Bilaga 4 Tabellverk över inkluderade studier/Characteristics of included studies

Educations

Author **Year** **Country** **Ref nr**	Canale et al 2016 Italy [1]
Study design	Cluster-RCT
Setting	School, 9th grade, 12 school classes, 6 classes/group
Recruitment	Unclear how schools were selected. All students at the school participated.
Population	N=223 students out of 223 eligible Mean (±SD age: 15.01 ± 0.6 years, range 14–18 years Gender: 58% boys Frequent gamblers: n=54 (32%) Gambling problems: n=123 (73.2%) Gambling problems (SOGS-RA) (mean±SD): I: 0.61 ± 0.61, C: 0.56 ± 0.61 9th grade students
Inclusion criteria	No information
Follow up time	2 months
Intervention	Theory-driven web-based intervention (WBI) based on CBT and MI. Feedback messages focused on knowledge, attitudes and individual abilities. The program included three sections: (1) online screening, (2) personalized feedback (PF), and (3) online training (interactive activities). Immediately following the assessment, PF for the respondents was generated on the computer screen. Components of PF: 1. Gambling profile, 2. Consequences of gambling, 3. Tips for safe gambling. Referral information for online training was provided. Following the PF, students were invited to complete online training for three weeks. Participants logged onto the website and were routed to the online activities of the week, which can be completed either immediately or at any other time of the same week. The online activities are designed as a 'question and-answer' game to be played individually. Students were assigned a unique pin number and the URL for participation.
Participants	N=95 at follow up
Drop-out	N=55 in total, no information about number of drop-out/group
Comparison	Only PF based on online assessment
Participant	N=73 students at follow up

Drop-out rate	N=55 in total, no information about number of drop-out/group
Outcome	Gambling behaviour (SOGS-RA) Gambling frequency Gambling expenditure Attitudes (gambling attitudes scale (GAS), Italian version)
Implemented by	NA, On-line
Comments	Some concern regarding missing outcome data

Author **Year** **Country** **Ref nr**	Doiron et al 2007 Canada [2]
Study design	Block-randomisation, not blinded
Setting	Natural environment
Recruitment	Advertisements in local print media and VLT venues.
Population	General population. N=40 out of 65 eligible, 20 in each group Mean (±SD) age: 38 years Gender: 62.5% male Gambling: gambling last month at VLT's Gambling modality: VLT
Inclusion criteria	Participants that played VLT's during the last month and scored as "at-risk" gamblers on the CPGI
Follow up time	1 month
Intervention	The study was carried out in small (5–7 person) groups. Stop & Think! Program, 2 sessions. Participants were oriented to the program and watched a 20-minute automated presentation, providing information on gambling and problem gambling, including a self-assessment for PG. Thereafter (session 1) participants were given manuals consisting of a review of the automated presentation; cognitive restructuring rehearsal using video-taped vignettes; problem-solving rehearsal using a text vignette; and homework assignments involving imaginal cognitive restructuring using an audiotape, and in vivo problem solving. Session 2: homework was reviewed, and questions about the homework were answered. A brief review of the role of problem solving and faulty thinking in the onset and maintenance of PG was provided, including a review of problem solving and cognitive restructuring. A plan for the future was discussed.
Participants	N=20, no statistically significant differences between the groups in relation to gender, age, education, employment, or marital status
Drop-out rate	0
Comparison	No program. The group completed the study separately from experimental group. In session 1, session 2, and the follow-up, they completed the same pre-, post-, and follow-up measures. They

	received an abbreviated version of the Stop & Think! program at the end of the follow-up session.
Participants	N=20
Drop-out rate	0
Outcome	Video Lottery Terminal Screen (VLTS): change in dollars spent in gambling and number of gambling sessions in last month Gambling behaviour (Canadian Problem Gambling Index – 1 Month (CPGI – 1M))
Implemented by	Not applicable
Comments	Small study

Author **Year** **Country** **Ref n**r	Donati et al 2014 Italy [3]
Study design	RCT, block (school)
Setting	2 public high schools
Recruitment	Partly not reported
Population	N=181 high school students out of 181 eligible Mean (±SD) age: 15.95 ± 0.51, range 15–18 years Gender: 64% male Gambling modality: all/not specified
Inclusion criteria	All students who consented or whom parents gave consent
Follow up time	6 months
Intervention	**Training conditions**: Integration of different training techniques for the delivery of the educational contents: activities with random events generators (coins, dice, card decks), Power-Point slides, a video, and collective discussions. Comprised of 2 didactic units of 2 h (one per week) implemented in each class, during the normal school time. **Implementation**: A treatment protocol to act in the training situation to facilitate the achievement of each proposed objective.
Participants	N=145
Drop-out rate	N=26 (17.9%)
Comparison	No Training conditions = no intervention i.e. usual school activity
Participant	N=36
Drop-out rate	N=8 (22%)
Outcome	Gambling behaviour (SOGS-RA) Correct knowledge (questionnaire of attitudes and knowledge about gambling Gamblers fallacy task (GFT) Attitudes/misconceptions (GAS)

Implemented by **Comments**	A developmental psychologist

Author **Year** **Country** **Ref n**r	Lupu et al 2013 Romania [4]
Study design	RCT
Setting	3 6th grade classes
Recruitment	Not reported
Population	N=75 out of 75 eligible Mean (±SD) age: range 12–13 years Gender: 48% male
Inclusion criteria	Be part of the class from the beginning of the school year, age 12–13 years, no previous psychiatric diagnosis, speak fluent English
Follow up time	3, 6, 9, and 12 months
Intervention	**Rational emotive education program:** AC + REE: information using the software designed for elementary school children - "Amazing Chateau" + they were explained the cognitive and behavioural ABC model. **Rational emotive education plus specific primary prevention (REE):** Learn about cognitive and behavioural ABC models. **Both groups**: 10 weekly meetings of 50 minutes with 2 specialists in gambling – a psychologist and a psychiatrist.
Participants	AC + REE n=24, REE n=28
Drop-out rate	0
Comparison	Neither shown the software, nor presented the principles for rational emotive education. Discussions were led so that no topic on gambling to be reached. 10 weekly meetings of 50 minutes each.
Participant	N=23
Drop-out rate	0
Outcome	Knowledge referring to misconceptions, illusion of control and cognitive errors
Implemented by	3 psychology students and the class tutor assisted the intervention activities, meetings held by 2 specialists in gambling – a psychologist and a psychiatrist
Comments	Some concern regarding randomisation and deviations from intended intervention

Author **Year** **Country** **Ref n**r	St-Pierre et al 2017 Canada [5]
Study design **Setting** **Recruitment** **Population** **Inclusion criteria** **Follow up time** **Drop-out rate**	RCT, random number table High school, grade 9–11 All English-speaking schools in the area were asked to participate N=387 students, unclear how many that were eligible, 280 at follow up Mean (±SD) age: 15.11 ± 0.94; range 13–17 years Gender: 50% male Gambling activity past 3 months: 40% Gambling modality: no information Specific grades 3 months 36%
Intervention **Participants** **Drop-out rate**	Prevention video for modifying gambling beliefs, intentions and behaviours based on the theory of planned behaviour (TPB) and the concept of negative anticipated emotions (NAEs). A 25-min prevention video, 1 week later: booster discussion session for 20-25 min. N=141 at follow up Unclear, only the total drop-out is reported
Comparison **Participant** **Drop-out rate**	Control condition: regular academic activities N=139 at follow up Unclear, they only reported the total drop out
Outcome	Gambling Attitudes, intentions Gambling frequency
Implemented by **Comments**	Not applicable Concern regarding missing outcome data

Author **Year** **Country** **Ref n**r	Turner et al 2008 Canada [6]
Study design **Setting** **Recruitment** **Population**	RCT, block (school) High school, grades 10–12 Randomly selected schools in the Simcoe Country District School Board randomly assigned to either the control or experimental group N=201

	Mean (±SD) age: range 15–18 years Gender: 31.4% females Gambling related problem: 83.5% Gambling modality: no information
Inclusion criteria	Not reported
Follow up time	2 months
Intervention	School-based problem gambling prevention curriculum. A curriculum package consisted of a series of lesson plans, overheads, a text and CD-ROM developed for the study, discussion questions, and some other demonstration materials. Each lesson was ≈ 70 min. 6 lessons and a summary lesson over 6-7 weeks.
Participants	N=100
Drop-out rate	0
Comparison	Control condition: regular school activity
Participant	N=101
Drop-out rate	0
Outcome,	Gambling problem knowledge
Implemented by	The teacher
Comments	

Author **Year** **Country** **Ref n**r	Williams et al 2006 Canada [7]
Study design	NRS, prospective
Setting	University
Recruitment	Not reported
Population	N=332 (95% of students registered at these courses) Mean (±SD) age: 20.8 ± 3.6) Gender: 55% female Gambling past 6 months: 71% Gambling activity: lotteries and instant-win tickets (44%), games of skill against other people (34%), gaming machines (29%), casino table games (26%)
Drop-out rate	N=32 (7%)
Inclusion criteria	Not reported
Follow up time	6 months
Intervention	Introduction to Probability and Statistics related to gambling for students from introductory probability and statistic class: 39 lectures (50 min) and 13 labs (50 min).
Participants	N=198

Drop-out rate	Unclear
Comparison	Math control group. Students from introductory probability and statistics class. Ordinary class.
Participants	N=134
Drop-out rate	Unclear
Outcome	Percentage problem gamblers (CPGI) Percentage gamblers Attitudes Time spent gambling Money spent gambling
Implemented by	Names of the persons are given but unclear in what role
Comments	Some concern regarding bias and missing outcome data

Author **Year** **Country** **Ref n**r	Williams et al 2010 USA [8]
Study design	RCT
Setting	14 school, grade 9–12 students, 3 urban centers and 4 rural communities
Recruitment	Partly reported, unclear how the schools were selected
Population	N=1,686 out of 1,686 eligible Mean (±SD) age: 16.0 ± 1.0 Gender: 53% male Problem gamblers (DSM-IV-MR-J): 3.2% Self-reported problem gamblers: 5.2% Gambling once a week: 45% Main gambling modality: betting on games of skill against other people, 56%
Inclusion criteria	Drop out, n (%): 446 (26.5%)
Follow up time	3-7 months (due to summer vacations, average 4 month)
Intervention 1	Stacked Deck program, 5 interactive lesion á 100 minutes
Participants	N=911
Drop-out rate	N=229 (25.1%)
Intervention 2	Booster program- Stacked Deck program, 6 interactive lesion á 100 minutes
Participants	N=342
Drop-out rate	N=85 (21.9%)
Comparison	No program
Participant	N=433

Drop-out rate	N=142 (32.8%)
Outcome	Gambling attitudes Gambling knowledge Gamblers (past 3 months) Gambling frequency Money lost gambling Problem gamblers DSM-IV-MR-J Problem gamblers self-reported (past 12 months)
Implemented by	Teachers
Comments	Issues with randomisation

Personalized normative feedback/ personalized feedback

Author **Year** **Country** **Ref nr**	Auer et al 2015 UK [9]
Study design	Cohort
Setting	Online, real world
Recruitment	Dataset from a commercial online gambling operator
Population	N=1.6 million sessions Mean (±SD) age: no information Gender: no information Gambling: no information Gambling modality: no information
Inclusion criteria	Playing 1,000 consecutive games
Follow up time	After enhanced message was introduced
Intervention	Enhanced pop-up message: Normative and self-appraisal feedback in a slot machine. Pop-up message is triggered if customers play 1,000 consecutive games.
Participants	N=11,878 sessions
Drop-out rate	Not applicable
Comparison	Simple (non-enhanced) pop-up message triggered if customers play 1,000 consecutive games
Participant	N=11,232 sessions
Drop-out rate	Not applicable
Outcome	Ceased or continued to play
Implemented by	Online gambling operator
Comments	Some concern regarding confounding and some concerns with data presentation

Author **Year** **Country** **Ref n**r	Auer et al 2016 UK [10]
Study design	RCT
Setting	Online players, the Norsk Tipping online platform (Instaspill)
Recruitment	Different levels of risk according to Playscan
Population	N=17,442 out of 69,631 eligible Mean (±SD) age: 40.52 ± 13.19 years, 29% <30 years and 22% >50 years Gender: 12,261 males (69.1%) Gambling: no information Gambling modality: online casino,sports, betting, lottery Participants had been playing with Norsk Tipping for an average of 94 ± 38.31 months
Inclusion criteria	Players with a net loss across all games the past month (i.e. winners excluded. Self-excluders were excluded. There was an oversampling of high intensity gamblers.
Follow up time	1 week
Intervention	3 types of message: personalized feedback (PFN), normative feedback, and/or a recommendation. In total 5 groups. **PFN:** A simple personalized message sent to players (Groups 1–4): In addition, players were presented with a line chart containing the monthly values for their personal losses over the previous 6-month period. Players could retrieve the information any time during the following month. **Normative Feedback:** A simple message with normative feedback was sent to players (Groups 3 and 4). The normative feedback about other players' losses was provided after the personalized feedback. Additionally, a line chart displaying their own losses compared with those of other players was also provided. **Recommendation:** Received a helpful recommendation about responsible gambling tools and services that players could access via a hyperlink on the screen (Groups 2, 3, and 5). Players could access tools provided by Norsk Tipping that helped players (i) manage their personal spending limits, (ii) activate a play break, (iii) take a diagnostic self-test about their gambling behavior, and (iv) see an overview of their recent spending. Players were also informed about the national gambling helpline if they wanted to speak to anyone about their gambling
Participants	≈ 2,957 in each group
Drop-out rate	0
Comparison	Received no information (group 6)
Participants	N=2,958

Drop-out rate	0
Outcome	Gambling behaviour: Theoretical loss (TL) Amount of money wagered, Gross gaming revenue (GGR) (i.e., net win/loss)
Implemented by	Norsk Tipping online platform
Comments	Unclear randomisation

Author **Year** **Country** **Ref n**r	Celio et al 2014 USA [11]
Study design	RCT
Setting	College, 2 consecutive semesters, laboratory setting
Recruitment	From introductory psychology courses at a university (recruited between September 2011 and March 2012)
Population	N=144 out of 200 eligible Gender: 55% male Mean age (±SD): 19 ± 1.35, range 18–30 Gambling frequency (self-reported, 11-point scale) mean (±SD): 4.51 ± 2.23, vs. 4.79 ± 2.16 Gambling modality: card gambling, skill games, sports gambling
Inclusion criteria	Undergraduate students, gambled the past 30 days
Follow up time	1 week
Intervention	PFN: Modelled after Brief Alcohol Screening and Intervention of College Students program (BASICS). Including a summary of the participant's perceived descriptive norms regarding gambling frequency, amount of money lost per year, and maximum amount of money lost in 1 day, compared with actual norms from a sample of student gamblers and a summary of the participant's own gambling. they were informed of their percentile rank comparing their gambling with other students' gambling. Actual descriptive norms were generated from data that our laboratory had collected from 284 completed surveys during the previous year. In sum, the feedback communicated the following messages: (1) this is how much you gamble, (2) this is how much you think the "typical student who gambles" gambles, and (3) this is how much the "typical student who gambles" actually gambles.
Participants	N=68
Drop-out rate	Unclear, 8 in total
Comparison	Presented with facts about students at the university. The format mirrored the text-based and graphic content of the PFN, but the information was neither directly related to gambling, nor did it involve personalized content.
Participant	N=68

Drop-out rate	Unclear, 8 in total
Outcome	Self-report Measures Gambling frequency Annual expenditure Maximum single day loss
Implemented by **Comments**	Researcher

Author **Year** **Country** **Ref n**r	Cunningham et al 2012 Canada [12]
Study design	RCT, block randomisation (random number list)
Setting	General population in Canada
Recruitment	Random digit dialling telephone screener of the Ontario population.
Population	N=242 out of 8,015 that spent over $100 on gambling the year before the survey was conducted Mean (±SD) age: 46.6 ± 13.9 years Gender: 52.6% male Gambling (PGSI score), mean(±SD): 7.2 (± 4.8) Gambling modality: no information
Drop-out rate	33 in total, no information about drop-out per group
Inclusion criteria	≥18 years, problem gamblers, moderate problem gambling to gambling dependence as defined, PGSI, interested in self-help materials
Follow up time	3, 6 and 12 months
Intervention	**Intervention 1**: Full PFN. **Intervention 2**: Partial feedback condition. Contained all the feedback information provided full PFN without the normative feedback.
Participants	N=70 in each group
Drop-out rate	Unclear
Comparison	Waiting list. Received the full PFN after completion of the 6-month follow-up.
Participant	N=69
Drop-out rate	Unclear
Outcome	Total dollars spent on betting past 30 days Number of days gambled in past 30 days Largest amount spent on gambling on any day
Implemented by **Comments**	Researcher

Author **Year** **Country** **Ref n**r	Martens et al 2015 USA [13]
Study design	RCT
Setting	College, campus laboratory
Recruitment	Email announcements and the university's mass communication system
Population	N=333 out of 435 eligible Mean (±SD) age: 22 years Gender: 60% male Gambling (SOGS)mean(±SD): 4.77 ± 2.51 Gambling modality: no information
Inclusion criteria	At-risk college student gamblers, reported gambling at least once in the past 60 days or had a score of 3+ on SOGS
Follow up time	3 months
Intervention 1	**Personalized feedback (PFB):** Feedback via a paper printout.
Participants	N=111
Drop-out rate	N=1 (0.9%)
Intervention 2	**Education (EDU):** Reviewed general information about gambling tailored to college students, including: (a) percentage of college students meeting problem or pathological gambling classifications; (b) risk factors for compulsive gambling; and (c) strategies for reducing gambling problems.
Participants	N=113
Drop-out rate	N=3 (2.7%)
Comparison	No information provided, assessment only
Participant	N=109
Drop-out rate	N=2 (1.8%)
Outcome,	Gambling days Dollars risked CPGI scores
Implemented by	Researcher
Comments	Intervention fidelity: to ensure that participants read and retained the information provided in the printouts (PFN and EDU). Participants completed two questions that asked about information included in the intervention printout immediately postintervention.

Author **Year** **Country** **Ref n**r	Neighbors et al 2015 USA [14]
Study design **Setting** **Recruitment** **Population** **Inclusion criteria** **Follow up time**	RCT, URN randomization, stratified by gender and gambling severity (SOGS 4 vs. SOGS 5+) University, laboratory setting A brief online screening survey were sent to 2 cohorts (15,000 student/cohort) N=252 out of 559 eligible Mean (±SD) age: 23.11 ± 5.34 years Gender: 40.5% female Gambling: 2 or higher on SOGS Gambling modality: playing cards 87.3%, lotteries 81.3%, bingo 71.0%, casino gambling 66.9%, slots, poker, or gambling machines 66.7% College student, ≥18 years, score ≥2 on SOGS 3 and 6 months
Intervention **Participants** **Drop-out rate**	PFN: Gender-specific normative feedback, included 4 components: (a) participants' own frequency, expenditure, and time spent gambling; (b) participants' perceptions of other same-sex students' frequency, expenditure, and time spent gambling; (c) actual norms of other same sex students' frequency, expenditure, and time spent gambling; and (d) a percentile ranking of participants' gambling frequency relative to same-sex peers. N=124 3 months: n=11 (8.9%), 6 months: n=12 (9%)
Comparison **Participant** **Drop-out rate**	Attention-control feedback: gender-specific feedback such as the number of hours students spent studying for class, watching TV, and exercising; the amount of money students spent on fast food; the number of students who lived on-campus; the number of students who had a part-time job; and the number of times per day students check Facebook. N=128 3 and 6 months: n=14 (10.9%)
Outcome,	Gambling-related behaviours (SOGS) Gambling frequency Quantity loss/ won Gambling Problems Index (20-item measure).
Implemented by **Comments**	Researcher ITT analysis

Author **Year** **Country** **Ref nr**	Wood et al 2015 Canada [15]
Study design	NRS

Setting	Internet players, online with Svenska Spel (the Swedish gambling operator)
Recruitment	Not reported
Population	N=1,558 out of 65,000 eligible Mean (±SD) age: no information Gender: 89% male Gambling: no information Gambling modality: bingo 7%, lottery 57%, sport betting 54%, poker 15%
Inclusion criteria	Not reported
Follow up time	1 and 24 weeks after enrolment
Intervention	Behavioural feedback (FB) via a responsible gambling tool (Playscan): a proprietary algorithm calculates a risk score based on the intensity of play over a 10-week span. The risk score is sorted into one of 3 colour categories (Green, Yellow, Red) corresponding to the intensity of the gambling behaviour in relation to previously observed playing behaviours. Green light = low intensity engagement, yellow = moderately intense or risky play, red light = very intense engagement or risky play. Where a player played more than one game type, the riskiest category was recorded; this is because the BF tool assesses individual games rather than cumulatively across several games.
Participants	N=779 x 2 (matched pairs)
Drop-out rate	0
Comparison	Matched sample on age, sex, colour (i.e. risk) category at time of the BF player's enrolment, types of games played, the average amount deposited during the 10 weeks prior to the week of enrolment for the BF player, and the average amount wagered during the 10 weeks prior to the week of enrolment for the BF player.
Participants	N=779 x 2 (matched pairs)
Drop-out rate	0
Outcome	Amount deposited Amount wagered
Implemented by	Svenska Spel
Comments	Some concerns about confounding

Pop-up message

Author **Year** **Country** **Ref n**r	Broussard et al 2017 USA [16]
Study design	RCT
Setting	College

Recruitment	From introductory psychology classes and flyers posted on campus
Population	College students N=90, no information about how many eligible Mean (±SD) age: 19.6 years Gender: 50% female Gambling (SOGS): 69% no risk, 30% possible risk, 1% probable pathological gambling Gambling modality Main gambling g modality
Drop out rate	N=4
Inclusion criteria	No information
Follow up time	Instantly after experiment
Intervention	**Digital Slot Machine Accelerator**: Spin × 1 or spin × 50. The accelerator was programmed so that all participants were exposed to an identical sequence of wins and losses. **Educational Handouts:** detailed handout describing probabilities and concepts related to slot machine gambling; Included were two multiple-choice questions to assess participants' understanding of the information provided. Participants who answered questions incorrectly were asked to re-read relevant passages and provide the correct answer or answers before moving on.
Participants	Unclear, n=90 in total
Drop-out rate	Unclear, n=4 in total
Comparison	Control Handouts: Equal length as education handout; discussed visual form, shape, and space. Included were two multiple-choice questions to assess participants' understanding of the information provided. Participants who answered questions incorrectly were asked to re-read relevant passages and provide the correct answer or answers before moving on.
Participant	Unclear, n=90 in total
Drop-out rate	Unclear, n=4 in total
Outcome	Self-Report Measures; Gambling behaviour (SOGS)
Implemented by	Researchers
Comments	Lack of information about how the study was carried out

Author **Year** **Country** **Ref n**r	Floyd et al 2006 USA [17]
Study design	RCT
Setting	Laboratory setting, virtual casino room, computerized roulette game with imaginary money
Recruitment	

Population	Psychology classes at university that had a variety of legal gambling options within a 30-min drive N=122 undergraduate students Mean (±SD) age: 24.6 ± 7.34 years Gender: 42.6% male Number of times gambling last year, mean±SD: 8.38 ± 13.15 Gambling modality: roulette 24.2%, slots 63.3%, card games 57.6%, lottery 45.3%, bingo 41.4%, sports 28.7%, dice 28.7%, horses 15.7%, internet 3.5%
Inclusion criteria	Individuals who had gambled previously and reported understanding English text were eligible to participate
Follow up time	Instantly after experiment
Intervention	Warning-message condition. Before gambling they watched an educational film t about irrational beliefs commonly associated with loss of control while gambling. Periodic warning messages were displayed on the screen. Written at a fourth-grade reading level, each message addressed a different gambling-related irrational belief. The first warning message appeared after the 3rd spin; remaining messages appeared after a randomly determined number of spins, not exceeding six.
Participants	N=61
Drop-out rate	N=1
Comparison	Control condition viewed a film on the history of roulette. No warning messages were displayed during play.
Participants	N=61
Drop-out rate	N=1
Outcome	Money spent Number of spins
Implemented by	Researcher
Comments	Some concern regarding randomization and missing data

Author **Year** **Country** **Ref n**r	Ginley et al 2016 USA [18]
Study design	RCT
Setting	Laboratory setting, slot machine games, soundtrack of casino sounds was played in the background
Recruitment	Public university, participants received course credit as compensation
Population	N=154 undergraduate students, no information about how many eligible Mean (±SD) age: 22.7 ± 7.78 Gender: 60% female (n=92)

	Gambling: 67%, had gambled during the past year: 98%, participants gambled at a social level (SOGS): 1.9% Gambling modality: lottery ticket 44.2%, sports betting 30.5%, games of skill 31.8%
Inclusion criteria	Not reported
Follow up time	1 week
Intervention	The win/loss pattern of the game was set prior to the session: a winning or losing slot machine. Periodic warning messages were displayed on the slot machine screen in the manner of an Internet browser pop-up message. Written at a fourth-grade reading level, each message addressed a different gambling related irrational belief. 2 groups: warning message-win condition, warning message-loss condition. Participants were required to play for at least 20 min in all conditions.
Participants	Winning condition, n=42 Losing condition, n=37
Drop-out rate (n)	Winning condition n=3 Losing condition n=1
Comparison	2 groups: control-win condition, and control-loss condition. Did not receive any pop-up message.
Participants	Winning condition Losing condition
Drop-out	Winning condition n=1 Losing condition n=2
Outcome	Money wagered Total spins Time spent placing bet
Implemented by	Researcher
Comments	Some concern regarding randomisation

Author **Year** **Country** **Ref n**r	Jardin et al 2012 USA [19]
Study design	RCT
Setting	Laboratory setting, Lucky Wheel game
Recruitment	Recruited from the community
Population	N=80, no information about how many eligible Mean (±SD) age: 44 years, range 19–79 years Gender: 75% male Gambling (SOGS): 31% normal range, 19% possible problem gamblers, and 50% probable pathological gamblers Gambling days past month (mean±SD): 14.46 ± 9.97

	Gambling modality: no information
Inclusion criteria	Adult high-frequency gamblers
Follow up time	Instantly after experiment
Intervention	Participants continued playing until they decided to stop or had lost all of their money. The game was programmed in nine seamless phases with set reinforcement probabilities. 3 message groups: **Accurate:** correctly described the prevailing contingencies of a computerized gambling task governed by chance **Inaccurate**: designed to instil an illusion of control by mimicking erroneous beliefs that many gamblers hold **Neutral**: to control for the disrupting effects of messages, a no-message control condition A total of 8 pop-up messages were programmed to appear after every five trials during the first eight phases of the game but were discontinued during extinction in Phase 9.
Participants	N=20
Drop-out, n (%)	0
Comparison	A no-message control condition
Participant	N=20 x 3
Drop-out rate	0
Outcome,	Amount of bet Number of trials Money left
Implemented by	Researcher
Comments	

Author **Year** **Country** **Ref n**r	Rockloff et al 2015 Australia [20]
Study design	RCT, block randomisation, factorial design
Setting	Laboratory setting; laptop simulated EGM created in Visual Basic
Recruitment	Newspaper flyers
Population	N=130 volunteers Mean (±SD) age: no information Gender: 57% male Problem gambling status (PGSI): 55.1% no risk, 21.5% low risk, 18.6% moderate risk, and 4.6 % problem gamblers
Drop out rate	N=23, quit the EGM before reaching the 21st trial

Inclusion criteria **Follow up time**	Not reported Instantly after experiment
Intervention **Participants** **Drop-out rate**	A warning message informing shown on the 21st trial. 2 different messages: "relevant" message on the 21st trial saying that the jackpot had expired and could no longer be won, (2) an "irrelevant" pop-up message that simply said "click OK to continue". Subjects played a 3 reel laptop simulated EGM. The EGM was programmed with a fixed sequence of wins on trials 2, 6, 8, 13, and 20, and infinite losses thereafter. Unclear, n=130 in total Unclear, n=23 in total
Comparison **Participant** **Drop-out rate**	No pop-up message Unclear, n=130 in total Unclear, n=23 in total
Outcome,	Average bet size Speed of betting (bets per minute) Trials played
Implemented by **Comments**	Researcher Some concerns regarding missing data

Author **Year** **Country** **Ref n**r	Steenbergh et al 2004 USA [21]
Study design **Setting** **Recruitment** **Population** **Inclusion criteria** **Follow up time**	RCT Laboratory setting, university Introductory psychology classes N=101, no information about how many eligible Mean (±SD) age: 20.5 ± 4.57 years Gender: 64.4% female Gambling last month: 50% Gambling modality: casino gambling: 32.7%, sports wagering 32.7% Undergraduate students who had gambled ≥1 and could read and understand English Instantly after experiment
Intervention	**Warning condition:** A 22-second computer delivered audio-visual message that explained the odds of winning at roulette and warned viewers of the risks associated with gambling. Then viewed the ten-minute gambling history video. **Warning Plus Brief Intervention (WBI)**: Received the warning message as well as limit-setting and belief-modification components designed to produce incremental effects on gamblers' beliefs and wagering behaviour. All components of the

	intervention were delivered in audio-visual format via a multimedia computer program.
Participants	Warning n=35 WBI n=33
Drop-out rate	0 in both groups
Comparison	Control condition viewed a 10-minute video: descriptive history of gambling growth and opportunity in USA since the colonial period. The video presented a neutral perspective on gambling and did not mention problem gambling, or the benefits or risks associated with gambling
Participants	N=33
Drop-out rate	0
Outcome	Gambling behaviour Time gambling
Implemented by	Researcher
Comments	Some concern regarding randomisation

Pop up message - limits

Author **Year** **Country** **Ref nr**	Kim et al 2014 Canada [22]
Study design	RCT
Setting	Laboratory setting, virtual Reality casino, all spins on EGM pre-determined
Recruitment	Unclear
Population	Non-problem and low-risk EGM gamblers recruited from university N=43, no information about how many eligible Mean (±SD) age: 21.4 ± 6.1 years, range 17–53 years Gender: 39.5% male Gambling: no information Gambling modality: no information
Inclusion criteria	No information
Follow up time	Instantly after experiment
Intervention	Time limit pop-up message condition: Each participate set a time limit on their play (in minutes). They were free to choose any time limit (including setting no limit at all) and could stop gambling at any time, irrespective of the time limit they set. Participants were instructed to indicate their chosen time limit in a text box provided in the pop-up message. Participants were neither reminded when they reached their limit nor led to believe that such a reminder would be given.
Participants	N=20

Drop-out rate	0
Comparison **Participant** **Drop-out**	No pop-up message, free to gamble as long as they wanted N=23 0
Outcome,	Time spent on gambling
Implemented by **Comments**	Researchers All participants were compensated $30 for their participation No information about randomization process or concealment

Author **Year** **Country** **Ref n**r	Wohl et al Canada 2014 [23]
Study design **Setting** **Recruitment** **Population** **Inclusion criteria** **Follow up time**	RCT Laboratory setting Psychology students at university participated in a mass-testing session e.g. they completed the PGSI. EGM gamblers classified as being non-problem or low-risk gambler, were randomly selected from this sample. N=56, no information about how many eligible Mean (±SD) age: 20.38 ± 4.27 years, range 18–39 years Gender: 34% male Gambling: no information Gambling modality: no information Users engaged in EGM gambling activities and classified as non-problem or low-risk gamblers Instantly after experiment
Intervention **Participants** **Drop-out**	Monetary limit tool that incorporated EGM players' desired functionality coupled with design fundamentals of Human Computer Interaction (HCI) and Persuasive Systems Design (PSD: The traffic light system, indicating how close they were to their limit. participants were exposed to 2 pop-up messages. The first appeared when 10% of their allocated credits remaining, if they would like to continue gambling after a 5 s delay. Participants who reached their pre-set limit were presented with a second pop-up message, indicating that they had reached their preset limit and asked if they wished to continue gambling. N=29 0
Comparison **Participants**	Standard pop-up message tool: When the participant hit their limit, a text box appeared and asked if they would like to continue gambling N=27

Drop-out	0
Outcome	Adherence to the pre-set limit
Implemented by	Not reported
Comments	Concern regarding randomization and deviations from intended intervention. They were given a total of $20 dollars (80 credits) to gamble for. They were allowed to leave anytime they desired and keep any winnings and or remaining money that they had.

Limit

Author **Year** **Country** **Ref n**r	Auer et al 2013 UK [24]
Study design	Cohort
Setting	Online
Recruitment	From a representative random sample of who gambled on the win2day gambling website during a 3-month test period
Population	Intense online gamblers N=5,000 out of 100,000 eligible, the 10% most intense players were further investigated Mean (±SD) age: no information Gender: no information Gambling: no information Gambling modality: lottery players 65%, casino players 47%, poker players 15%
Inclusion criteria	Not reported
Follow up time	30 days
Intervention	Voluntary time and/or money limit setting
Participants	N=500
Drop-out rate	0
Comparison	Not applicable
Participants	Not applicable
Drop-out rate	Not applicable
Outcome	Monetary spending (theoretical loss)
Implemented by	Win2day gambling website
Comments	Concern regarding data presentation

Author **Year** **Country** **Ref n**r	Nelson et al 2008 USA [25]
Study design **Setting** **Recruitment** **Population** **Inclusion criteria** **Follow up time**	Cohort Online Internet gamblers subscribed to Bwin during February 2005 and placed bets on that site between February 2005 and September 2006 (n=47,478) N=593 (all of those who used self-limit settings, 1.2% of the final sample) Mean (±SD) age: 29.3 years Gender: 95.9% male Gambling Gambling modality: fixed-odds bets 99.1%, live-action bets 81.7%, poker 5% Those who imposed self-limits on their accounts 6 months
Intervention **Participants** **Drop-out rate**	Self-limit N=593 0
Outcome	Frequency Bets/day Stakes/bet Wagered/ duration Netloss/duration % loss
Implemented by **Comments**	Bwin Some concern with confounding and regarding data presentation

Author **Year** **Country** **Ref n**r	Sharpe et al 2005 Australia [26]
Study design **Setting** **Recruitment** **Population** **Inclusion criteria**	NRS 7 hotels and 4 club venues Players attending these hotels and club venues N=210 out of 634 eligible Mean (±SD) age: 46.1 ±17.9 years Gender: no information Gambling (SOGS, mean); 2.43 ± 3.43 (n=634) Gambling modality: no information Played at least on 2 machines and scored SOGS points

Follow up time	Instantly after experiment
Intervention	Modified 7 EGM machine, to one or more of the independent variables to cover all possible combinations: A. Maximum bet $1, Reel spin 3.5 seconds, all denomination notes accepted. B. Maximum bet $1, Reel spin 5 seconds, all denomination notes accepted C. Maximum bet $1, Reel spin 3.5 seconds, $20 maximum note accepted D. Maximum bet $1, Reel spin 5 seconds, $20 maximum note accepted E. Maximum bet $10, Reel spin 5 seconds, all denomination notes accepted F. Maximum bet $10, Reel spin 3.5 seconds, $20 maximum note accepted G. Maximum bet $10, Reel spin 5 seconds, $20 maximum note accepted
Participants	Not applicable
Drop-out rate	Not applicable
Comparison	7 control EGM machines: Standard configuration one-cent Aristocrat Leisure Technologies 'Pirates' machines, maximum bet of $10, a wager cycle speed set at 3.5 seconds, continuous play capability and accepted notes of denominations to the value of $100.
Participants	Not applicable
Drop-out rate	Not applicable
Outcome	Gambling (SOGS) Losses Time played
Implemented by	Two machines (one control and one machine) were placed adjacent to each other. Participants were observed by a research assistant while playing machines of their own choice and with their own funds. Data collection in hotels was conducted over five hours per day over seven consecutive days. No baseline data, unclear how many that played the different machines. Concerns regarding confounding.
Comments	

Self-exclusions

Author **Year** **Country** **Ref nr**	Caillon et al 2018 France [27]
Study design **Setting** **Recruitment** **Population** **Inclusion criteria** **Follow up time**	RCT Online gamblers Media announcements N=60 Mean (±SD) age: 35.2 years, range 18–65 years Gender: male 73.3% Gambling ≥1/week: 68.3% Gambling every day/almost every day: 21.7% At-risk gamblers (score 3–7, PGSI), ≥18 year, gambling ≥1 during the past month on a website authorized licensed by ARJEL, and agreeing to give access to the gambling account data. 15 days and 2 months
Intervention **Participants** **Drop-out rate**	A 7-day temporary non-reducible and voluntary self-exclusion N=30 Not reported
Comparison **Participant** **Drop-out rate**	No program N=30 Not reported
Outcome,	Gambling problems (PGSI) Money wagered Time spent gambling assessed
Implemented by **Comments**	Not applicable Some concern regarding randomisation and missing data

Author **Year** **Country** **Ref nr**	McCormick et al 2018 Canada [28]
Study design **Setting** **Recruitment** **Population** **Inclusion criteria**	Cohort, prospective Casinos, commercial bingo halls, and venues with slot machines From British Columbia's VSE program, as enrolling in the program. N=326 out of 472 eligible Mean (±SD) age: 48 years, range 19–88 years Gender: 53% female Gambling ≥1/week: 74% Voluntary self-excluders

Follow up time	6 and 12 months
Intervention **Drop-out rate**	Voluntary self-exclusion (VSE) program for 6 months, 1–3 years 6 months: n=57 (17.5%), 12 months: n=91(27.9)
Outcome	Problem gambling (PGSI) Program violator and abstainer
Implemented by **Comments**	Personnel at gambling venues Recruitment from multiple venues. Large drop out.

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