Review of European Studies; Vol. 7, No. 7; 2015
ISSN 1918-7173 E-ISSN 1918-7181
Published by Canadian Center of Science and Education

The Role of Alcohol in Violence: The Individual, Small Group, Community and Cultural Level

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Received: December 22, 2014 Accepted: February 13, 2015 Online Published: May 14, 2015

doi:10.5539/res.v7n7p394 URL: http://dx.doi.org/10.5539/res.v7n7p394

Abstract

The goal of this paper is to review our understanding of the role that alcohol plays in violence. This paper provides a literature review of various theoretical mechanisms and of empirical tests of those theoretical propositions across four different levels of analysis: individual, small group, community, and cultural. Alcohol-violence association is evident in not only the individuals who consume alcohol, but also in the social interactions of those individuals, the communities, and the countries in which those individuals live. Acknowledging the alcohol-violence association at one level, without considering the influence of alcohol on violence at other levels, fails to capture the complex role that alcohol plays in violence. This paper concludes with a summary of critical findings, implications for practice, policy, and research advanced by this theoretical and empirical review, a discussion of limitations in the knowledge, and directions for future research.

Keywords: alcohol, theory, violence

1. Introduction

Several theories from multiple academic disciplines (e.g., epidemiology and public health, psychology and criminology) can explain the association between alcohol and violence. These theories seek to explain the association at the level of analysis that is most relevant to the discipline, such as the individual, small group, community, and cultural level. This isolated type of approach in studying the role of alcohol in violence is, arguably, limited. Acknowledging the alcohol-violence association at simply one particular level, without considering the influence of alcohol on violence at other levels, fails to capture the complex role that alcohol plays in violence.

For example, at the individual level of analysis, pharmacological properties of alcohol may explain the direct relationship between alcohol use and violence in individual behavior (e.g., Pernanen, 1981). However, individual-level theories cannot explain what happens when two or more individuals interact in time and space in the context of alcohol consumption. Instead, the small group level theories are useful in explaining how and why certain contextual, situational, and physical environment factors create an ideal environment out of which the alcohol-violence association emerges. For example, physical environment characteristics of bars (such as crowding or noise) (e.g., Graham, West, & Wells, 2000) may increase the stressful stimuli that can trigger aggressive human behavior. If certain alcohol establishment characteristics are important for explaining the association between alcohol and violence, high concentration of many "risky" alcohol establishments in a neighborhood may be associated with neighborhood level violence. In fact, the distribution of consumption and availability theory (Skog, 1991; Stockwell & Gruenewald, 2001) suggests that high availability of alcohol beverages influences alcohol consumption in a community and creates alcohol-violence association. Lastly, the norms of the community and the larger society shape the communal and societal expectations about drinking culture (Levinson, 1983), drinking patterns (Rossow, 1996), beverage preference, and response to alcohol-related harm that together create different alcohol-violence association across different cultures (Room, 1989). Relevant theoretical and empirical literature was gathered searching major library databases by subject (criminal justice, sociology, public health) and by key words (alcohol, aggression, violence) without any limitation to the years. The resulting literature was further queried for particular terms found to be relevant in the original sources. For example, alcohol myopia model and violence key terms were used to further search for literature. Inclusion criteria included publications available in English language and contained the term alcohol in some combination

with the other two key terms (i.e., aggression, violence).

The first part of the paper expands on propositions advanced by the theoretical literature to explain the alcohol-violence association at the individual, small group, community, and cultural levels. The second part of the paper summarizes empirical literature on the alcohol-violence association at each of these four levels of analysis. This paper concludes with a summary of critical findings, implications of the review for practice, policy, and research, a discussion of limitations in the knowledge, and future directions.

2. Theoretical Literature

2.1 Individual Level

The alcohol-violence association at the individual level is explained by: (1) the direct effect of alcohol; (2) the indirect effect of alcohol, (3) the expectancy effect, and (4) the alcohol myopia. Disinhibition theory is the major theory for the direct effect of alcohol on violence. It argues that "neurophysiological mechanism mediated by blood alcohol disconnects the inhibitory functions of the cerebral cortex on the lower brain centers, which disinhibits aggressive impulses" (Pernanen, 1981). For example, individuals who have consumed alcohol become disinhibited and unable to inhibit socially inappropriate behavior. Second, the indirect effect of alcohol on violence takes into account psychological, cognitive and physiological changes that result from alcohol consumption, and which may increase the likelihood of aggression (Graham, 1980). For example, alcohol consumption may impair thinking and rational decision making, which influences a drinker's ability to solve problems in a nonviolent manner. The expectancy effect, suggests that the alcohol-violence relationship can also stem from an individual's learning. "Alcohol response" expectations have to do with beliefs about how alcohol affects behavior, while the "response outcome" expectations are beliefs about consequences of a behavior exhibited when intoxicated (Kallmen & Gustafson, 1998; Lang & Sibrel, 1989). For example, when individuals expect that alcohol consumption has some sort of impact on changing personal behavior, they have internalized the "alcohol response" expectation. On the other hand, individuals can also learn the "response outcome" expectation through observation of others. For example, when they observe incidents of violent behavior that follow alcohol consumption, they learn to expect violence as a consequence of alcohol consumption. Lastly, alcohol consumption causes alcohol myopia (Steele & Josephs, 1990; Giancola, Josephs, Parrott, & Duke, 2010). This general theory of alcohol's effect on behavior argues that alcohol consumption creates alcohol *myopia* that restricts attention and thought to the most salient immediate cues in a setting and impairs inhibition of impulses (Steele & Josephs, 1990). This general theory can also be applied to explain alcohol-related aggression, in particular.

The individual-level theories discussed above are not sufficient for explaining alcohol-violence relationship. Most aggression occurs within social interaction and typically involves a sequence of aggressive acts by more than one person (Graham, Leonard, Room, Cameron Wild, Pihl, Bois, & Single, 1998). Likewise, drinking is essentially a social act (Marsh & Fox, 2000). Since human beings are inherently social creatures and most often alcohol consumption and aggression take place within social settings, the explanations of alcohol-violence association at the small group level are in order.

2.2 Small Group Level

The alcohol-violence association at the small group level can be explained by the situational, contextual, and physical environment factors that create the optimal stage within which alcohol-violence relationship could be developed (Felson, 1978; Luckenbill, 1977). In order for violence to occur, several fundamental conditions must be met (Hindelang, Gottfredson, & Garofalo, 1978). First, two or more individuals must have an occasion to interact in time and space. Second, some sort of a precipitating event (Oliver, 1998) or dispute must occur between the victim and the offender, in which the victim is perceived by the offender as an appropriate target for victimization (Hindelang et al., 1978). Third, the offender must be willing and able to threaten or use force in order to achieve the desired goal of victimization (Hindelang et al., 1978). Lastly, the circumstances of the interaction must be such that the offender views it as advantageous to threaten or use force to achieve the desired goal of victimization (Hindelang et al., 1978). The probability of each of these conditions occurring depends on the lifestyle of individuals, which is determined by the amount of time they spend in public places, among nonfamily members, and especially at night, and by the level of their interaction with others who have a similar lifestyle and demographic characteristics (Hindelang et al., 1978).

Once the first condition of interaction in time and space has been met, a variety of situational and contextual factors can explain the alcohol-violence association. These include the effects of others in the drinking environment (e.g., staff, patrons, bystanders), and the physical aspects of the drinking environment (Graham & Homel, 2008; Graham, Wells, & West, 1997). The influence of audience is important because both the victim

and the offender engage in a "situated transaction" where they behave in response to each other's actions, as well as the position of the audience (Luckenbill, 1977). The main reason for violence in a "situated transaction" exchanged in alcohol establishments is maintaining a favorable situation identity (i.e., face saving), especially when one of the actors feels insulted (Felson, 1978; Felson & Steadman, 1983), or the presence of either instigators or instigating audience (Oliver, 1998). Additionally, permissive attitude of both patrons and bar owners toward alcohol intoxication and aggression can encourage violent behavior because it signals a lack of social control mechanisms motivated to reduce such behavior (Tomsen, 1997).

The physical characteristics of the drinking environment are equally important for explaining the alcohol-violence association at the small group level. Those include: aggressive/provocative cues (e.g., appearance of the bouncer, or the décor of the setting) (Boyatzis, 1977), frustrating stimuli (e.g., long waits to purchase drinks, crowding, physical layout of the drinking setting) (Pernanen, 1981) and physical stressor or aversive stimuli (e.g., noise, smoke or heat) (Boyatzis, 1977). For example, the frustration-aggression model (Dollar, Doob, Miller, Mower, & Sears, 1939) suggests that alcohol intoxication impairs complex thinking and ability to appropriately respond to frustrating stimuli. If we assume that there is a higher incidence of frustrating stimuli in alcohol use situations (e.g., loud noise in bars, long wait periods), we would expect that the frustrating stimuli could explain the relationship between alcohol and violence, as cues that would not be perceived as frustrating stimuli in a non-alcohol use setting (e.g., physical layout of bars) could be perceived as frustrating stimuli in an alcohol-use setting, resulting in aggression (Pernanen, 1981).

The theoretical explanations for the alcohol-violence association at the small group level suggest that contextual, situational, and physical characteristics can create the conditions in which the association between alcohol and violence may emerge. High concentration of many such drinking environments may result in a greater likelihood of observing alcohol-violence relationship in geographical areas where they are concentrated. In other words, if we assume that bars and bar-like settings have certain characteristics that can encourage alcohol-violence association, any change in the number of bars and bar-like settings with those characteristics may have an impact on the alcohol-violence association. It is to this issue of availability of alcohol premises that we now turn.

2.3 Community Level

At the community level, the alcohol-violence relationship can be explained by the distribution of consumption and availability theory and the community structure theory. According to the first theory, physical availability of alcohol is a key factor that can influence alcohol consumption in a community (Moskowitz, 1989; Stockwell & Gruenewald, 2001). Alcohol availability important because increase in per capita alcohol consumption can predict adverse health and social consequences across communities (Skog, 1991). So, a permanent closing down of alcohol premises in a community would reduce availability of alcohol beverages and may be followed by a decrease in alcohol consumption and alcohol-related harm in a community.

On the other hand, the community structure theory argues that the alcohol-violence association is due to the characteristics of communities in which alcohol availability is concentrated (e.g., communities that experience high poverty and single parent households), or the interaction between the community characteristics and people characteristics who live in those communities (e.g., young males) (Gruenewald & Remer, 2006; Gruenewald, Freisthler, Remer, LaScala, & Treno, 2006). Community structure theory is important because it suggests that socially disorganized communities (Shaw & McKay, 1942) may have insufficient collective efficacy (Sampson, Raudenbush, & Earls, 1997) to organize and have an influence over decisions regarding opening of new alcohol premises in the area. As such, those communities would be more susceptible to differential distribution of violence and alcohol-related harms. Although the distribution of consumption and availability theory and the community structure theory may be useful in predicting the likelihood of observing the alcohol and violence relationship in a community, drinking cultures and societal expectations about drinking and alcohol-related problems may also shape the relationship between alcohol and violence.

2.4 Cultural Level

Societal drinking culture combines different views on drinking, conceptions of alcohol-related problems, and definitions of appropriate responses to such problems (Klingemann, 2001). Two broad types of drinking cultures (dry vs. wet) can explain the alcohol-violence association across different societies. In the "wet" drinking cultures, alcohol consumption is a socially integrated part of everyday life with daily or almost daily consumption of alcohol, most often with meals in the form of wine or beer (Parker, 1993; Room, 1989). In the "dry" drinking cultures, alcohol consumption is not integrated into everyday life and alcohol is often consumed in large quantities on weekends or holidays, most often in the form of spirits (Parker, 1993; Room & Bullock, 2002). In the "dry" drinking cultures, physical availability of alcohol is reduced through legal mechanisms

(Room, 1989) and societal expectations influence alcohol drinking patterns and preferences. The "dry" drinking cultures perceive alcohol consumption as a "time-out" period from socially accepted behavior when social norms and punishments do not apply (Graham et al., 1998). Thus, in "dry" drinking cultures we would expect to find a greater effect of alcohol on violence as alcohol consumption is often blamed for the negative consequences that arise from alcohol intoxication (e.g., people appeal to the fact that they were drunk in order to excuse their belligerent conduct) (Marsh & Fox, 2000). Explicit social rules about behavior in intoxicated conditions determine socially approved behavior (Kallmen & Gustafson, 1998) and reflect the broader social norms about the intoxicated condition. Social norms also vary in terms of the hypothetical drinker or drinking situation, with the expectation that aggression is more likely to occur when the drinker is male (Isaacs, 1977), if the beverage consumed is in form of spirits rather than wine or beer (Klein & Pittman, 1990), and especially in the course of heavy (i.e., binge) drinking.

To summarize, there are several explanations at each of the levels of analysis (i.e., individual level, small group level, community level and cultural level) that can explain the potential for alcohol-violence association. Against this backdrop, the following section provides a review of the empirical literature on the alcohol-violence association at each of these four levels of analysis.

3. Empirical Literature

3.1 Individual Level

Empirical evidence of an individual level association between alcohol and violence is widespread (Parker & Auerhahn, 1998), and includes assessments of the direct effect of alcohol on disinhibition (e.g., Chermack & Taylor, 1995; Gustafson, 1985; Kallmen & Gustafson, 1998; Maldonado, Watkins, & DiLillo, 2014; Rapoza & Baker, 2008), the indirect effect of alcohol on violence (e.g., Bushman, 1997), the learned expectations about alcohol-violence connection (Dermen & George, 1989; Ellis, Zucker, & Fitzgerald, 1997; Giancola & Zeichner, 1995; Gustafson, 1985), and the alcohol myopia (e.g., Giancola & Corman, 2007; Philips & Giancola, 2008).

Empirical findings on the direct effect of alcohol on disinhibiting behavior suggest limited support for the direct effect hypothesis (Bushman & Cooper, 1990). For example, the effect of alcohol on disinhibition is contradictory to the disinhibition hypothesis (Bushman & Cooper, 1990; Kallmen & Gustafson, 1998), suggesting that alcohol consumption does not always lead to aggression and violence. Instead, individual propensity toward alcohol-related violence may explain why some individuals and not others become violent after drinking. For example, heavy drinkers have increased risk for mutual intimate partner violence relative to abstainers (Cunradi, 2007). Coker et al. (2002) found that reporting intimate partner violence by both genders was associated with partner's use of alcohol and with self-reported heavy alcohol use. Waller and colleagues confirmed that frequent heavy female and frequent heavy male drinkers are at a greater risk for experiencing intimate partner violence relative to abstainers (Waller, Iritani, Crist, Clark, Moracco, Halpern, & Flewelling, 2012; Waller, Iritani, Flewelling, Christ, Halpern, & Moracco, 2012). Findings of experimental studies suggest that highly intoxicated individuals with high and moderate aggressive tendencies tend to become more aggressive at a faster rate, as a function of the opponent's provocation, relative to the highly intoxicated individuals with low aggressive tendencies (Bailey & Taylor, 1991). In addition, drinking history of an individual is another individual difference variable useful in explaining the relationship between alcohol and aggression (Giancola, 2002). For example, Male-on-Female partner violence was especially higher among males who reported drinking five or more drinks per occasion at least once per week, relative to males who reported abstaining from drinking (Caetano, Schafer, & Cunradi, 2001). Lastly, individual level characteristics such as trait anger, childhood abuse history, and alcohol-related disinhibition mutually interact in resulting aggressive tendencies (Maldonado, Watkins, & DiLillo, 2014).

Second, the empirical findings on the indirect effect of alcohol on violence suggest that alcohol consumption indirectly causes violence (Bushman, 1997). It does so by producing individual-level cognitive, emotional, and physiological changes that increase the probability of aggressive response to provocations or frustrations among intoxicated individuals to a much greater degree than in sober individuals (Bushman, 1997). Additionally, individual and environmental risk factors, such as permissive attitudes regarding violence and living in high-crime area, contribute to the association between alcohol consumption and violence (White, Fite, Pardini, Mun, & Loeber, 2013).

Third, the empirical evidence on the effect of alcohol expectancies leading to violence appears to be a little more straightforward. For example, the relationship between drinking habits and frequency of physical aggression was stronger for those individuals who had expectations about alcohol leading to aggression, relative to those who either expected a decrease or no effect on aggression (Dermen & George, 1989). Interestingly, the association

between alcohol expectancy and alcohol-related aggression is found to be significant for husbands but not for wives (Kachadourian, Homish, Quigley, & Leonard, 2012). In addition, being socialized into the drinking expectations and drinking practices in family settings resulted in an informed understanding about a wider range of alcohol beverages at a younger age, earlier development of experience-based beliefs, and more positive expectancies regarding alcohol among children of alcoholics (Ellis et al., 1997). Lastly, individuals who scored high on the belief that intoxication causes aggression were more likely to report that they had behaved aggressively in the episode of aggression (Leonard, Collins, & Quigley, 2003).

When both theories (i.e., direct and expectancy effect) are included in the analysis, the findings of empirical studies appear to be mixed. For example, Gustafson (1985) tested the expectation hypothesis in a controlled study on aggression using a balanced placebo design. He found that aggression was higher among subjects who had been drinking alcohol, although they were instructed that they received a non-alcoholic drink. Gustafson's (1985) study provided no support for the expectation hypothesis, and some support for the direct effect of alcohol. In a more recent study, Chermack and Taylor (1995) examined the effect of alcohol dosage and previous alcohol-aggression expectancies on post-drinking aggression. Using random assignment of subjects in a competitive reaction time task to test pharmacological and expectancy theories, they found support for the higher alcohol dosage (i.e., pharmacological effect) and no support for the expectancy effect (Chermack & Taylor, 1995).

Lastly, the empirical evidence for the alcohol myopia model suggests support for this theory in explaining alcohol-related aggression (e.g., Giancola & Corman, 2007). Giancola and Corman (2007) were among the first to directly examine attention allocation in alcohol-related aggression. They examined whether alcohol increases aggression in persons who are not distracted from a provocative stimulus and suppresses aggression in persons who are distracted from the provocative stimulus, and accounted for the magnitude of the distraction. Distraction included carefully attending to the sequence of computerized tasks, which Giancola and Corman (2007) believed to serve the purpose of utilization of working memory resources. Provocative stimuli included receiving and administering electrical shocks to and from an opponent. They found that aggression was higher among individuals who were intoxicated and who were not distracted from a provocative stimulus, relative to intoxicated individuals who were distracted from a provocative stimulus (Giancola & Corman, 2007). They also found that moderate magnitude of distraction best produced suppressive effect on aggression, while smaller and larger magnitudes of distraction were not as successful in attenuating aggression in intoxicated individuals (Giancola & Corman, 2007). Intoxicated individuals that were exposed to violence-inhibiting cues (e.g., watching videos of peaceful images and listening to soothing music) were less aggressive than those exposed to violence-promoting cues (e.g., watching videos from violent movies and professional sporting violence) (Giancola, Duke, & Ritz, 2011), confirming the important role of the alcohol myopia model in explaining alcohol-violence association.

3.2 Small Group Level

At the small group level, it appears that alcohol selectively disinhibits violence depending on the contextual factors specific to the situation, the actors involved, their relationships to one another, and the impact of bystanders (Parker & Auerhahn, 1998). The contextual factors include specific establishment characteristics, such as (1) internal physical characteristics and atmosphere of the bar (e.g., layout, crowding), (2) organizational factors (e.g., establishment type, beverage promotions, type of entertainment, staff behavior), (3) internal policies (e.g., use of glassware, serving food), (4) patron characteristics (e.g., gender, age, sexual orientation), (5) external characteristics of the bar (e.g., location, density), and (6) beverage choice (e.g., beer, spirits, wine) (Green & Plant, 2007). For example, licensed premises that permit continued service to obviously intoxicated persons appear to be particularly risky settings for violence (Stockwell, Lang, & Rydon, 1993). The role of the contextual factors on violence warrants attention because apparently intoxicated patrons were able to purchase more drinks from bar staff (Gosselt, Van Hoof, Goverde, & De Jong, 2013). On the other hand, a major predictor of physical violence in pubs and clubs was staff intervention with intoxicated patrons and, particularly, the refusal of service (Homel & Clark, 1994). The contextual factors, such as the characteristics of alcohol serving establishments, are important because a permissive attitude toward alcohol-related aggression was present in almost 84% of alcohol-related incidents of aggression (Graham, West, & Wells, 2000).

Alcohol also selectively disinhibits violence depending on the contextual factors specific to the actors involved and their relationships to one another (Parker & Auerhahn, 1998). Alcohol-related incidents of aggression were more likely to occur between young males (younger than 30 years), in public (either bars or social events), on weekends, after midnight, and between three or more people, who were heavy drinkers (Wells & Graham, 2003). Blood alcohol concentration (BAC) of 0.8% or higher, especially as a result of consuming distilled alcohol

beverages (i.e., spirits vs. beer or wine) was associated with aggression (Giancola, 2002), and homicides resulting from alcohol-related altercation are more likely to involve victims and offenders who know each other (Carcach & Conroy, 2001).

Lastly, social pressures and bystanders may also influence the relationship between alcohol and aggression. Intoxicated individuals are more likely than sober individuals to respond to suggestions to behave aggressively, and provocation appears to be a necessary contextual variable in an interpersonal interaction if aggressive behavior is to occur (Giancola, 2002). This finding confirms the idea that the presence of either instigators (i.e., third parties who actively encourage one participant to fight with another participant), or instigating audience (i.e., bystanders who encourage one or both participants in a conflict situation to resort to violence as a means of resolving the dispute) contributed to incidences of violence in bars or bar-like settings (Oliver, 1998). Third party involvement in alcohol-related violence is especially common in serious and harmful situations (Parks, Osgood, Felson, Wells, & Graham, 2013).

3.3 Community Level

Empirical research that examined the relationship between alcohol and violence at the community level measured alcohol availability in terms of alcohol outlet density (e.g., Snowden & Pridemore, 2013a; Snowden & Freiburger, 2015) and also examined how location of alcohol outlets can influence violence. Community-level focus suggests that spatially clustered geographical distribution of alcohol outlets may produce "hot spots" where anything goes within a community. Alcohol outlet density is associated with child abuse and neglect (Freisthler, Needell, & Gruenewald, 2005), drunk-driving (Gruenewald, Johnson, & Treno, 2002), pedestrian injury collision (LaScala, Gerber, & Gruenewald, 2000), assaultive violence rates in urban cities (Pridemore & Grubesic, 2013; Scribner, MacKinnon, & Dwyer, 1995) and in college towns (Snowden & Pridemore, 2013a), violent crime rates in census tracks (Zhu, Gorman, & Horel, 2004), and assault rates (Gruenewald et al., 2006). The relationship between alcohol outlet density and violence was found to exist over time, independent of changes in population and place characteristics (Gruenewald & Remer, 2006), and especially at smaller units of analysis (Speer, Gorman, Labouvie, & Ontkush, 1998) such as census block groups or street segments. Additionally, physical location of alcohol outlets may also be an important predictor of violence. For example, Hartford, Wechsler, and Muthen (2003) found that drinking at off campus bars was associated with disruptive behaviors and victimization. Location of on-premise establishments (e.g., bars, taverns) in a city center was also an important risk factor for violence as 46% of individuals were assaulted in the public houses located in the center of the city or the streets around public houses(Ingemann-Hansen & Brink, 2004). Lastly, community characteristics may also influence alcohol-violence association. For example, concentrations of off-premise alcohol outlets (e.g., liquor stores) were disproportionately found in socioeconomic disadvantaged and residentially unstable communities (Nielsen, Hill, French, & Hernandez, 2010), and the effect of alcohol outlet density on violence was moderated by community organization (Pridemore & Grubesic, 2012). However, in a non-metropolitan college town, social disorganization had neither a direct nor moderating effect on the association between alcohol outlet density and assaults (Snowden & Pridemore, 2013b).

The findings of the community-level studies suggest that a spatial concentration of alcohol outlets in a community appears to have a negative impact on the community. The alcohol-violence association found at the community level was also found to exist at the cultural level, although due to other reasons.

3.4 Cultural Level

When considering the alcohol-violence association at the cultural level, empirical studies point out to the presence of certain drinking cultures, which produce certain drinking patterns and beverage preferences, as being conducive to violence. The impact of alcohol on violence has been assumed to be stronger in "dry", relative to "wet", drinking cultures because of heavy binge drinking prevalent in the "dry" drinking cultures (Parker, 1993). Population level empirical studies found a significant relationship between heavy alcohol consumption and suicidal behavior, and the strength of the relationship was moderated by drinking cultures (Rossow, Pernanen, & Rehm, 2001). For example, major risk factors for suicidal behavior include heavy drinking (Nemtsov, 2003; Pridemore, 2006; Pridemore & Chamlin, 2006), alcohol abuse, and drinking culture (Rossow, Pernanen, & Rehm, 2001). Additionally, the effect of alcohol on suicide risk was stronger in northern European countries (e.g., Sweden) than in southern European countries (e.g., France), and this variation could be explained by the difference in "dry" drinking cultures of northern Europe, and "wet" drinking cultures of southern Europe (Norström, 1995). Moreover, suicide rates were more responsive to changes in per capita consumption in the countries of northern Europe, relative to the countries of southern Europe, (Ramstedt, 2001). These different drinking cultures have different drinking patterns that can explain the association between drinking cultures and

violence. Examining the effect of the drinking pattern on suicide rate in seven East European countries, Landberg (2008) found that per capita alcohol consumption had an effect on suicide rate, and the effect of alcohol consumption on suicide tended to be stronger in countries with a more hazardous drinking pattern.

Population level empirical evidence on the relationship between alcohol and homicide is similar. For example, Pridemore (2002) found that heavy alcohol consumption is associated with the homicide rate in Russia. Similar to the findings of the role of alcohol in suicide, the impact of alcohol consumption on homicide was highest in the Scandinavian countries, characterized by the "dry" drinking culture, and weakest in Mediterranean countries, characterized by the "wet" drinking culture (Rossow, Pernanen, & Rehm, 2001). In terms of cultural drinking pattern, Bye (2008) found that the alcohol effect on homicide tended to be stronger in East European countries with a more hazardous drinking pattern, where drinking to complete intoxication and recurrent binge drinking (consuming more than five alcohol beverages for males, and more than four for females, during a drinking occasion) is prevalent. East European countries with a more hazardous drinking pattern are also the countries which have a beverage preference for spirits, and where binge drinking is prevalent (Bye, 2008). On the other hand, East European countries with a less hazardous drinking pattern are those that have a beverage preference for beer and wine, rather than spirits (Bye, 2008).

Research that examined the role of beverage preference in the alcohol-violence association suggests that the beverage preference for spirits is an important factor for violence. For example, consumption of distilled spirits (as opposed to consumption of beer or wine) had the strongest effect on mortality due to accidents and injuries, motor-traffic accidents, homicide, and suicide (Gruenewald, Ponicki, & Mitchell, 1995; Norström, 1998; Razvodovsky, 2003). Other studies have also suggested that the reason for alcohol-violence association may be due to the preference for spirits, as in the case of Russia (Pridemore, 2002; Pridemore, 2006).

These empirical studies examined the impact of drinking culture, drinking pattern, and beverage preference on the relationship between alcohol and violence. However, the cultural-level relationship between alcohol and violence can also be mediated by the cultural-level expectations and acceptance of certain alcohol-related behavior. Some cultures view alcohol consumption as a type of "time out" period from socially accepted behavior (Graham et al., 1998). This is important because people were held less accountable when they were intoxicated in almost 65% of all incidents of alcohol-related aggression (Graham, West, & Wells, 2000). These cultural expectations also shape individual attitudes and beliefs that aggression is more likely to occur when the drinker is male (Crawford, 1984; Isaacs, 1977; Giancola & Zeichner, 1995), if the drinker consumed alcohol in the form of spirits (Klein & Pittman, 1990), in the context of high provocation (Giancola & Zeichner, 1995). These cultural expectations and attitudes can give a justification, or an excuse, for a socially irresponsible behavior, such as violence.

4. Conclusion

The goal of this paper is to advance our understanding of the role of alcohol in violence through a review of various theoretical propositions and of empirical tests of those theoretical propositions across four different levels of analysis. From this theoretical and empirical review summary, it appears that violence can be explained by alcohol. The relationship between alcohol and violence starts with the individual, who brings his or her own personal characteristics such as personality, personal expectancies and experiences, and effects of past alcohol use, into a drinking situation. Alcohol consumption affects cognitive functioning, and it produces a range of variability in human behavior. The resulting behavior of the individual is also influenced by the drinking context, such as the norms of the drinking setting and physical stressors. Alternatively, alcohol-violence association appears to also emerge out of high availability of this intoxicating commodity that has negative impacts on community violence rates. Lastly, alcohol-related violence occurs not only out of the pharmacological effect of alcohol on individuals, the social interaction between two or more individuals, and high alcohol availability in communities, but also from the cultural framing of violence and alcohol.

There are several implications of this research review. This research review will be beneficial for practitioners who should remain mindful of the various ways that alcohol can influence and be associated with aggression and violence. Alcohol can be associated with violence not only through the direct, indirect, and myopic effects on behavior, but also through learned expectancies about behavior that follows alcohol consumption. As this review of literature suggests, alcohol availability has an important role in community level violence. One way to reduce violence is to create and implement public policies to reduce alcohol availability in violence-prone areas of communities. This research review will also be beneficial for alcohol researchers. As noted in this review, theories of alcohol-related violence appear to be abundant at the individual-, small-group-, and cultural-levels. However, theoretical explanations for the association between alcohol and violence at the community levels are

less developed. Given the growing body of empirical evidence in multiple disciplines (e.g., public health and epidemiology, criminology) that examines the role of alcohol in community violence rates, clearly specified theoretical mechanisms for such relationship would be useful to further inform this particular area of violence-related research.

This review has two major limitations. First, this review of theoretical and empirical articles is limited to the theoretical and empirical articles that were written in English language and less is known about theories and empirical tests of those theories that are intended for non-English speaking audience. Given that the majority of researchers on violence come from English speaking countries (e.g., Australia, English, Canada, and USA), this limitation may be less problematic. The second limitation has to do with only reviewing theories and empirical studies that explain and assess violence through the lens of alcohol consumption and availability. Certainly, a complex outcome such as violence has a great variety of causes and correlates. Thus, this review provided only one way to explain how and why violence occurs, and in the context of role of alcohol in violence. Other reasons that may lead to violence (i.e., non-alcohol related) are left uninvestigated and beyond the scope of this review. Nonetheless, this study improves our understanding of the role that alcohol plays in violence by considering four different levels at which the association between alcohol and violence exists.

There are several directions for future research. First, alcohol and violence researchers should consider the relationship between alcohol and violence simultaneously at several levels. Multi-level studies that examine the influence of individual drinking habits combined with the environmental characteristics in which individuals live will allow for a nuanced understanding of the role that alcohol plays in violence. For example, future studies could examine the prevalence of blood alcohol positive suicides and delineate how the exposure to alcohol-selling establishments influences and moderates the relationship between alcohol and suicide. Second, while several contextual variables examined at the small group level appear very important for violence, most of these variables have been examined in the settings of bars and little is known whether and how those contextual characteristics contribute to violence in and around liquor or convenience stores (Snowden & Pridemore, 2014), which are used as “de facto” taverns in some areas. For example, future studies could examine environment, business practice, staff, and patron characteristics of liquor establishments to identify which characteristics make liquor establishments particularly risky places for violence. Lastly, the role of alcohol in violence is well established in epidemiological literature. However, violent behavior is also criminal behavior and as such more work in the field of criminology is needed to fully understand how neighborhood characteristics (including alcohol availability) contribute to crime.

A careful and well-rounded understanding of the role that alcohol plays in violence at several levels of analysis is important in consideration of policies that aim to reduce violence. If we know that certain patterns of alcohol consumption, certain bar environments, or the number of bars within a given community are associated with violence, public policies can be implemented to specifically deal with the problematic factors so that alcohol-related problems can be reduced. A comprehensive review of the theories that can explain alcohol-related violence coupled with the empirical evidence of the alcohol-violence association across several levels of analysis can serve as a guiding light for practitioners, policy makers, and researchers interested in reducing violence and other alcohol-related harm.

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