**Supplementary materials**

1. **LIWC categories**

LIWC calculates an overall word count of the text file, four summary language variables (analytical thinking, clout, authenticity, and emotional tone), three general descriptor categories (words per sentence, percent of target words captured by the dictionary, and percent of words in the text that are longer than six letters), 21 standard linguistic dimensions (e.g., personal pronouns, impersonal pronouns, articles, conjunctions, verbs, etc.), 41 word categories tapping psychological constructs (e.g., affect, cognition, biological processes, drives, etc.), six personal concern categories (e.g., work, home, leisure activities, etc.), five informal language markers (assents, fillers, swear words, non-fluencies, netspeak), and 12 punctuation categories (e.g., periods, comma’s, etc.).

1. **Correlation analyses**

We correlated a variety of participant characteristics (i.e., age, education level, prior gaming experience, nicotine dependence, craving levels, motivation to quit, expectations, number of smoking friends, peer environmental smoking), for the brochure group and game group separately, with difference scores of weekly smoking behavior from pre-test to post-test and from pre-test to follow-up, and with intervention dose. In addition, we performed independent sample *t*-tests for sex and all outcome variables for the brochure and game group separately.

* 1. **Additional measures**

**Prior gaming experience.** Prior game experience was assessed at pre-test with the question: “On average, how many hours per week do you play video games?” Participants could respond by typing in a number (up to 2 decimals) representing the number of hours they generally play video games.

**FTND.** The Dutch version of The Fagerström Test for Nicotine Dependence (FTND; Vink, Willemsen, Beem, & Boomsma, 2005) was used to measure nicotine dependence at all measurement moments. The FTND is a 6-item questionnaire, including some items that are answered on a 4-point scale, and other items that are yes (=1) or no (=0) questions. An example item is: “Do you find it difficult to refrain from smoking in places where it is forbidden?”. The FTND showed acceptable reliability in previous research and correlated significantly with number of cigarettes smoked per day in a Dutch sample (Vink et al., 2005). Internal consistency of the FTND items in the present sample was acceptable (pre-test: *n* = 144, *α* =.67; post-test: *n* = 68, *α* =.72; follow-up: *n* = 118, *α* =.64).

**QSU.** The Questionnaire of Smoking Urges (QSU-Brief; Cox, Tiffany, & Christen, 2001; Tiffany & Drobes, 1991) was assessed to measure subjective craving to smoke at all measurement moments. The QSU-Brief consists of ten items answered on a 7-point likert scale ranging from “strongly disagree” (=1) to “strongly agree” (=7). An example item is: “I would do almost anything for a cigarette now?”. The QSU showed good psychometric properties in a Dutch sample (Littel, Franken, & Muris, 2011). Internal consistency of the QSU-Brief items in the present sample was high (pre-test: *n* = 144, *α* =.91; post-test: *n* = 135, *α* =.93; follow-up: *n* = 135, *α* =.94).

**Motivation to quit.** Motivation to quit was assessed at pre-test, post-test and at three month follow-up by the question: “Indicate to what extent you are currently planning to quit smoking”. Participants answered this question on a 5-point scale ranging from 1 (*not at all*) to 5 (*very much*). When participants were abstinent at post-test and/or follow-up they answered the question: “Indicate to what extent you are currently motivated to stay abstinent”.

**Expectations.** Expectations for the effectiveness of each intervention were primed and assessed at pre-test. This was done to rule out participants differing expectations as explanation for potential group differences on outcome measures (Boot, Simons, Stothart, & Stutts, 2013; Crum & Phillips, 2015). Participants were presented with brief descriptions of each intervention highlighting their potential for strengthening control to prime equal expectations. Participants then indicated on a 6-point scale ranging from 1 (*not at all*) to 6 (*very much*) to what extent they thought that the brochure and the game would make them (1) “quit smoking,” (2) “smoke less impulsively,” (3) “have more control over their smoking behavior,” (4) “be more motivated to quit smoking,” and (5) “experience less pressure from your social environment to smoke.” Sum scores were calculated for expectations related to the intervention participants were assigned to.

**Number of smoking friends.** To assess the number of smoking friends we used the question at pre-test: “How many of your friends smoke?” that could be answered on 5-point scale (1 = no one; 5 = five or more friends).

**Peer environmental smoking.** To measure the extent to which participants’ friends smoke in their environment we used the question at pre-test: and “How often do your friends smoke when you are around?” that could be answered on a 4-point scale (1 = sometimes; 4 = very often).

* 1. **Results correlations**

All correlations between our outcome measures and the participants characteristics for the brochure group and game group separately are displayed in Table S1. For the game group only, larger decreases in weekly smoking behavior from pre-test to post-test were associated with higher age, lower education level, higher prior gaming experience, higher baseline nicotine dependence levels, higher exposure to peer smoking, and (borderline significant) higher motivation to quit at baseline. Greater decreases in weekly smoking behavior from pre-test to follow-up were related to a higher age, higher prior game experience, higher baseline nicotine dependence levels, and higher motivation to quit at baseline. A higher game dose was related to higher prior gaming experience, higher baseline nicotine dependence levels, and higher expectations of the game. For the game group, no significant differences between males and females were found on decreases in weekly smoking behavior from pre-test to post-test (*t*(70) = -1.17; *p* = .245), and from pre-test to follow-up (*t*(69) = -1.57; *p* = .120), and dose (*t*(70) = -1.48; *p* = .145).

For the brochure group only, greater decreases in weekly smoking behavior from pre-test to post-test were related to higher prior game experience, higher baseline nicotine dependence levels, and a higher number of smoking friends. Greater decreases in weekly smoking behavior from pre-test to follow-up were associated with higher prior game experience, higher baseline nicotine dependence levels, and (borderline significant) baseline craving levels. A higher brochure dose was related with a lower age, a lower education level, and higher baseline nicotine dependence levels. For the brochure group, an independent samples *t*-test showed a significant difference between the males and females and decreases in smoking behavior from pre-test to post-test, *t*(70) = -2.81; *p* = .006. This indicates that males (*M* = 53.50, *SD* = 45.51) showed a larger decrease in the number of weekly smoked cigarettes than females (*M* = 27.31, *SD* = 31.35). No significant differences were found for sex and decreases in smoking behavior from pre-test to follow-up (*t*(70) = -1.12; *p* = .268), and dose (*t*(59) = -1.82; *p* = .073).

* 1. **Discussion correlation analyses**

We were specifically interested in potential non-specific factors that could have could have led to lower smoking rates irrespective of the intervention group participants were randomized to. In this study, we measured the motivation to quit smoking and the intervention expectations that participants had before the start of the intervention and correlated them with our outcome measures. As can be seen in Table S1, higher motivation to quit was on a trend level related to decreases in weekly smoking rates from pre-test to post-test and follow-up in the game intervention group, and on a trend level related to decreases in weekly smoking rates from pre-test to follow-up in the brochure intervention group. Higher expectations were only related to high intervention dose in the game intervention group.

1. **Additional intervention evaluation analyses**

Evaluations of each intervention were assessed at post-test, with five questions related to the intervention participants were assigned to. Participants responded on a 5-point scale ranging from 1 (*totally disagree*) to 5 (*totally agree*) to the following questions: (1) “I liked to read/play the brochure/game,” (2) “I think that the brochure/game is attractive to others,” (3) “What I learn in the brochure/game I can use in my daily life,” (4) “While I studied/played the brochure/game, I forgot everything around me,” and (5) “I like the fact that the brochure/game is a brochure/game.” We performed five separate independent samples *t*-tests to obtain a more fine-grained overview of the evaluation of both interventions.

Next to the intervention evaluation questions that were asked for both intervention groups, there were three questions only answered by participants in the game group that evaluated specific game features. Participants responded on a 10-point scale ranging from 1 to 10 to the following questions: 1) “Which grade do you give for the look of the game?;” 2) “Which grade do you give for the game experience?;” 3) “Which grade do you give for the game in total?” We performed correlational analyses for the three game grading questions and a difference score of weekly smoking levels from pre-test to post-test and game dose.

**3.1. Results additional intervention evaluation analyses**

The independent samples *t*-tests for the five separate intervention evaluation items showed that participants in the game group rate the game significantly higher, compared to the brochure group, on how attractive they find the game (*t*(128) = -2.82; *p* = .005; *M*game = 3.54, *SD*game = .86; *M*brochure = 3.08, *SD*brochure = .99), and how much they like the fact that the intervention is a game versus a brochure (*t*(127.32) = -3.07; *p* = .003; *M*game = 3.30, *SD*game = 1.26; *M*brochure = 2.69, *SD*brochure = .97). No differences between intervention groups were found for how much participants liked the intervention (*t*(127.85) = -1.60; *p* = .112; *M*game = 3.27, *SD*game = 1.24; *M*brochure = 2.97, *SD*brochure = .92), and how well the game or brochure was able to help participants forget the environment around (*t*(131.78) = -1.43; *p* = .154; *M*game = 2.45, *SD*game = 1.21; *M*brochure = 2.17, *SD*brochure = 1.03). Interestingly, there was one question were an opposite effect was found: participants in the brochure group rated the brochure to be more useful in their daily life, compared to participants in the game group (*t*(132) = 2.65; *p* = .009; *M*game = 2.28, *SD*game = 1.10; *M*brochure = 2.79, *SD*brochure = 1.14).

If we then split our dataset based on group, we looked at correlations between the five separate intervention evaluation items, and a difference score of weekly smoking behavior from pre-test to post-test and a continuous measure of intervention dose (see Table S3). Within the game intervention group, a higher dose of gameplay was associated with higher liking, and higher appreciation of *HitnRun* being a game; there we no significant correlations between the five separate intervention evaluation items and weekly smoking behavior. No significant correlations between the five separate intervention evaluation items and brochure dose or weekly smoking behavior were found.

Finally, when we focused on the game group only, we also had information about how high participants graded the game on looks (*M* = 6.24, *SD* = 1.37), game experience (*M* = 6.30, *SD* = 1.64), and the game in total (*M* = 6.39, *SD* = 1.57), and participants’ subjective experience related to *HitnRun* gameplay. We correlated all these measures with all outcome measures (Table S4). The results showed that participants that gave *HitnRun* higher grades on attractiveness, also reported larger changes in weekly smoking behavior from pre-test to post-test. No significant correlations were found between the game grades and dose of gameplay.

**3.2. Discussion additional intervention evaluation analyses**

Although *HitnRun* was evaluated more positively then the brochure intervention on almost all measures, there was one measure where we found the opposite effect: the brochure group rated the brochure to be more useful in their daily life compared to the game group. While one could interpret this last finding as a lack of transfer to the daily lives of participants, we believe this effect could be driven by the belief of young people that games are inherently fun and therefore not easily linked to a therapeutic or behavioral change context. We have observed this paradoxal usefulness effect more often (Schoneveld, Lichtwarck-Aschoff, & Granic, 2018), and we think that this phenomenon could be used as a ‘trojan horse’ to deliver content in a way that circumvents players’ psychological defenses and that triggers a more receptive mindset (Kaufman & Flanagan, 2015).

Lower-educated young people that smoke are often described as ‘treatment’ resistant: discourses on youth smoking separate youth into those who are able to control themselves and to make responsible decisions, and those who are not – often basing these distinctions on social class (Frohlich, Mykhalovskiy, Poland, Haines‐Saah, & Johnson, 2012). Therefore, common methods used for tobacco control do not necessarily work for this at-risk group. In fact, control-based interventions for individuals with a lower education level often induce feelings of inferiority, resistance, and defense mechanisms as youth feel patronized and not taken seriously (Frohlich et al., 2012; Hill, Amos, Clifford, & Platt, 2014; Lenkens et al., 2019; Scholten & Granic, 2019).

1. **Bayesian statistics**

Due to difficulty interpreting null findings with conventional analyses, additional Bayesian RM-ANOVA’s and one Bayesian Chi-Square test were conducted for all confirmatory analyses using default priors (see Mulder & Wagenmakers, 2016) in JASP (Version 0.9.1; JASP Team, 2018). Again, one participant was excluded from analyses regarding weekly smoking behavior (i.e., outlier), and no participants were excluded from analyses regarding abstinence rates. Bayesian analyses are reported in Table S5a to S9b. Overall Bayes factors indicate substantial support for the reported null findings (BF < 1/3; Dienes, 2014), yet data offer mere anecdotal evidence for or against the inclusion of the inclusion of Time × Dose in the RM-ANOVA on weekly smoking behavior in the brochure group only, and the inclusion of Dose in the RM-ANOVA on weekly smoking behavior in the game group only.

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| Table S1 | | | | | | | | | | | | |
| *Correlations between Intervention Evaluation Variables and Smoking Outcome Variables for Intervention Groups Separately* | | | | | | | | | | | | |
| Measure | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. |
| 1. Difference score weekly smoking pre-test - post-test | 1 | **.66 (<.001)** | **.38 (.001)** | **.32 (.007)** | **-.27 (.021)** | **.24 (.044)** | **.54 (<.001)** | .07 (.425) | .22 (.063) | .13 (.267) | -.04 (.714) | **.38 (.002)** |
| 2.Difference score weekly smoking pre-test – follow-up | **.74 (<.001)** | 1 | .23 (.055) | **.37 (.001)** | -.12 (.336) | **.35 (.003)** | **.42 (<.001)** | -.01 (.921) | .23 (.050) | .03 (.789) | -.05 (.683) | .18 (.164) |
| 3. Dose | .25 (.050) | .19 (.144) | 1 | .15 (.215) | -.15 (.208) | **.39 (.001)** | **.24 (.047)** | .05 (.702) | .02 (.847) | **.25 (.031)** | -.04 (.747) | .10 (.426) |
| 4. Age | -.08 (.529) | -.11 (.358) | **-.27 (.034)** | 1 | .22 (.058) | .08 (.527) | -.03 (.803) | **-.24 (.044)** | **.32 (.007)** | -.06 (.600) | -.21 (.084) | -.21 (.097) |
| 5. Education level | -.21 (.083) | -.20 (.092) | **-.28 (.028)** | **.41 (<.001)** | 1 | -.19 (.116) | **-.44 (<.001)** | **-.36 (.002)** | -.07 (.534) | **-.28 (.017)** | .12 (.325) | -.11 (.378) |
| 6. Prior gaming experience | **.32 (.006)** | **.31 (.008)** | .12 (.352) | -.21 (.073) | **-.24 (.043)** | 1 | **.26 (.029)** | -.02 (.883) | .07 (.565) | .19 (.117) | .07 (.592) | .08 (.512) |
| 7. FTND | **.40 (<.001)** | **.30 (.010)** | **.27 (.034)** | -.09 (.475) | **-.40 (.001)** | .12 (.338) | 1 | **.36 (.002)** | .15 (.218) | **.32 (.007)** | -.03 (.813) | **.38 (.002)** |
| 8. QSU | .20 (.096) | .22 (.068) | .00 (.995) | -.03 (.803) | -.20 (.087) | -.05 (.705) | **.35 (.002)** | 1 | .10 (.417) | .09 (.456) | **-.31 (.008)** | .12 (.347) |
| 9. Motivation to quit | .18 (.128) | .21 (.072) | .02 (.889) | **.33 (.004)** | .12 (.336) | -.03 (.805) | -.03 (.799) | .22 (.064) | 1 | .12 (.337) | -.05 (.685) | -.04 (.756) |
| 10. Expectations | .19 (.103) | .21 (.074) | .14 (.272) | -.12 (.298) | -.22 (.061) | .02 (.858) | .10 (.415) | .02 (.884) | .22 (.067) | 1 | -.07 (.578) | .12 (.341) |
| 11. Number of smoking friends | **.26 (.030)** | .17 (.151) | .21 (.109) | **-.24 (.043)** | **-.28 (.018)** | .07 (.550) | .12 (.298) | .15 (.201) | .14 (.228) | .05 (.662) | 1 | .22 (.079) |
| 12. Peer environmental smoking | .13 (.307) | .18 (.168) | -.10 (.480) | **-.30 (.022)** | -.09 (.498) | -.10 (.468) | .09 (.484) | **.33 (.009)** | .00 (.983) | -.04 (.746) | **.38 (.003)** | 1 |
| *Note.* Numbers above the diagonal represent correlations for the game group only, whereas number below the diagonal represent correlations for the brochure group only.  *p*-values are represented between parentheses for each correlation.  Significant correlations are bolded. | | | | | | | | | | | | |

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| Table S2 | | | | | | | |
| *Means, Standard Errors and p-values of Repeated Measures ANOVA’s* | | | | | | | |
| **RM ANOVA weekly smoking behavior** | | | | | | | |
| **Time** | **Mean** | | **SE** | | | ***p*-value** | |
| Pre-test | 69.90 | | 3.96 | | | Pre-post: <.001 | |
| Post-test | 27.17 | | 3.09 | | | Post-FU: <.001 | |
| Follow-up | 37.18 | | 3.45 | | | Pre-FU: <.001 | |
| **Group** | **Mean** | | **SE** | | | ***p*-value** | |
| Brochure group | 44.83 | | 4.37 | | |  | |
| Game group | 44.67 | | 4.40 | | | 0.979 | |
| **Time\*Group (1)** | | | | | | | |
| **Time** | **Group** | **Mean** | | | **SE** | | ***p*-value** |
| Pre-test | Brochure group | 70.17 | | | 5.58 | |  |
|  | Game group | 69.62 | | | 5.62 | | 0.944 |
| Post-test | Brochure group | 29.04 | | | 4.35 | |  |
|  | Game group | 25.30 | | | 4.38 | | 0.545 |
| Follow-up | Brochure group | 35.28 | | | 4.87 | |  |
|  | Game group | 39.09 | | | 4.90 | | 0.582 |
| **Time\*Group (2)** | | | | | | | |
| **Group** | **Time** | **Mean** | | | **SE** | | ***p*-value** |
| Brochure group | Pre-test | 70.17 | | | 5.58 | | Pre-post: <.001 |
|  | Post-test | 29.04 | | | 4.35 | | Post-FU: 0.190 |
|  | Follow-up | 35.28 | | | 4.87 | | Pre-FU: <.001 |
| Game group | Pre-test | 69.62 | | | 5.62 | | Pre-post: <.001 |
|  | Post-test | 25.30 | | | 4.38 | | Post-FU: <.001 |
|  | Follow-up | 39.09 | | | 4.90 | | Pre-FU: <.001 |
| **RM ANOVA dose-response effect brochure group** | | | | | | | |
| **Time** | **Mean** | | | **SE** | | ***p*-value** | |
| Pre-test | 77.13 | | | 5.85 | | Pre-post: <.001 | |
| Post-test | 25.77 | | | 3.79 | | Post-FU: <.001 | |
| Follow-up | 38.84 | | | 4.32 | | Pre-FU: <.001 | |
| **Dose** | **Mean** | | | **SE** | | ***p*-value** | |
| Low dose | 28.85 | | | 4.26 | |  | |
| High dose | 63.63 | | | 6.34 | | <.001 | |
| **Time\* Dose (1)** | | | | | | | |
| **Time** | **Dose** | **Mean** | | | **SE** | | ***p*-value** |
| Pre-test | Low dose | 53.99 | | | 6.53 | |  |
|  | High dose | 100.26 | | | 9.70 | | <.001 |
| Post-test | Low dose | 13.43 | | | 4.22 | |  |
|  | High dose | 38.11 | | | 6.28 | | 0.002 |
| Follow-up | Low dose | 19.14 | | | 4.83 | |  |
|  | High dose | 52.53 | | | 7.18 | | <.001 |
| **Time\*Dose (2)** | | | | | | | |
| **Dose** | **Time** | **Mean** | | | **SE** | | ***p*-value** |
| Low dose | Pre-test | 53.99 | | | 6.53 | | Pre-post: <.001 |
|  | Post-test | 13.43 | | | 4.22 | | Post-FU: 0.331 |
|  | Follow-up | 19.14 | | | 4.83 | | Pre-FU: <.001 |
| High dose | Pre-test | 100.26 | | | 9.70 | | Pre-post: <.001 |
|  | Post-test | 38.11 | | | 6.28 | | Post-FU: 0.024 |
|  | Follow-up | 52.53 | | | 7.18 | | Pre-FU: <.001 |
| **RM ANOVA dose-response effect game group** | | | | | | | |
| **Time** | **Mean** | | | **SE** | | ***p*-value** | |
| Pre-test | 69.60 | | | 5.82 | | Pre-post: <.001 | |
| Post-test | 24.90 | | | 4.17 | | Post-FU: <.001 | |
| Follow-up | 38.80 | | | 5.03 | | Pre-FU: <.001 | |
| **Dose** | **Mean** | | | **SE** | | ***p*-value** | |
| Low dose | 50.00 | | | 6.36 | |  | |
| High dose | 38.86 | | | 6.63 | | 0.230 | |
| **Time \* Dose (1)** | | | | | | | |
| **Time** | **Dose** | **Mean** | | | **SE** | | ***p*-value** |
| Pre-test | Low dose | 70.05 | | | 8.05 | |  |
|  | High dose | 69.15 | | | 8.40 | | 0.938 |
| Post-test | Low dose | 34.30 | | | 5.77 | |  |
|  | High dose | 15.50 | | | 6.02 | | 0.027 |
| Follow-up | Low dose | 45.65 | | | 6.96 | |  |
|  | High dose | 31.94 | | | 7.26 | | 0.177 |
| **Time \* Dose (2)** | | | | | | | |
| **Dose** | **Time** | **Mean** | | | **SE** | | ***p*-value** |
| Low dose | Pre-test | 70.05 | | | 8.05 | | Pre-post: <.001 |
|  | Post-test | 34.30 | | | 5.77 | | Post-FU: 0.039 |
|  | Follow-up | 45.65 | | | 6.96 | | Pre-FU: <.001 |
| High dose | Pre-test | 69.15 | | | 8.40 | | Pre-post: <.001 |
|  | Post-test | 15.50 | | | 6.02 | | Post-FU: 0.002 |
|  | Follow-up | 31.94 | | | 7.26 | | Pre-FU: <.001 |
| **RM ANOVA Hangouts word count and weekly smoking behavior** | | | | | | | |
| **Time** | **Mean** | | | **SE** | | ***p*-value** | |
| Pre-test | 71.08 | | | 5.91 | |  | |
| Post-test | 25.44 | | | 4.22 | | <.001 | |
| **Word count** | **Mean** | | | **SE** | | ***p*-value** | |
| Low word count | 49.26 | | | 6.70 | |  | |
| High word count | 47.26 | | | 6.70 | | 0.833 | |
| **Time \* Word count (1)** | | | | | | | |
| **Time** | **Word count** | **Mean** | | | **SE** | | ***p*-value** |
| Pre-test | Low word count | 68.53 | | | 8.36 | |  |
|  | High word count | 73.64 | | | 8.36 | | 0.667 |
| Post-test | Low word count | 30.00 | | | 5.97 | |  |
|  | High word count | 20.89 | | | 5.97 | | 0.284 |
| **Time \* Word count (2)** | | | | | | | |
| **Word count** | **Time** | **Mean** | | | **SE** | | ***p*-value** |
| Low word count | Pre-test | 68.53 | | | 8.36 | |  |
|  | Post-test | 30.00 | | | 5.97 | | <.001 |
| High word count | Pre-test | 73.64 | | | 8.36 | |  |
|  | Post-test | 20.89 | | | 5.97 | | <.001 |
| **RM ANOVA Hangouts emotional tone and weekly smoking behavior** | | | | | | | |
| **Time** | **Mean** | | | **SE** | | ***p*-value** | |
| Pre-test | 73.89 | | | 7.72 | |  | |
| Post-test | 25.67 | | | 5.15 | | <.001 | |
| **Emotional tone** | **Mean** | | | **SE** | | ***p*-value** | |
| Negative emotional tone | 52.08 | | | 7.65 | |  | |
| Positive emotional tone | 47.48 | | | 8.84 | | 0.696 | |
| **Time \* Emotional tone (1)** | | | | | | | |
| **Time** | **Emotional tone** | **Mean** | | | **SE** | | ***p*-value** |
| Pre-test | Negative emotional tone | 72.81 | | | 9.46 | |  |
|  | Positive emotional tone | 74.96 | | | 10.92 | | 0.882 |
| Post-test | Negative emotional tone | 31.34 | | | 6.75 | |  |
|  | Positive emotional tone | 20.00 | | | 7.79 | | 0.276 |
| **Time \* Emotional tone (2)** | | | | | | | |
| **Emotional tone** | **Time** | **Mean** | | | **SE** | | ***p*-value** |
| Negative emotional tone | Pre-test | 72.81 | | | 9.46 | |  |
|  | Post-test | 31.34 | | | 6.75 | | <.001 |
| Positive emotional tone | Pre-test | 74.96 | | | 10.92 | |  |
|  | Post-test | 20.00 | | | 7.79 | | <.001 |

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| Table S3 | | | | | | | |
| *Correlations between Intervention Evaluation Variables and Outcome Variables* | | | | | | | |
| Measure | 1. | 2. | 3. | 4. | 5. | 6. | 7. |
| 1. Difference score weekly smoking pre-test - post-test | 1 | **.38 (.001)** | .18 (.125) | .09 (.483) | .18 (.131) | .16 (.194) | .11 (.353) |
| 2. Dose | .25 (.050) | 1 | **.26 (.028)** | .14 (.246) | .20 (.101) | .17 (.159) | **.24 (.042)** |
| 3. Liking | .20 (.110) | .23 (.069) | 1 | **.47 (<.001)** | **.55 (<.001** | **.51 (<.001)** | **.73 (<.001)** |
| 4. Attractiveness | .11 (.397) | .17 (.204) | **.48 (<.001)** | 1 | **.44 (<.001)** | .22 (.076) | **.41 (.001)** |
| 5. Useful daily life | .08 (.559) | .05 (.686) | **.41 (.001)** | **.55 (<.001)** | 1 | .38 (.001) | **.52 (<.001)** |
| 6. Distraction | .02 (.884) | -.06 (.673) | .20 (.125) | **.37 (.003)** | **.43 (<.001)** | 1 | **.44 (<.001)** |
| 7. Game/Brochure | .07 (.620) | -.00 (.981) | **.48 (<.001)** | **.33 (.010)** | **.49 (<.001)** | .14 (.289) | 1 |
| *Note.* Numbers above the diagonal represent correlations for the game group only, whereas number below the diagonal represent correlations for the brochure group only.  *n* intervention evaluation brochure = 59 (9 due to missing data; 4 due to outliers); *n* intervention evaluation game = 67 (1 due to missing data; 4 due to outliers).  *p*-values are represented between parentheses for each correlation.  Significant correlations are bolded.  Liking = “I liked to read/play the brochure/game”; Attractiveness = “I think that the brochure/game is attractive to others”; Useful daily life = “What I learn in the brochure/game I can use in my daily life”; Distraction = “While I studied/played the brochure/game, I forgot everything around me”; Game/Brochure = “I like the fact that the brochure/game is a brochure/game” | | | | | | | |

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| Table S4 | | | | | |
| *Correlations between Game Grade Variables and Outcome Variables* | | | | | |
| Measure | 1. | 2. | 3. | 4. | 5. |
| 1. Difference score weekly smoking pre-test - post-test | 1 |  |  |  |  |
| 2. Dose | **.38 (.001)** | 1 |  |  |  |
| 3. Grade attractiveness game | **.41 (<.001)** | .11 (.363) | 1 |  |  |
| 4.Grade game experience | .13 (.302) | .06 (.640) | **.53 (<.001)** | 1 |  |
| 5.Grade total game | .17 (.163) | .13 (.291) | **.63 (<.001)** | **.84 (<.001)** | 1 |
| *Note.* *n* grade attractiveness = 70 (2 due to missing data); *n* grade experience = 70 (2 due to missing data); *n* grade total game = 69 (2 due to missing data; 1 due to an outlier).  *p*-values are represented between parentheses for each correlation.  Significant correlations are bolded. | | | | | |

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| Table S5a | | | | | |
| *Model comparison of Group × Time Bayesian Repeated Measures ANOVA on weekly smoking behavior (Prior Model Probabilities, Posterior Model Probabilities, BFM , BF01 and estimation error percentage)* | | | | | |
|  | P(M) | P(M|data) | BFM | BF01 | % error |
| Null model (incl. subject) | 0.200 | 5.158e-36 | 2.063e-35 | 1.000 |  |
| Time | 0.200 | 0.779 | 14.064 | 6.624e-36 | 1.201 |
| Group | 0.200 | 1.0417e-36 | 4.165e-36 | 4.953 | 1.291 |
| Time + Group | 0.200 | 0.202 | 1.010 | 2.559e-35 | 1.752 |
| Time + Group + Time × Group | 0.200 | 0.020 | 0.081 | 2.591e-34 | 2.396 |
| *Note.* All models include subject. | | | | | |

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| Table S5b | | | |
| *Model averaging of Group × Time Bayesian Repeated Measures ANOVA on weekly smoking behavior (Prior Inclusion Probabilities, Posterior Inclusion Probabilities, BFInclusion)* | | | |
|  | P(incl) | P(incl|data) | BFInclusion |
| Time | 0.600 | 1.000 | ∞ |
| Group | 0.600 | 0.221 | 0.190 |
| Time × Group | 0.200 | 0.020 | 0.081 |

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| Table S6a | | | |
| *Bayesian contingency table of group on abstinence rates post-test* | | | |
|  | **Abstinence post-test** | |  |
| **Group** | Non-abstinent | Abstinent | Total |
| Brochure | 47 | 25 | 72 |
| Game | 47 | 25 | 72 |
| Total | 94 | 50 | 144 |

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| Table S6b | |
| *Bayesian contingency effect table of group on abstinence rates post-test* | |
|  | Value |
| BF01 independent multinomial | 5.102 |
| *N* | 144 |

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| Table S7a | | | |
| *Bayesian contingency table of group on abstinence rates follow-up* | | | |
|  | **Abstinence follow-up** | |  |
| **Group** | Non-abstinent | Abstinent | Total |
| Brochure | 50 | 22 | 72 |
| Game | 51 | 21 | 72 |
| Total | 101 | 43 | 144 |

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| Table S7b | |
| *Bayesian contingency effect table of group on abstinence rates follow-up* | |
|  | Value |
| BF01 independent multinomial | 5.219 |
| *N* | 144 |

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| Table S8a | | | | | |
| *Model comparison of Dose × Time Bayesian Repeated Measures ANOVA on weekly smoking behavior for brochure group only (Prior Model Probabilities, Posterior Model Probabilities, BFM , BF01 and estimation error percentage)* | | | | | |
|  | P(M) | P(M|data) | BFM | BF01 | % error |
| Null model (incl. subject) | 0.200 | 1.556e-19 | 6.222e-19 | 1.000 |  |
| Time | 0.200 | 0.003 | 0.012 | 5.257e-17 | 0.594 |
| Dose | 0.200 | 2.887e-17 | 1.155e-16 | 0.005 | 1.189 |
| Time + Dose | 0.200 | 0.670 | 8.109 | 2.323e-19 | 1.579 |
| Time + Dose + Time × Dose | 0.200 | 0.327 | 1.947 | 4.752e-19 | 2.988 |
| *Note.* All models include subject. | | | | | |

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| Table S8b | | | |
| *Model comparison of Dose × Time Bayesian Repeated Measures ANOVA on weekly smoking behavior for brochure group only (Prior Inclusion Probabilities, Posterior Inclusion Probabilities, BFInclusion)* | | | |
|  | P(incl) | P(incl|data) | BFInclusion |
| Time | 0.600 | 1.000 | 5.005e+15 |
| Dose | 0.600 | 0.997 | 224.625 |
| Time × Dose | 0.200 | 0.327 | 1.947 |

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| Table S9a | | | | | |
| *Model comparison of Dose × Time Bayesian Repeated Measures ANOVA on weekly smoking behavior for game group only (Prior Model Probabilities, Posterior Model Probabilities, BFM , BF01 and estimation error percentage)* | | | | | |
|  |  | P(M) | P(M|data) | BFM | BF01 | % error |
| Null model (incl. subject) | 0.200 | 6.897e-21 | 2.759e-20 | 1.000 |  |
| Time | 0.200 | 0.423 | 2.936 | 1.629e-20 | 0.580 |
| Dose | 0.200 | 3.592e-21 | 1.437e-20 | 1.920 | 0.617 |
| Time + Dose | 0.200 | 0.273 | 1.500 | 2.528e-20 | 1.168 |
| Time + Dose + Time × Dose | 0.200 | 0.304 | 2.747 | 4.269e-20 | 1.482 |
| *Note.* All models include subject. | | | | | |

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| Table S9b | | | |
| *Model comparison of Dose × Time Bayesian Repeated Measures ANOVA on weekly smoking behavior for game group only (Prior Inclusion Probabilities, Posterior Inclusion Probabilities, BFInclusion)* | | | |
|  | P(incl) | P(incl|data) | BFInclusion |
| Time | 0.600 | 1.000 | ∞ |
| Dose | 0.600 | 0.577 | 0.908 |
| Time × Dose | 0.200 | 0.304 | 2.747 |