Efforts to simultaneously address adolescent self-regulation, activity space (routine locations), and mental health represent a promising social ecological approach aimed at understanding the lives and development of urban youth. This type of examination of contextual influences on self-regulation is considered an important area of developmental research, yet one that is understudied (McCabe, Cunnington, & Brooks-Gunn, 2004). Little is known about the self-regulatory experiences that might link specific types of locations with mental health problems, particularly with
urban youth who live in areas characterized by chronic and severe stressors such as personal violence, criminal activity, and poverty. Recent research has demonstrated the “power of context” (Tolan, Gorman-Smith, Henry, Chung, & Hunt, 2002) to influence coping styles and has demonstrated that without detailed and specified knowledge of the social ecology of urban youth, measurement of critical variables and interpretation of results are likely to be misinformed (Tolan & Grant, 2009). Given the importance of understanding youth through an interactive and contextual framework (Bronfenbrenner, 1979; Szapocznik & Coatsworth, 1999), the present study examined self-regulatory experiences, specified favorite locations, and mental health with urban adolescents residing in low-resource and high-risk environments. © 2010 Wiley Periodicals, Inc.

SELF-REGULATION

Self-regulation is a complex psychosocial process and refers generally to efforts of a person to alter or maintain his or her responses through such coping processes as self-monitoring, evaluation, control, goal setting, self-reward, and expression of emotion, especially in challenging circumstances (Bandura, 1997; Baumeister & Vohs, 2004; Taylor & Stanton, 2007). This construct has typically been operationalized as an intrapersonal variable, and studied “acontextually,” that is, without a fuller understanding of how efforts at self-regulation are dependent on and vary across the social ecology. Self-regulation is widely identified as critical developmental task for adolescents (Masten et al., 1995), plays an important role in the development and maintenance of positive health behaviors (Bandura, 2005), and therefore is important for adolescent mental health research. Self-regulation can be defined as a psychosocial–environmental process through which adolescents preserve balance between positive and negative emotions and maintain a coherent experience of self (Korpela, 1992; Korpela, Kytä, & Hartig, 2002). For example, relative to attempting to balance emotions self-regulation research has found some individuals’ coping strategies include intentional use of substances to regulate social and affective experiences, through the avoidance of negative affect and the enhancement of positive experience (Cooper, 1994; Hull & Slone, 2004; Hussong, Hicks, Levy, & Curran, 2001; Percy, 2008; Sayette, 2004; Tarter et al., 2003; Weirs et al., 2007). This type of research on dysfunctional self-regulation with urban adolescents is very limited.

Even with these intraindividual factors playing an important role towards understanding substance use, the social and contextual factors also have a significant, but often unexamined function in predicting substance use involvement (Krank, Wall, Stewart, Wiers, & Goldman, 2005; Weirs et al., 2007). Moreover, even when context is part of an investigation, the studies often fail to address the contextual influences with enough detail and thereby overlook the primacy of meaning of place for individuals (Cummins, Curtis, Deiz-Roux, & Macintyre, 2007; Frohlich, Potvin, Chabot, Corin, 2002). A fuller contextual approach suggests that the meaning ascribed to various places is important, and is linked to and expressed through social practices and ultimately to health behaviors. Therefore, without understanding the interpretative meaning of places by individuals, researchers may overlook rich sources of behavioral influence (Cummins et al., 2007; Daykin, 1993; Frohlich et al., 2002; Goodchild & Janelle, 2004; Pavis, Cunningham-Burley, & Amos, 1997; Popay, Williams, Thomas, & Gatrell, 1998).
In an attempt to add a fuller contextual perspective, a small, but growing literature has begun to examine adolescents' environmental strategies of self-regulation, hypothesizing that just as adolescents' relationships with friends and family members represent social strategies of self-regulation, attachment to favorite places represents environmental strategies to self-regulate (Korpela & Hartig, 1996; Korpela et al., 2002; Korpela & Ylén, 2007). This environmental approach towards understanding self-regulatory experiences and mental health is the primary focus of the present study.

This move towards understanding environmental strategies of adolescents provides unique and strong linkages between psychology, place, and health status. These strategies are evidenced through examining adolescents who are self-regulating by selecting and shaping appropriate outer contexts or settings to moderate internal states (Korpela, 2002; Mason & Korpela, 2009; Silbereisen, Eyferth, & Rudinger, 1986). More specifically, these chosen favorite locations can address developmental and coping needs through processes of control, creativity, mastery, privacy, security, personal displays, and serenity (Korpela et al., 2002; Low & Altman, 1992). These healthful outcomes are linked to positive self-regulation, which, in turn, serve as protective factors against mental health problems (Cole, Michel, & O'Donnell Teti, 1994; Eisenberg, Smith, Sadovsky, & Spinrad, 2004; Gross & Munoz, 1995; Kring & Werner, 2004) and against substance use (Hull & Slone, 2004; Percy, 2008; Sayette, 2004; Tarter et al., 2003; Weirs et al., 2007).

**Favorite Place and Health**

Favorite places and the associated psychological processes that accompany these locations can have direct implications for health outcomes. Recent studies have shown that perceptions of particular places influence health and health-related behaviors such as substance use, and are particularly suggestive of causal pathways linking place with health outcomes (Airey, 2003; Popay et al., 2003). Research that examines favorite (important, highly valued) places has focused on participants description, use, and meaning of these locations within their everyday surroundings (Chawla, 1992; Jorgensen, Hitchmough, & Dunnett, 2007; Korpela & Hartig, 1996; Korpela et al., 2002; Korpela & Ylén, 2007; Tyrväinen, Mäkinen, & Schipperijn, 2007). Because adolescents engage in volitional acts through consciously selecting and creating their favorite place, these locations are rich in psychological meaning and value, and are connected to emotional processes such as self-regulation. Favorite places typically have high levels of restorative qualities and have been associated with self-regulatory experiences such as forgetting worries, increasing relaxation and contemplation, increasing positive feelings and reducing negative feelings, and therefore have been linked to self-regulation as an environmental strategy (Korpela & Hartig, 1996; Korpela, Hartig, Kaiser, & Fuhrer, 2001; Korpela, Ylén, Tyrväinen, & Silvennoinen, 2008, p. 637). Therefore, in the present study we examine favorite places and the associated self-regulatory experiences.

**Urban Youth, Coping, and Self-Regulation**

Recent research on the unique stressors that are placed upon urban youth who reside or are active in high-risk settings suggests that patterns of coping such as self-regulation, are dependent upon the types and levels of stress they encounter (Dishion & Connell, 2006; Tolan et al., 2002; Tolan & Grant, 2009). These studies provide support for addressing urban adolescents' self-regulation processes through contextually informed approaches, highlighting that inner cities represent distinct social
ecologies (Fitzpatrick & LaGory, 2000; Tolan et al., 2002; Wilson, 1987). Further, youth that reside in low-resource, high-risk settings that are exposed to chronic environmental stress (violence, crime, poverty) are likely to employ self-regulatory strategies in distinctly different ways compared to youth who are not exposed to these types of settings. For example, research has shown that for youth exposed to chronic and severe environmental stress, the use of protective or positive coping strategies such as personal direct action, problem solving, and distraction, led to worse outcomes such as increased depression, aggression, violence, and mild substance use (Brunswick, Lewis, & Messeri, 1992; Gay et al., 2002; Tolan et al., 2002). Therefore, the need exists to further examine, specify, and differentiate the patterns of contextual influences on self-regulatory experiences and associated mental health status with urban youth living in high-stress environments. The present study seeks to provide foundational knowledge that will have translational implications for the development of contextually relevant preventive interventions through self-regulatory experiences. Based on a contextual–developmental model and our previous work (Mason & Korpela, 2009), the present study sought to answer the following question: Are there patterns of placed-based self-regulatory experiences for urban youth (including type of favorite place and reasons for selection) accounting for gender, age, school problems, mental health, and substance use?

**METHODS**

**Participants**

Table 1 shows that the 301 participants were healthy adolescents between 13–20 years old, with a mean age of 16 years, who attended a routine medical check-up (well-visit

| Table 1. Participant and Neighborhood Characteristics (N = 301) |
|------------------|--------|--------|--------|
| Age              | Count | %      | M      | SD     |
| 13–15            | 105    | 35     |        |        |
| 16–18            | 116    | 39     |        |        |
| 19–20            | 80     | 26     |        |        |
| Sex              |        |        |        |        |
| Male             | 118    | 39     |        |        |
| Female           | 183    | 61     |        |        |
| Race             |        |        |        |        |
| African American | 262    | 87     |        |        |
| Mixed Race       | 24     | 8      |        |        |
| Other            | 15     | 5      |        |        |
| Resident neighborhood characteristics |        |        |        |        |
| Below poverty line | 30  |        |        |        |
| Receiving public assistance | 14     |        |        |        |
| Unemployed       | 8      |        |        |        |
| Substance use involvement |        |        |        |        |
| No substance use | 151    | 50     |        |        |
| Substance use    | 101    | 34     |        |        |
| Abuse or dependency | 49     | 16     |        |        |

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appointment) at a Philadelphia Department of Public Health, health care center. The sample of participating adolescents was 87% African American, 13% self-identified as mixed or other race/ethnicity, and a female majority (60%), which corresponds with other primary care gender distributions (Mason, Cheung, & Walker, 2004). The high African American rate is representative of the urban area served by the health care center. Eligibility requirements for the study included age-eligibility (13–20 years), Philadelphia residence, free from major mental health disturbance as indicated in the mental health section of the medical record (active psychosis would exclude a patient from completing the interviews), literate or fluent in English, clinic patients with parents or legal guardians who are capable of providing informed consent.

**Participant substance use.** The sample was selected via screening questionnaires to comprise youth with a variety of substance use patterns. The final sample included nonsubstance users (never used or had not used in over a year: 50%), substance users (34%), and substance abusers or dependent (16%). Alcohol (50%) and marijuana (37%) were the most reported substances used within the last year by the sample.

**Procedure**

Parents of adolescents under 18 were first approached in the clinic waiting area, then participants themselves were approached. Adolescents 18 and older were approached directly while they waited for their appointments. Written informed consent was obtained from all parents and/or adolescent participants. Nominal incentives were used to acknowledge participants’ time and effort and the study’s consent rate was 90%. Participants completed a comprehensive battery of psychosocial and geographic study measures. Measures were administered in private (i.e., in a separate room from parents to protect patient confidentiality and obtain more valid data) and the procedure generally lasted 45 minutes or less. The first author’s university and the city of Philadelphia Health Department’s institutional review boards approved the research protocol and the study received a federal certificate of confidentiality.

**Measures**

All assessments were conducted by Masters-level mental health counseling graduate student interviewers. All interviewers completed a training protocol that included role-play training, written critiques, and ongoing weekly supervision to ensure the collection of high-quality data with each interview. Individual background characteristics such as age, sex, race/ethnicity, and social economic status of all participants were collected.

**Mental health measure.** Mental health was measured using the Behavior Assessment System for Children (BASC; Reynolds & Kamphaus, 2004), which is a valid and reliable research instrument for assessing child and adolescent behavior. The BASC consists of scales and composites that form two primary categories: clinical maladjustment and positive personal adjustment. Reliability is strong with the BASC having internal consistency scores of composites with alpha coefficients ranging from
the low to mid .90s. The BASC scales correlate very highly \((r = .86)\) with the Youth Self Report (Achenbach, 1991). In the present study, we used the clinical composite School Problems (Cronbach’s alpha = .85), which includes three scales, attitude toward school, attitude toward teachers, and sensation seeking. We also used an adaptive scale, Relations with Parents (Cronbach’s alpha = .81), which measures the adolescents’ perception of the parent–child relationship.

Posttraumatic stress disorder (PTSD) measure. Posttraumatic stress disorder was measured with Primary Care- Post Traumatic Stress Disorder (PC-PTSD) Scale. The PC-PTSD is a four-item screen (Cronbach’s alpha = .93) that was designed for use in primary care and other medical settings. The PC-PTSD has a test-retest Pearson’s correlation coefficient of .83 \((p < .001)\), correlates highly with the Clinician-Administered PTSD Scale (CAPS; Blake et al., 1995) .83 \((p < .001)\), and has an overall diagnostic accuracy of 85% (Prins et al., 2008).

Substance involvement measure. Substance involvement was measured with the Adolescent Alcohol and Drug Involvement Scale (AADIS; Moberg, 1991). The AADIS is a brief measure of the level of alcohol and drug involvement in adolescents for use as a research tool and is highly accurate in differentiating between those who do not have any substance use disorders and those that have at least one (Winters, Botzet, Anderson, Bellehumeur, & Egan, 2001). For the present study, data derived from the AADIS were used categorically [use = 1 and nonuse (never used or no use in the past year) = 0]. The AADIS has favorable internal consistency reliability (Cronbach’s alpha = .94) and correlates highly with self-report measures of substance use \((r = .72)\) and with clinical assessments \((r = .75)\), and with subjects’ perceptions of the severity of their own drug use problem \((r = .79)\).

Activity space measure. Activity space data were captured from the Ecological Interview (Mason et al., 2004), which produces a location-specific listing of the teen’s weekly routine locations, as well as participant evaluations of these various locations. The Ecological Interview is a structured interview that uses the qualitative methodology known as “free listing” (Weller & Romney, 1988). Free listing is a technique that simply asks participants to list and describe all the elements that are part of a particular domain of interest (Trotter, 1995). The Ecological Interview produces accurate and valid geographic data successfully identifying and geocoding 90% of the collected geographic data in previous studies (Mason et al., 2004). Participants are asked which place is the (a) most important; (b) the safest; (c) the riskiest; and (d) their favorite. For the present study, we utilized locations only perceived as favorite. For each location that participants identified as favorite, they responded to the question, “What makes this place your favorite?” All responses were coded into four categories based upon similar research on adolescent place and emotional regulation (Korpela, 1989, 1992; Korpela et al., 2001; Korpela & Ylén, 2007). Categories were social reasons (based on peers, families, others), environmental reasons (based on the setting), psychological reasons (based on internally focused responses such as comfort, calmness, security), and individual activity reasons (based on activities done alone, e.g., running, smoking). Coding procedures followed established coding and standardization procedures with coded data checked for reliability between two research team members’ final codes (Trotter, 1995). Interrater reliability was established using a kappa statistic set at >.81
Coefficient, with project coders reaching a kappa of .85, indicating almost perfect strength of agreement (Landis & Koch, 1977).

Self-regulation measure. As a part of the Ecological Interview, participants are asked about effects of their favorite place on their self-regulatory experiences. Based upon our earlier work on favorite place and emotional regulation (Korpela, 1989, 1992; Korpela et al., 2001; Korpela & Ylén, 2007; Mason & Korpela, 2009), adolescents were asked “What does this favorite place do for you?” and given the following choice of responses: (1) clearing your mind, (2) forgetting demands and pressures, (3) sorting out feelings, (4) comforting, (5) privacy, and (6) relaxing. These items represent core components of effective self-regulation and these procedures follow those widely used and accepted in the emotional regulation field (Eisenberg et al., 2000; Gardner, Dishion, & Connell, 2008; Korpela & Hartig, 1996; Korpela et al., 2001). Participant responses were characterized dichotomously as 0 for no and 1 for yes, as well as continuously, with a summed value representing a total count of self-regulatory experiences. We used the dichotomous variable in this study.

Data Analysis Strategy

In keeping with an exploratory investigation, we employed a two-step cluster analysis procedure to reveal natural groupings (or clusters) within our dataset. Based upon the theories of cumulative risk and protection factors for youth, we selected variables that were capable of illuminating patterns of risk on critical domains of interest for urban youth: school, family, mental health (PTSD), and substance use (Gerard & Buehler, 2004; Hawkins, Catalano, & Miller, 1992; Jessor, Van Den Bos, Vandersyren, Costa, & Turbin, 1995; Ostaszewski & Zimmerman, 2006; Tolan et al., 2002). Although the sample was structured to have 50% substance users, we nevertheless used substance use status as a grouping variable to test the association of key variables of interest with substance use. In particular, we were interested in examining patterns of place-based self-regulatory experiences and the relationship with gender, age, school problems, and mental health. Therefore, we included age, school problems, and relations with parents as continuous variables and PTSD (yes/no), favorite category, self-regulation experiences (yes/no), substance use (user/nonuser) and gender as categorical variables in a two-step cluster analysis using SPSS for Windows 16.0. This procedure handles categorical and continuous variables with automatic selection of number of clusters. In cross-tabulations, place categories “work,” “church,” and “recreation center/sports” were combined to avoid cells with expected frequency less than five.

RESULTS

Classification of Adolescents

Adolescents were clustered using the log-likelihood distance measure. Schwartz’s Bayesian criterion (BIC) was used as the clustering criterion. The number of clusters was determined as part of the analysis procedure (and not predetermined by the authors), resulting in two mutually exclusive groups of adolescents (n = 257). Cluster-wise importance analyses showed that age, school problems, substance use...
classification, self-regulatory experiences, and favorite place category significantly distinguished clusters from each other.

Table 2 shows that cluster 2 is slightly older ($M = 16.9$ years, $SD = 2.2$) and includes relatively more girls ($n = 68; 67\%$) than boys ($n = 33$). Cluster 1 is younger ($M = 15.8$ years, $SD = 2.0$) and includes both girls ($n = 84; 54\%$) and boys, $n = 72$, $\chi^2(1) = 4.6$, $p = .032$, $\phi = .13$. The age difference between the clusters is statistically significant, $t_{(255)} = −3.9$, $p < .001$. Substance users (primarily alcohol and marijuana) are more likely to be included in cluster 2 (61\% vs. 42\%), $\chi^2(1) = 8.9$, $p = .003$, $\phi = .19$. Cluster 2 ($M = 52.1$, $SD = 8.7$) has significantly more school problems than cluster 1 ($M = 48.6$, $SD = 8.8$), $t_{(255)} = −3.1$, $p = .002$. The clusters do not differ in PTSD, $\chi^2(1) = 1.2$, $p = .272$, or in relations with parents scores, $t_{(255)} = 1.171$, $p = .243$. However, it should be noted that the PTSD scores are indicative of severe levels of distress, with nearly half (49.5\%) of the sample screening positive (two of four items) for PTSD symptoms.

**Favorite Places**

The percentages of favorite place categories in Table 3 show that for cluster 2, home or friend’s home are overrepresented among favorite places, $\chi^2(6) = 107.9$, $p < .001$, Cramer’s $V = .65$. In cluster 1, all other favorite places are overrepresented, city places and park/nature in particular.

Differences between the prevalence of self-regulatory experiences were analyzed. Table 4 shows that participants in cluster 2 were more likely to report having all self-regulative experiences in their favorite places than cluster 1 participants. The differences between adolescents’ endorsements of self-regulatory experiences clearly demarcate these clusters, often with very large differences.

Table 5 shows a final chi-square analysis examined clusters by their favorite places and by their self-regulatory experiences simultaneously. We found that cluster classification was not independent from the type of favorite place and the type of self-regulatory experiences of the participants in these locations. All six self-regulatory experiences were tested, but only privacy and comfort were significant. Cluster 1 (less substance use) was more likely to experience privacy in their homes and at city places compared to cluster 2 (more substance use). Cluster 2 was almost twice as likely to experience privacy at their friends home compared to cluster 1, $\chi^2(1, 174) = 33.309$, $p < .0001$. Regarding comforting, cluster 2 was 6 times as likely to experience comfort.
at their home, whereas cluster 1 experienced comfort at their friend’s home more often and was 3 times as likely to experience comfort at city places compared to cluster 2, $\chi^2(1, 174) = 14.557, p < .001$.

Table 3. Favorite Places by Cluster Groups (N = 257)

<table>
<thead>
<tr>
<th>Favorite places</th>
<th>Cluster 1 (Less substance use &amp; school problems)</th>
<th>Cluster 2 (More substance use &amp; school problems)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>Home</td>
<td>5</td>
<td>3.2</td>
</tr>
<tr>
<td>Friend’s home</td>
<td>26</td>
<td>16.7</td>
</tr>
<tr>
<td>City places*</td>
<td>53</td>
<td>34.0</td>
</tr>
<tr>
<td>Work, church, recreation center</td>
<td>15</td>
<td>9.6</td>
</tr>
<tr>
<td>Park / nature</td>
<td>24</td>
<td>15.4</td>
</tr>
<tr>
<td>School</td>
<td>13</td>
<td>8.3</td>
</tr>
<tr>
<td>Other</td>
<td>20</td>
<td>12.8</td>
</tr>
<tr>
<td>Total</td>
<td>156</td>
<td>100</td>
</tr>
</tbody>
</table>

Note. Work, church and recreation center/sports are combined as one category to avoid cells with expected frequency <5. $\chi^2(6) = 107.9; p < .0001$.

*City places served as an omnibus variable for this table and subsumed these locations: city streets, subway stops, city parks, nightclubs, retail, restaurants, and movie theaters.

Table 4. Self-Regulatory Experiences by Cluster Groups (N = 257)

<table>
<thead>
<tr>
<th>Self-regulatory experiences</th>
<th>Cluster 1 (Less substance use &amp; school problems)</th>
<th>Cluster 2 (More substance use &amp; school problems)</th>
<th>$\chi^2(1)$</th>
<th>$\phi$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes Frequency</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Privacy</td>
<td>2</td>
<td>1.3</td>
<td>78</td>
<td>77.2</td>
</tr>
<tr>
<td>Sorting out feelings</td>
<td>14</td>
<td>9.0</td>
<td>68</td>
<td>67.3</td>
</tr>
<tr>
<td>Comforting</td>
<td>67</td>
<td>42.9</td>
<td>86</td>
<td>85.1</td>
</tr>
<tr>
<td>Clearing your mind</td>
<td>85</td>
<td>54.5</td>
<td>92</td>
<td>91.1</td>
</tr>
<tr>
<td>Relaxing</td>
<td>109</td>
<td>69.9</td>
<td>93</td>
<td>92.1</td>
</tr>
<tr>
<td>Forgetting demands and pressures</td>
<td>46</td>
<td>29.5</td>
<td>53</td>
<td>52.5</td>
</tr>
</tbody>
</table>

* $p < .0001$.

Table 5. Cluster Grouping by Favorite Place by Self-Regulatory Experiences (N = 174)

<table>
<thead>
<tr>
<th>Self-regulatory (% Yes)</th>
<th>Cluster 1 (Less substance use &amp; school problems)</th>
<th>Cluster 2 (More substance use &amp; school problems)</th>
<th>$\chi^2$</th>
<th>$\phi$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>64.7</td>
<td>17.6</td>
<td>17.6</td>
<td>58.5</td>
</tr>
<tr>
<td>Friend’s Home</td>
<td>9.3</td>
<td>55.6</td>
<td>35.2</td>
<td>58.5</td>
</tr>
<tr>
<td>City Places</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** $p < .0001$; * $p < .001$.
Reasons for Favorite Places

Participant responses (100%) to the question, “What makes this place your favorite?” were coded into four categories. Nearly one half (49.7%) of the reasons participants gave were coded as social reasons (based on peers, families, others). Almost one quarter (22.7%) of responses were coded as psychological reasons (based on internally focused responses such as comfort, calmness, security). Individual activity reasons (based on activities done alone, e.g., running, smoking) made up 14.3% of the reasons and environmental reasons (based on the setting) made up 13.3% of reasons.

DISCUSSION

This study evaluated patterns of place-specific self-regulatory experiences of urban youth living in high-risk settings and the associated mental health and school problems. A developmental–contextual model provided guidance for this study as well as assisting in interpreting the primary findings that favorite places and self-regulatory experiences cluster in distinctive patterns, underscoring the interaction among ecological levels such as individual and neighborhood. Further, the reasoning provided by participants as to what makes these locations meaningful (social, psychological, and environmental) was also representative of the contextually based approaches posited by the eco-developmental theory. The cluster analyses that produced two distinct groups contribute to the literature on the place-based nature of self-regulatory experiences with an understudied population. A further contribution is the place-based analysis that provides more support for the environmental self-regulation hypothesis, demonstrating the utility of place-specific approaches toward understanding adolescents’ self-regulatory experiences and associated mental health and school problems.

As a general mode of inquiry that has taxonomical capabilities, the cluster analytic approach applied in this study was particularly useful in focusing on patterns of self-regulatory experiences with this urban adolescent sample. The demarcation among the primary variables of interest created two distinct groups within our sample. Cluster 2 was older, had more females, had more school problems, more self-regulatory experiences, was more likely to nominate their home or friend’s home as their favorite place, and used more substances. The results regarding age and school problems are known to be predictive of substance use and so the grouping of these variables was not unanticipated. However, having more females in cluster 2 (more substance use) is unusual and contradicts epidemiological evidence, which generally shows males to use more substances than females, particularly as age increases (Johnston, O’Malley, Bachman, & Schulenberg, 2007). However, this gender gap seems to be closing. Recent gender-focused research has shown that females’ involvement with substances increases at a faster rate than males during early adolescence (Andrews & Tildesley, 2003) with some studies showing that by middle school females’ use of cigarettes, alcohol, and marijuana exceeds that of males (Andrews, 2005), highlighting the need to understand the timing and course of this disorder for young females and to test developmentally and gender appropriate preventive interventions.

When the data were examined by the natural-forming clusters, self-regulatory experiences were found significantly more often and by very large differences for
cluster 2. Coupled with this finding are the different types of favorite places between the clusters, with cluster 2 being 15 times more likely than cluster 1 to nominate their home and twice as likely to nominate their friend’s home as their favorite place. Cluster 2 appeared to be attending to their inner lives much more often within the comfort of their home, yet were continuing to have school problems and to use substances. The results that indicated differences between clusters by favorite place and self-regulatory experiences revealed that cluster 2 (more substance use) was using home as a place of comfort much more often (6 times as likely) compared to cluster 1. This could indicate that cluster 2 adolescents are seeking more comfort as a coping mechanism to deal with their substance use and school problems. That is, this group may be having more problems and are actively attempting to cope with these through engagement with their favorite places. This difference may also be moderated by gender, as more females were in cluster 2, and may have been more inclined to self-regulate at home. This line of reasoning may also explain the differences in cluster 1 using city places for comfort, where males may feel more comfortable in city places compared to females.

The general finding that more self-regulatory experiences are occurring with adolescents who are using more substances and have more school problems is not without precedence. The coping and stress literature supports the notion that inner cities represent distinctive social ecologies for urban youth, which produce markedly different self-regulatory strategies to cope with chronic environmental stressors such as violence, crime, and poverty, compared to youth not exposed to these stressors (Fitzpatrick & LaGory, 2000; Gay et al., 2002; Tolan et al., 2002; Wilson, 1987). Recall that this sample’s elevated level of PTSD symptoms is indicative of individuals living in highly stressful environments, where for example, violence and even murder have become a part of these adolescents’ social ecology. Nearly half of the sample (49.5%) endorsed two out of four PTSD items, with no differences between substance users and nonusers, and no differences found among cluster groups. This extremely high base rate of symptomatology is likely to interact with the adolescents’ need for self-regulatory experiences; therefore, the findings must be interpreted through this unique urban context.

An alternative interpretation is based upon research that has examined substance use experimentation as a mechanism in the development of appropriate self-regulation skills related to substance use in later adulthood (Percy, 2008), handling stress (Silbereisen & Reitzle, 1991), and in peer relations (Engels & Knibbe, 2000), and could indicate that cluster 2 adolescents are linking substance use with self-regulatory experiences. For example, these teens could be using substances in an attempt to increase comfort, sort out feelings, relax, forget demands, and clear one’s mind as self-regulatory experiences within the context of their favorite places. Unfortunately, the question of whether cluster 2 (more substance use) uses their favorite places in ways that involves substance use to self-regulate/medicate is unknown from these data. The results do highlight the importance of further understanding the influence of contextual settings in conjunction with individual outcomes when trying to interpret these findings.

Another explanation is that for cluster 2 their stress associated with school problems leads to self-regulation through comfort and privacy in a location where like-minded peers use substances to cope with multiple life stressors and trauma. In support of this interpretation, we conducted a post hoc analysis and found that substance users reported significantly worse attitudes toward school compared to
nonsubstance users, \( t (301) = -2.261, p < .05 \). This interpretation is in line with current research suggesting that adolescents’ experiences in schools have psychological (emotional regulation, self-control), social (peer affiliation, influence), and environmental (safety or risk of school) qualities that interact with one another (Mayes & Suchman, 2006; Mason & Korpela, 2009). More study of the psychosocial–environmental interactions is needed to better understand self-regulatory experiences of urban youth. What could not be determined from the cross-sectional analyses was the timing of these behaviors. For example, cluster 2 could be having more self-regulatory experiences because of their school problems and substance use, or their substance use is a coping method through which they are attempting to regulate discomfort about their school problems within the privacy of their own homes.

The findings regarding types and rank order of favorite places are similar to other place-based research with urban youth (Mason & Korpela, 2009), with the exception of school not being one of the top three nominated places. Homes, friend’s home, and city places made up the majority of types of locations. Regarding school locations, the majority of the sample was likely to be enrolled in one of two large high schools within the clinic’s catchment area that are labeled by the school district as “persistently dangerous.” Given what is known about the dangerous nature of the high schools in this catchment area, it is not unexpected that schools were not nominated more often. We speculate that safety concerns about violence for example, are disruptive to school climate and the social order, which can negatively influence prosocial associations with peers and institutions, and thus decrease the likelihood of school being selected as a favorite place.

Another finding that is in contrast to previous research is the relatively low ranking of natural settings as favorite. Settings such as parks, forests, and bodies of water have constituted the largest category of favorite places for Finnish, American, Irish, Sengalese, and Estonian students and adolescents (Korpela & Hartig, 1996; Korpela et al., 2001; Newell, 1997; Sommer, 1990). We speculate that the powerful contextual forces of urban crime and violence exert influence into spaces like city parks and city wilderness areas rendering these locations less desirable or restorative. It may also be a function of growing up in an urban setting and having limited positive experiences in natural settings. However, when the nature settings are examined by substance use classification, 15% of cluster 1 (less substance use) nominated park/nature as a favorite place (ranking third), compared to 1% (ranking sixth) of cluster 2 (more substance use). It may be that cluster 1 students have had more positive experiences in these places and have found ways to have self-regulatory experiences within natural settings.

The reasons that the adolescents provided for what makes their selected places their favorite is informative. Participants gave social reasons using phrases such as “my family is there,” “my friends go there,” or “I go there with my girlfriend”; thus, it appears that these locations are their favorite because of who is at these places, rather than where these places are located. The psychological reasons were expressed with words such as “comforting, relaxing, no worries, trust, and fun.” These internal reasons were often paired with social explanations, e.g., “My family is there and so I feel relaxed and calm.” The result is that these locations appear to be perceived as favorite through interactions between the social quality of the setting and one’s psychological response to the social context. This interactive interpretation has unique implications for understanding the self-regulatory experiences for these youth. If self-regulation is a social–psychological process for these adolescents, then these data may help illuminate a unique pathway towards addressing self-regulation and the...
accompanying psychological affects and health behaviors through place-based social strategies and warrants more research in this area.

There are several limitations that should be considered when interpreting the findings from this study. First, our study design was cross-sectional and therefore lacked longitudinal predictive power. In particular, when examining adolescents being able to estimate the duration of these findings across developmental periods would be beneficial. Second, our measure of self-regulation captured outcome experiences—not processes of self-regulation—hence limiting a more nuanced interpretation of these data. Perhaps using more qualitative methods to capture processes of urban adolescent self-regulation could illuminate and extend this research. Third, we were limited to self-reported accounts of self-regulatory experiences, and therefore lacked the multiple perspectives of teachers and parents that could have proved useful. Finally, our assessment, though extensive in many regards, did not capture family measures as thoroughly as possible. We were limited to one scale within a measure that focused on parent relations from the adolescents’ perspective. Clearly, understanding more of the family history and functioning would have added another important dimension to these data.

Despite these limitations, the patterns of these results suggest implications for future research. The cluster of adolescents that had more self-regulatory experiences provides unique insight into the inner lives of urban youth, which could point towards opportunities for place-based interventions. For example, adolescents could be asked to consider how their favorite places and substance use are related, as well as other psychological aspects of self-regulation such as motivation and judgments that are intricately bound with social practices such as substance use (Higgins & Spiegel, 2004; Rothman, Bladwin, & Hertel, 2004). Given the social–spatial nature of these findings, we propose that addressing self-regulation through the construct of personal social networks that are embedded in favorite places could be a relevant and effective approach towards understanding urban youth (Mason et al., in press). For example, by acknowledging and encouraging positive self-regulatory practices by these youth, and addressing substance use through natural mechanisms like social networks that are grounded in familiar settings (favorite places), more meaningful and therefore more effective interventions could be developed and tested. By better understanding urban adolescent coping strategies that are shaped by unique environmental stressors of high-risk and chronic settings, researchers can provide avenues for contextually meaningful preventive interventions. This place-based approach provides encouraging support for investigating the ways in which the social, psychological, and environmental qualities of the lives of urban adolescents are interconnected with health outcomes.

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