

Back to the Future: Smoking in Movies in 2002 Compared With 1950 Levels

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We reviewed smoking shown in a random sample of major motion pictures from 1950 through 2002. Smoking incidents declined from 10.7 incidents per hour in 1950 to a minimum of 4.9 in 1980–1982 but increased to 10.9 in 2002. Despite declining tobacco use and increasing public understanding of the dangers of smoking in the real world, smoking in movies has returned to levels observed in 1950, when smoking was nearly twice as prevalent in reality as it was in 2002.

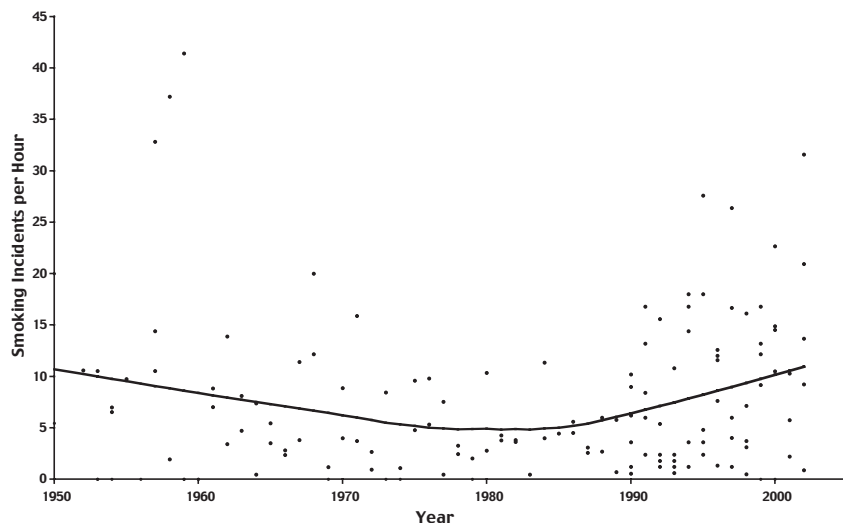
Smoking shown in movies has been linked to increased smoking among teenagers.^{1–4} We have previously published data from 1960 through 2000 that show smoking fell from the 1960s through the 1980s and then increased during the 1990s to levels that exceeded those observed in 1960.^{5–8} In this study, we used similar methods to extend this analysis back to 1950 and forward to 2002.

METHODS

We selected a random sample of 20 of the top-grossing US films released between 1950 and 1959 obtained from the WorldwideBox-Office Internet site⁹ and 5 of the 20 top-grossing films for 2001 and for 2002.⁵ All films were coded by a single coder. In our earlier research,⁵ we validated that coding by a single coder provides accurate results by comparing the results of multiple coders.

RESULTS

Figure 1 presents the number of tobacco incidents (e.g., smoking, the presence of tobacco advertisements, ashtrays) per hour of film time.



Note. The 2 zero values in 1953, 1959, and 1960 are offset slightly so that both points are visible.

FIGURE 1— Smoking incidents per hour in motion pictures, 1950–2001

With the exception of 3 films with essentially continuous smoking (*Jailhouse Rock*, 1957; *A Touch of Evil*, 1958; and *Rio Bravo*, 1959), most of the films had levels of smoking similar to those observed during the 1960s and 1970s. Deleting these 3 outliers from the analysis strengthens the conclusion that by 2002 smoking in movies had returned to historic highs not seen since 1950.

To avoid having to make assumptions about the specific relationship between smoking levels and time, we used SAS PROC LOWESS (SAS Version 9.00, SAS Institute, Cary, NC), a nonparametric method that does not require assuming a specific functional form for the curve, with the bandwidth parameter set to 0.72 (chosen by generalized cross-validation) to fit these data (shown as a solid line in the figure). The fit shows a steady downward trend in smoking levels from 10.7 incidents per hour in 1950 (95% confidence interval [CI]=7.2, 14.2) to a minimum of about 4.9 incidents per hour during the period 1980–1982 (95% CI=2.9, 6.7), when smoking started to increase, with this upward trend accelerating after 1989. By 2002, the number of smoking incidents per hour reached 10.9 (95% CI=8.2, 13.7).

There were no examples of brand identification in the 20 films we reviewed. Sargent et

al.¹⁰ reported that 28% of top-grossing films released between 1988 and 1997 featured specific brands. Had a similar level of brand placement been present during the 1950s, we would have expected to have seen brands in 6 films ($P<.02$ for 0 vs 6 out of 20 by 2-tail Fisher exact test).

The increasing smoking in movies does not reflect reality. From 1950 to 2000, adult smoking prevalence in the United States dropped by half, from 44%^{11(pA9)} to 22.8%.¹² The tobacco industry denied to Congress that it was encouraging smoking in the movies in 1989 and pledged to end paid product placement at that time.¹³ Industry documents reveal that other promotional activities designed to encourage smoking in the movies continued until at least 1993.¹³ Although there is no conclusive proof of current payoffs, the continuing increase in smoking in movies—combined with the industry's history of clandestine support to the people and organizations who make movies—raises the possibility that payoffs are continuing. In terms of effect on the public, particularly youths, it does not matter whether Hollywood is getting paid to put smoking in the movies (in which case they are corrupt) or doing it for free (in which case they are stupid).

DISCUSSION

These data reveal that the assumption that smoking was more widespread in “classic” movies,¹⁴ at least from the 1950s, than it was in subsequent decades is not correct. Despite declining tobacco use and increasing public understanding of the dangers of smoking,¹⁵ in the real world, smoking in movies has returned to levels observed in 1950, when smoking was nearly twice as prevalent in reality as it was in 2000. Particularly with the long shelf life that movies gain through television rebroadcast, videotape, and DVD, the pro-tobacco influence of the high smoking levels in recent movies will continue to be a pro-tobacco influence on teenagers for years to come unless remedial action is taken.¹⁶ ■

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Contributors

S. Glantz conceived the study and wrote the brief. K. Kacirk collected the data. C. McCulloch assisted in the statistical analysis.

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Human Participant Protection

No protocol approval was needed for this study.

References

1. Pechmann C, Shih C-F. *How Smoking in Movies and Anti-Smoking Ads Before Movies May Affect Teenagers' Perceptions of Peers Who Smoke*. Irvine, Calif: Graduate School of Management, University of California, Irvine; 1996.
2. Pechmann C, Shih C. Smoking scenes in movies and antimoking advertisements before movies: effects on youth. *J Marketing*. 1999;63(3):1–13.
3. Distefan J, Gilpin E, Sargent J, Pierce J. Do movie stars encourage adolescents to start smoking? Evidence from California. *Prev Med*. 1999;28:1–11.
4. Sargent J, Dalton M, Beach M, et al. Viewing tobacco use in movies. Does it shape attitudes that mediate adolescent smoking? *Am J Prev Med*. 2002;22:137–145.

5. Hazan A, Lipton H, Glantz S. Popular films do not reflect current tobacco use. *Am J Public Health*. 1994; 84:998–1000.
6. Teti T, Glantz S. Smoking in movies remained high in 1997. *Tob Control*. 1998;7:441–442.
7. Stockwell T, Glantz S. Tobacco use is increasing in popular films. *Tob Control*. 1997;6:282–284.
8. Kacirk K, Glantz S. Smoking in movies in 2001 exceeded rates in the 1960s. *Tob Control*. 2001;10: 397–398.
9. WorldwideBoxOffice. Available at: <http://worldwideboxoffice.com/index.cgi?order=domestic&start=1950&finish=1959>. Accessed February 27, 2002.
10. Sargent J, Tickle J, Beach M, Dalton M, Ahrens M, Heatherton T. Brand appearances in contemporary cinema films and contribution to global marketing of cigarettes. *Lancet*. 2001;357:29–32.
11. *Smoking and Health. A Report of the Surgeon General*. Rockville, Md: Public Health Services, Office of the Assistant Secretary for Health, Office on Smoking and Health; 1979. DHEW publication PHS 79–50066.
12. Cigarette smoking among adults—United States, 2000. *MMWR Morb Mortal Wkly Rpt*. 2002;51(29): 642–645.
13. Mekemson C, Glantz S. How the tobacco industry built its relationship with Hollywood. *Tob Control*. 2002;11:i81–i91.
14. Shields D, Carol J, Balbach E, McGee S. Hollywood on tobacco. *Tob Control*. 1999;8:378–386.
15. *Reducing the Health Consequences of Smoking: 25 Years of Progress. A Report of the Surgeon General*. Rockville, Md: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office of Smoking and Health; 1989.
16. Glantz S. Smoke free movies. 2001. Available at: <http://www.smokefreemovies.ucsf.edu/solution>. Accessed February 4, 2003.