The WAGER Vol. 5(44) – When is an Apparent Difference a Significant Difference?

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Lottery players dream about winning. For thirteen workers at a Starbucks coffee house in Los Angeles, California this dream came true eighty-seven million times this past October. However, for one of the thirteen winners the celebration was ephemeral: she was only sixteen years old and ineligible to collect her prize of $6.7 million over the next twenty-six years. But believe it or not, this girl's luck took a turn for the better or the bettor. Her share of the jackpot was awarded and gladly accepted by another member of the pool of thirteen players-her mother.

To some, this story of good fortune might be heart-warming, but to researchers it might reflect an alarming trend. According to Jacobs (2000), nine independent studies conducted in the United States between 1989 and 1999 support the notion that gambling among middle- and high school-aged youths is rising. Indeed, minors in both the United States and Canada have managed to participate in every form of social, illegal, and government sanctioned gambling available to them, including cards, cock fights, and state-sanctioned lotteries (Jacobs, 2000). With regard to the latter, in the first national study on gambling in the United States, Kallick et al. (1976) found that when a state promotes lottery gambling all other forms of gambling increase, regardless of whether these forms are legal or illegal. Jacobs (2000) observed that states listed in Table 1 with a functioning lottery prior to the conduct of the particular survey had a higher rate of juvenile gambling.

Table 1
Studies of Juvenile Gambling in the United States (1989-1999)

Investigator	Year survey completed	N	Gambled for money in past twelve months	Mean age of onset of gambling	State
Kuley & Jacobs	1989	147	58%	12 years	VA[b]
Winters et al.	1990	1,095	52%	11 years	MN
Wallisch	1993	924	66%	12 years	TX
Volberg	1993	1,054	71%	12 years	WA[b]
Shaffer et al.	1994	856	70%	a	MA[b]
Wallisch	1995	3,079	67%	13 years	TX[b]
Volberg	1996	1,007	53%	13 years	GA[b]
Westphal et al.	1998	11,736	86%	11 years	LA[b]
Volberg & Moore	1999	1,000	65%	12 years	WA[b]
	Median level		66%	12 years	

a Not reported.
b Lottery operating at time of study.

Observers of social trends might conclude that the higher prevalence of youthful gambling among residents of the lottery states (67%) represents evidence of meaningfully higher rates in these states compared with the prevalence rates of residents in the non-lottery states (59%). However, statistical analysis reveals that these differences are not statistically significant (e.g., Wilcoxon $W = 6.00$, $p > .242$; Kolmogorov-Smirnov $Z = .713$, $p > .69$). It is easy to think that apparent differences are meaningful differences. This circumstance complicates the task of promulgating meaningful public policy. Nevertheless, a meaningful relationship between state-sanctioned lotteries and juvenile gambling might exist, but the present evidence simply does not support this claim at this time.

There are many reasons why this data might fail to support this claim: for example, there might be insufficient data available to determine that a meaningful relationship between these two factors exists; the rates might vary too greatly to obtain statistical significance; it might be that the influence of the state lotteries on young people is not apparent in the gambling rates alone-other social indicators might be necessary to demonstrate this relationship. Alternatively, there are other considerations that complicate the relationship. For example, perhaps other risk-related expansions over the years (e.g., sex and violence in movies and bungee jumping) have caused the hypothesized rise in juvenile gambling. Further, readers should note that it is not certain that increased gambling rates always are associated with increased rates of disordered gambling. In fact, other research (Shaffer et al., 1999) has shown that the rate of

juvenile problem (level 2) and pathological (level 3) gambling has not increased since Kallick et al. published their findings in 1976.

Arguably the introduction, advertising, and promotion of a lottery might make this form of gambling more attractive to juveniles. As Jacobs (2000) claims, the widespread promotion of a cultural attitude toward wagering (i.e., playing) "acceptance" might be disproportionate among communities with and without a lottery. Indeed, further examination of the relationship between the prevalence of juvenile gambling and state-sanctioned lotteries is warranted since Jacobs' warning about our youth is vital to our collective future. However, many other important factors might be responsible for high rates of juvenile risk taking (e.g., gambling, drug taking, unsafe sex). In states such as Massachusetts and Louisiana, perhaps juvenile gambling rates are the result of regional and local casino gambling opportunities that have energized those of legal gambling age (e.g., parents, relatives, teachers) responsible for those who are not of age but old enough to be interested and influenced. Across America, perhaps the bigger issue with regard to juvenile gambling is not the access children have to certain gambling opportunities like the lottery, but the esteem with which these activities are held within their socializing environment.

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