated with lower risk of being stalked. Social support theory (Cullen, 1994) suggests that crime-related reactions are shaped by the social context that surrounds individuals. Neighborhood contexts are important correlates of both opportunity and quantity/quality of human interaction (also see Cao, 2014; Skogan, 1990). We assess the possible link between community order and stalking victimizations.

Third, we examine whether confidence in the police and trusting people in the neighborhood would be related to stalking victimization. As social support theory (Cullen, 1994) would argue, when trust is pervasive and when people feel a social bond toward one another, deviant behavior including stalking would be kept at bay and stalking victims may be fewer. Cohesion and trust are also part of “collective efficacy” measure (Sampson et al., 1997). These variables have not been considered and tested in the literature of stalking victimization.

Stalking is a complicated social problem and it leaves a psychological footprint (Diette et al., 2014; Ngo and Paternoster, 2016) to its victim. No single theory is capable of explaining all variance of why some people are more likely to be the victims of stalking than others. While variables derived from social support theory may expound some variance of stalking, a complementary model of comorbidity from health science can add to the explained correlation coefficients of stalking. Indeed, being stalked rarely occurs independent of other issues at the individual level; thus comorbidity between being stalked and other factors are typically at work. Prior research has found that sexual victimization and propensity to be at places with alcohol are related to being stalked (Fisher et al., 2002). Reynolds et al. (2016) also reported that total victimization (experiences of victimization other than stalking) as a control variable positively correlates with the chance of being stalked. Others have discovered that being stalked is related to psychological correlates of drug use (Nobles et al., 2018; Reynolds and Scherer, 2018), post-traumatic stress disorder (Nobles et al., 2018), depression and negative emotional reactions (Johnson and Kercher, 2009), personality disorder (McEwan et al., 2017), and mental disorder (Adams et al., 2009) or mental disability (Reynolds and Scherer, 2018). In this study, we propose that behaviors such as alcohol consumption, illegal drug use, cyber bullying, total victimization, and mental health may be co-occurring cues of being stalked. In addition to the hypotheses from the social support model, we test whether an array of negative indicators of wellbeing - alcohol consumption, illegal drug use, cyber bullying, total victimization, and mental health - are associated to being stalked in Canada with four control variables: age, education, gender, and visible minority.

3. Method

Data analyzed in this study were from Canadian General Social Survey, Cycle 28 (GSS thereafter). The main objective of the General Social Survey on Canadians’ victimization is to better understand why Canadians perceive crime and the justice system. The 2014 GSS relied on Random Digit Dialing (RDD) to collect cross-sectional data from a random sample of Canadians aged 15 and over. Persons without telephones cannot be reached, which means that about 1% of households in Canada were excluded from the sampling frame. Also, institutionalized Canadians were not included. Data collection was carried out via Computer Assisted Telephone Interviewing (CATI), a method with considerable flexibility with respect to sample design. The targeted population was the Canadians aged 15 and over, living in the provinces and territories. The overall response rate for 2014 GSS was 53% in the provinces and 59% in the territories (General Social Survey, Cycle 28, 2014 [Canada]: Victimization, Main File, 2018). After taking off the missing data, the final sample size in the regression analyses was 25,755.

3.1. Correlates of stalking

In this study, the variable “victims of stalking” is constructed by combining 12 items in the survey to refer to “Canadians’ self-reported experiences of stalking, defined as repeated and unwanted attention that causes an individual to fear for their personal safety or for the safety of someone they know” in the past five years (Stalking in Canada, 2014, 2018, p. 1). Note that this variable is slightly different from the variables of stalking commonly used in the research because of the elements of fear “for the safety of someone they know” and the time period. Most studies only include the victim themselves and set the time frame as one year. The variable victims of stalking is a robust global indicator and it is measured as a dichotomized variable where a person was stalked or harassed in a way that caused them to fear for their safety or the safety of someone known to them in the past 5 years is coded as 1, and
the reference group is coded as 0 (General Social Survey, Cycle 28, 2014, 2018, p. 102). The percentage of being stalked is slightly lower than that reported in the previous cycle of victimization: Approximately 6.5% reported being stalked in the Cycle 28 compared with 7% in the last cycle (Stalking in Canada, 2014, 2018). The variable has 1508 (or 4.6%) missing cases and its distribution is highly skewed. No efforts, however, were made to address the missing data or the skewness.

The proposed correlation model contains 15 variables as the correlates of stalking victims. We have grouped these variables into three general categories: 1) neighborhood social support variables, 2) comorbidity variables, and 3) socio-demographic controls.

First, our investigation includes six neighborhood social support variables: living alone, single detached houses, marriage, community order, confidence in the police, and trust. Living alone and marriage provide us a sense of social structure within which an individual lives while single detached house represents the physical structure. Living alone is a dichotomized variable with 1 = living alone and 0 = other living arrangements, such as living with a child, a spouse and child, with parents etc. Marriage is coded as 1 = married and widowed, and 0 = non-married (e.g., single, living common-law, separated, and divorced). Although it is possible to combine the category of “living common-law” into the married category, our cross-tabulation analysis indicated that the pattern of stalking in the category of “living common-law” is more similar to those found in the non-married categories of being single, separated, and divorced. Thus, we decided to leave this category with the others as the reference group. The correlation between living alone and marriage is 0.28 and they capture different aspects of social structure: living alone is the social arrangement while marriage is a legal bonding with both emotional and communal attachment. Single detached house (yes = 1) is in contrast with low-rise apartment and high-rise apartment housing (0).

Community order refers to a resident’s perception of the neighborhood they live in. The concept was measured with seven items drawn from Skogan’s original scheme (1990). The seven items encompass two aspects: physical order (e.g., “garbage or litter lying around”) and social order (e.g., “noisy neighbors or loud parties”), which is conceptually similar to “incivility” (Cao, 2014). The respondents were asked to state whether each of the seven orderly conditions of their community were “1 = a very big problem,” “2 = a fairly big problem,” “3 = not a very big problem” or “4 = not a problem at all.” The higher value represents more order. The reliability coefficient for this scale is 0.813, which is very good. Confidence in the police was captured by a six-item index that assessed how well respondents believed that their local police force (excluding security guards, fire marshals and all others who have no authority to make arrests), on average, enforced the laws, was responsive, provided information to reduce crime, cared about neighborhood safety, and treated people fairly. The final index captures three aspects of confidence in the police: dependability, competency, and respectfulness (Cao, 2014). The respondents were asked to use a three-point scale which included “good job”, “average job”, and “poor job” to rate the six items. An additive index was formed by reversing the order of all these items so that a high score indicates high confidence in the police. The Cronbach alpha for the index is 0.874. The last variable of this group is trust which refers to the degrees that a respondent feels that s/he can trust people in the neighborhood: 1 = cannot be trusted at all and 5 = can be trusted a lot.

Second, this study assesses the correlates of a group of variables we conceptualize as the comorbidity model from health science. There are five variables in this group: alcohol consumption, cannabis usage, cyberbullying victimization, total victimization, and mental health. Alcohol consumption is an ordinal variable with 1 = daily and 7 = never. We reversed the order so that a higher number representing a more frequent drinker. Cannabis use is a binary variable where 1 equals to having used marijuana, hashish, hash oil or other cannabis derivatives in the past month, and 0 equals to no. Cyberbullying victimization is a dummy variable where receiving any threatening or aggressive emails or instant messages in the past five years was coded as 1 and no as 0. Total victimizations (excluding domestic violence by ex-spouses or ex-partners) is an ordinal variable where 0 means no victimization in the past 12 months and three means three or more victimizations. According to General Social Survey, Cycle 28, 2014, 2018, pp. 192–193), victimization experiences include the following: sexual assault, attempted and actual robbery, assault, attempted and actual break and enter, attempted and actual motor vehicle theft, attempted and actual theft, and vandalism. Mental health is an ordinal variable where the respondent self-evaluated their general mental health and the higher values represent better mental health.

Third, this investigation includes four socio-demographic variables as controls. They are age, education, gender, and visible minority. Age is an ordinal variable with seven categories: 1 = 15–24, 2 = 25–34, 3 = 35–44, 4 = 45–54 and 5 = 55–64; 6 = 65–74 and 7 = 75 years old and over. Education is also an ordinal variable with 1 = less than high school, 2 = high school diploma or its equivalent, 3 = trade certificate or diploma, 4 = some college, 5 = university certificate or diploma below bachelor’s, and 6 = bachelor’s degree, and 7 = university certificate or degrees above bachelor’s degrees. Gender is a dummy variable, coding males as 1 and females as 0. Finally, visible minority status is a dichotomized variable, with those who answered yes to the question as 1 and the rest as 0. The Canadian Employment Equity Act defines visible minorities as “persons, other than Aboriginal persons, who are non-Caucasian in race or non-white in colour” (General Social Survey, Cycle 28, 2014, 2018, p. 177; also see Cao, 2014). Specifically, it includes South Asian (e.g., East Indian, Pakistani, Sri Lankan), Chinese, Black, Filipino, Latin American, Arab, Southeast Asian (e.g., Vietnamese, Cambodian, Malaysian, Laotian), West Asian (e.g., Iranian, Afghan), Korean, Japanese, and others. Non-visible minority includes single origin White, single origin Aboriginal, and multiple origin White/Latin American and White/Arab-West Asian, as per Census definition.

Missing data were not a serious problem with this data set. Age, gender, marriage, and total victimizations do not have any missing values. Visible minority status has 1.5 percent of missing data, marijuana use has 1.1 percent, and cyber bullying has 16.9 percent of missing data. We used them as they are, as we tested the possibility of confounding effects by excluding them in the models and found no significant effects. We used the means of ordinal variables to replace the missing values (trust, education, mental health) or the index variables (neighborhood problems and confidence in the police). We ran separate regressions without replacing the missing values. The results are similar. SPSS 23 was used to analyze the data. Since the variable of victims of stalking is a dichotomized variable, the binary logistic regression was employed.
4. Results

Table 1 presents the descriptive statistics for all variables included in the analysis. Nearly 7 percent of respondents were victims of stalking in the past five years. The sample is slightly unbalanced with 46 percent of males and 54 percent of females. The majority of respondents’ highest educational attainment is high school diploma. Fourteen percent respondents are identified as visible minorities, which is underrepresented. Approximately 26 percent of respondents were living by themselves, and 65 percent lived in the single detached houses. More than half of the sample were either married or widowed. About 6 percent used a form of cannabis products last month. Approximately 4 percent received threatening messages in the past five years, and less than 3 percent had other victimization experiences in the past 12 months. On the scale of 5, most respondents enjoyed good mental status.

Table 1 describes the variables and their statistics. The logistic regression analysis was conducted to examine the correlates of stalking victimization. Sociodemographic variables such as age, gender, education, and marital status were entered as independent variables. Control variables included alcohol consumption, cyberbullying, and health status. The regression model is statistically significant, with a likelihood ratio chi-square of 2052. The model fits the data well, with a Nagelkerke R-squared of 0.19. The odds ratio for each variable indicates the change in the odds of being stalked.

Table 2 reports the regression coefficients and exponentials with 95% confidence interval. The overall model is statistically significant. The goodness of fit indexes look good: Nagelkerke $R^2$ is 0.19, –2 log likelihood is 11,189, and model chi-square is 2052. Since we have a large sample size, we preset the significance level at 0.01. All correlates except the effects of visible minorities are statistically significant.

Five variables in the neighborhood social support group are statistically significant correlates of stalking victimization. Consistent with the expectation from the insight of social support theory, living alone by oneself increases the risk of being stalked, and the married and widowed are less likely to be stalked. Living alone is associated with the odds of being stalked by 22 percent and the married and widowed are 36 percent less likely to be stalked. Single detached house does not statistically relate to the risk of being stalked. That is, people living in the single detached house have a similar chance of being stalked as those living in low- or high-rise apartment buildings. Community order is a significant correlate of stalking; each unit increase in the community order index results in 5 percent reduction in being stalked. For every unit increase in confidence in the police, there is a 7 percent decrease in the odds of being stalked. The more one trusts people in the neighborhood, the less likely he/she would be stalked. Each unit increase in the measure of trust would be associated with the reduction of being stalked by 16 percent. People in the communities with more social order tend to experience less risk of stalking victimization.

Table 1
Descriptive statistics of all variables.

| Variables | Means | Standard Deviation | Range |
|-----------|-------|--------------------|-------|
| 1. Stalking (yes = 1) | .065 | .246 | 0-1 |
| 2. Living alone (yes = 1) | .256 | .437 | 0-1 |
| 3. Marriage (married & widowed = 1) | .542 | .498 | 0-1 |
| 4. Single house (yes = 1) | .648 | .478 | 0-1 |
| 5. Community Order | 26.133 | 2.901 | 7-28 |
| 6. Confidence in the police | 10.800 | 2.301 | 1-13 |
| 7. Trust people in neighborhood | 3.880 | 1.016 | 1-5 |
| 8. Alcohol consumption | 3.240 | 1.841 | 1-7 |
| 9. Cannabis Use (yes = 1) | .056 | .230 | 0-1 |
| 10. Cyberbullying Victimization (yes = 1) | .035 | .185 | 0-1 |
| 11. Mental Health Status | 4.018 | .934 | 1-5 |
| 12. Total victimization | .026 | .659 | 0-3 |
| 13. Age (15 and over) | 4.040 | 1.832 | 1-7 |
| 14. Education | 4.503 | 1.930 | 1-7 |
| 15. Gender (male = 1) | .457 | .498 | 0-1 |
| 16. Visible Minorities (yes = 1) | .139 | .347 | 0-1 |

n = 33,089.
different studies. The results of the current study, therefore, have to be understood within this constraint. The dual purpose of this study is to go beyond oft-tested but ill-supported lifestyle/routine activity theory in examining stalking victimization. In this study, we have examined the correlates of stalking victimization. We have found that the variables broadly interpreted and derived from main propositions of social support theory are significantly related to the risk of being stalked. That is, when there is a lack of or weakening of social support in the neighborhood, the chances of being victims of stalking tend to be more prevalent.

Specifically, dwelling arrangements are related to the risk of being stalked, which is consistent with findings from prior studies (Fisher et al., 2002; Reyns et al., 2016). Married persons are significantly less likely to be stalked while living alone by oneself tends to associate with more risk of being stalked. Social support theory (Cullen, 1994) postulates that supportive social relations are integral to healthy human life. It regards marriage as an instrumental and expressive social bond promoting a supportive micro-environment that decreases the chances of being a stalking victim and improves a person’s psychological adjustment. The lifestyle routine activity theory typically would treat marriage as a proxy of guardianship. However, the lifestyle routine activity theory cannot settle whether the stalker is warded off by the lifestyle of married people or stalked victims incline to step into a relationship for guardianship. The problem does not only come from oft-employed cross-sectional survey data but also the adopted theoretical framework. On the other hand, social support theory regards a supportive marriage as a means to personal safe guarding, as well as meeting the end needs for affection, companionship, and comfort of emotional disturbance from stalking. As a family support, a spouse/partner can deliver a cohesive and integrated supportive environment against the odds of stalking victimization. Stronger basic units of the community – family – can subsequently and collectively sustain a robust and prosperous social environment.

In addition, the results showed a significant and inverse correlation between perceived community order and being a stalking victim, which is consistent with the expectation derived from social support theory. Increased perceived community order is associated with reduced chances of being stalked. As demonstrated in the previous literature, community contexts are indeed related to the risk of victimization (Cao, 2014; Ren et al., 2005; Skogan, 1990; Sampson et al., 1997). A physically and socially disorder community signals that residents devote less efforts to maintenance of their immediate environment, including suspicious behavior by stalkers. Thus, the more social support there is in a community, the lower the chance of being stalked.

Other variables derived from the broadly interpreted social support theory are also found to be significant correlates with stalking victimization and aligned with the theoretical prediction. For example, confidence in the police is reversely correlated with the chance of being stalked, and there is a negative correlation between trust in neighbors and being stalked. Indeed, people with confidence in the formal social control institution – the police – and who are popular and feel that they can trust people in the neighborhood – the

### Table 2
Correlates of stalking victimization in Canada.

| Variables                        | b     | Exp (β) | 95% Confidence Interval |
|----------------------------------|-------|---------|-------------------------|
| Neighborhood Social Support      |       |         |                         |
| Living alone (yes = 1)           | .201* | 1.222   | 1.060–1.410             |
| Marriage (yes = 1)               | -.461*| .631    | .554–.719               |
| Single house (yes = 1)           | .132  | 1.141   | 1.017–1.280             |
| Community Order                  | -.060*| .942    | .928–.955               |
| Confidence in the police          | -.079*| .924    | .906–.942               |
| Trust                            | -.177*| .838    | .794–.885               |
| Comorbidity                      |       |         |                         |
| Alcohol consumption              | .020  | 1.020   | .988–1.053              |
| Cannabis Use (yes = 1)           | .226  | 1.267   | 1.064–1.508             |
| Cyberbullying Vic. (yes = 1)     | 1.880a| 6.556   | 5.606–7.668             |
| Victimization                    | .293a | 1.341   | 1.265–1.421             |
| Mental Health                    | -.296a| .744    | .706–.783               |
| Controls                         |       |         |                         |
| Age                              | -.079a| .924    | .889–.961               |
| Education                        | -.033 | .967    | .940–.995               |
| Gender (male = 1)                | -.596a| .551    | .494–.615               |
| Visible Minorities (yes = 1)     | -.030 | .970    | .835–1.128              |
| Constant                         | 1.936a|         |                         |

N = 25,755.
* a < .01.

5. Discussion and conclusion

Stalking is a unique form of criminal behavior, and it has become an increasingly disturbing public issue in the industrialized world. The highly subjective nature of stalking as a problem behavior is one of the reasons that creating a unified operationalization has been so difficult. One of the direct consequences of different operationalizations of stalking in research is the comparison of results from different studies. The results of the current study, therefore, have to be understood within this constraint. The dual purpose of this study is to go beyond oft-tested but ill-supported lifestyle/routine activity theory in examining stalking victimization among residents in Canada, and to offer an alternative novel approach in understanding the correlates of stalking victimization. In this study, we have expanded the theoretical horizon to utilize criminological theory initially developed to explain crime to enlighten patterns of stalking victimization. Combining social support theory and comorbidity model from health science we have examined the correlates of stalking victimization. We have found that the variables broadly interpreted and derived from main propositions of social support theory are significantly related to the risk of being stalked. That is, when there is a lack of or weakening of social support in the neighborhood, the chances of being victims of stalking tend to be more prevalent.

Specifically, dwelling arrangements are related to the risk of being stalked, which is consistent with findings from prior studies (Fisher et al., 2002; Reyns et al., 2016). Married persons are significantly less likely to be stalked while living alone by oneself tends to associate with more risk of being stalked. Social support theory (Cullen, 1994) postulates that supportive social relations are integral to healthy human life. It regards marriage as an instrumental and expressive social bond promoting a supportive micro-environment that decreases the chances of being a stalking victim and improves a person’s psychological adjustment. The lifestyle routine activity theory typically would treat marriage as a proxy of guardianship. However, the lifestyle routine activity theory cannot settle whether the stalker is warded off by the lifestyle of married people or stalked victims incline to step into a relationship for guardianship. The problem does not only come from oft-employed cross-sectional survey data but also the adopted theoretical framework. On the other hand, social support theory regards a supportive marriage as a means to personal safe guarding, as well as meeting the end needs for affection, companionship, and comfort of emotional disturbance from stalking. As a family support, a spouse/partner can deliver a cohesive and integrated supportive environment against the odds of stalking victimization. Stronger basic units of the community – family – can subsequently and collectively sustain a robust and prosperous social environment.

In addition, the results showed a significant and inverse correlation between perceived community order and being a stalking victim, which is consistent with the expectation derived from social support theory. Increased perceived community order is associated with reduced chances of being stalked. As demonstrated in the previous literature, community contexts are indeed related to the risk of victimization (Cao, 2014; Ren et al., 2005; Skogan, 1990; Sampson et al., 1997). A physically and socially disorder community signals that residents devote less efforts to maintenance of their immediate environment, including suspicious behavior by stalkers. Thus, the more social support there is in a community, the lower the chance of being stalked.

Other variables derived from the broadly interpreted social support theory are also found to be significant correlates with stalking victimization and aligned with the theoretical prediction. For example, confidence in the police is reversely correlated with the chance of being stalked, and there is a negative correlation between trust in neighbors and being stalked. Indeed, people with confidence in the formal social control institution – the police – and who are popular and feel that they can trust people in the neighborhood – the
informal social control – show a supportive social environment with a low risk of being stalked. Police officers are often the first responders to stalking incidents and confidence in them to provide gender-blind assistance (Finnegan et al., 2018), which may affect whether incidents of stalking or harassment would be reported, is important. Put it differently, perceived social supports from an individual’s immediate environment reveals the insight about the person’s perceptions of the individual-level and ecological support and anticipations of foreseeable consequences (Ren et al., 2005). Extending the spirit of social support theory (Cullen, 1994), individuals with social support tend to live a healthy and normal life, and a strong communal life makes them less likely to risk being stalked. Together, with community order, no previous studies on stalking have explored the correlations between confidence in the police and trusting people and stalking victimization. Our results therefore have broken the new ground for the study of stalking.

The model of comorbidity is supported by the data in the present study too. Cannabis use, cyberbullying victimization and total victimization are associated with an increased risk of being stalking victims, consistent with the previous findings (Fisher et al., 2002; Nobles et al., 2018; Reyns et al., 2016; Reyns and Scherer, 2018). The weak effect of the cannabis use warrants further examination. At the time of the survey, cannabis use was illegal and its use has been legalized since July 1, 2019 in Canada. What is interesting is the effect of mental health on stalking victimization. Previous studies allude a positive association (Johnson and Thompson, 2016; McEwan et al., 2017; Noble et al., 2018) while we have found a negative correlation. That is, in the present study, those who self-rate themselves better in mental health condition are less likely to be a stalking victim. It is possible that we measure the general self-rated mental health while the other studies have more specific measures of victims’ mental and psychological traits. For examples, Nobles et al. (2018) used a measure of PTSD, and Johnson and Thompson (2016) and McEwan et al. (2017) used the measure of personality disorder traits, both of which are more accurate diagnose of the symptoms of mental health. It is also possible that the negative correlation reveals a consequence of being stalked. That is, those who happen to encounter a stalker are more likely to suffer from various mental health issues than those who do not have such encounters in their life. Here the correlation model shows its superiority by not specifying the direction of the relationship. Only longitudinal data could settle on the issue of causal sequence.

Finally, although there is a substantial proportion of older people and males among stalking victims (also see Meloy and Boyd, 2003; Stalking in Canada, 2014, 2018), the present study found that stalking victims are more likely to be young individuals, and female Canadians are statistically more likely to be stalked. Both findings are consistent with the previous research (Ngo and Paternoster, 2016; Tjaden and Thoennes, 1998). The variables of education and visible minorities are not statistically significantly related to being stalking victimization, a finding that is consistent with prior research (Reyns et al., 2016).

There are several limitations in the present study that warrant discussion. First, our measure of stalking victims includes both victims of stalking and vicarious victims of stalking. The behavior is subjective and it may and may not meet the legal definition of stalking, i.e., criminal harassment (Criminal Code, 1985). Second, we only measure stalking victims while it may also be interesting in capturing the persistence of stalking. Third, the time spans of some variables are not consistent. Stalking is measured in five years while many of its correlates have shorter spans in time. This may have produced two effects for this study: the weaker correlations and possible un-matched correlations. Fourth, our test of social support is partial and the variables used are broadly interpreted as social support theory, which is an open and evolving theory (Lilley et al., 2007). Other important theoretical insight, such as self-control theory, is not controlled for. Future studies need to pay attention to these issues and overcome the limitations when adequate sources of data become available to researchers to draw more solid conclusions. In addition, closer attention should be paid to cyber-stalking, which may have greatly increased due to the sustained quarantine during Covid-19 pandemic in the first half year of 2020. It would be empirically interesting and theoretically important to see whether correlates of stalking victimization from social support theory and comorbidity found in this study are similar or dissimilar when they apply to cyber-stalking victimization.

In sum, this study has advanced the limited knowledge about the correlates associated with stalking victimization in Canada. Our integrated approach of understanding stalking victimization has highlighted the critical importance of neighborhood social support networks and health-related behaviors. Social policies that increase the investment in strengthening social supports at levels of individual, family, or community will reduce stalking victimization. These results have added the credence that neighborhood context and individual lifestyles are both important in the study of stalking victimization. Living a healthy social life and actively participating in the neighborhood activities are to correlate with an alleviated risk of becoming a target of stalking. Future studies need to test our results in the US and other societies to assess the generalizability of this approach.

5.1. Notes

1. The variable of income has 16 percent missing data. After replacing the missing values with the mean, the variable was entered into the model and it was not statistically significant. However, it did change the relationship between cannabis use and stalking, rendering the effect of cannabis use insignificant. Since we decided to drop the variable in the final analysis, readers should be careful in interpreting the significant effect of cannabis use. Also omitted in the final model is the insignificant correlate of Indigenous identity which had 21 percent missing values.

2. In the data set, there are a few variables that appear in the previous study. We tested the cross-tabulation between main activities (Mar_110) and stalking victimization, and between the number of hours working each week (WHW_120), or work schedule at the main job (WHW_230) and being stalked. None of the correlations between any of these pairs of relationships are statistically significant. In addition, a detailed analysis showed that there is no significant relationship between any of the categories and stalking, such as going to school or looking for work, etc.
