**Supplementary File 1**

**Table 1: Quality Ratings for Peer-reviewed Literature (Qualitative studies)**

| Rating Criteria / Author | Kim et al. (2017) | Kristianse et al. (2017) | Kristianse et al. (2018) | Nekich & Ohtshka (2016) | Rash & McGrath (2017) | Tagoe et al. (2018) | Wardle et al. (2019) *(Review)* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Is the qualitative approach appropriate to answer the research question? | Y | Y | Y | Y | Y | Y | Y | | | | | | | | |
| 2. Are the qualitative data collection methods adequate to address the research question? | Y | Y | Y | Y | Y | Y | Y | | | | | | | | |
| 3. Are the findings adequately derived from the data? | Y | Y | Y | Y | Y | Y | Y | | | | | | | | |
| 4. Is the interpretation of results sufficiently substantiated by data? | Y | Y | Y | Y | Y | Y | Y | | | | | | | | |
| 5. Is there coherence between qualitative data sources, collection, analysis and interpretation? | Y | Y | Y | Y | Y | Y | Y | | | | | | | | |

**Table 2: Quality Ratings for Peer-reviewed (Quant RCTs)**

| Rating Criteria<br><br>Author | Calado et al. (2020) | O' Loughin & Blaszczynski | Sirolo et al. (2019) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Is randomization appropriately performed? | Y | Y | ? | | | | | | | | | | | | | | | |
| 2. Are the groups comparable at baseline? | Y | Y | Y | | | | | | | | | | | | | | | |
| 3. Are there complete outcome data? | Y | Y | Y | | | | | | | | | | | | | | | |
| 4. Are outcome assessors blinded to the intervention provided? | ? | Y | ? | | | | | | | | | | | | | | | |
| 5. Did the participants adhere to the assigned intervention? | Y | Y | Y | | | | | | | | | | | | | | | |

**Table 3: Quality Ratings for Peer-reviewed Literature – (Quant Non-Randomised)**

| Rating Criteria                                                                                          | Ciccarelli et al. (2019) | Dussault et al. (2019) | Li et al. (2018) | Pallesen et al. (2016) | Wu et al. (2019) | | | | | | | | | | | |
|---------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Are the participants representative of the target population?                                          | Y | Y | Y | Y | Y | | | | | | | | | | | |
| 2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?               | Y | Y | Y | Y | Y | | | | | | | | | | | |
| 3. Are there complete outcome data?                                                                      | Y | Y | Y | Y | Y | | | | | | | | | | | |
| 4. Are the confounders accounted for in the design and analysis?                                         | Y | Y | Y | Y | Y | | | | | | | | | | | |
| 5. During the study period, is the intervention administered (or exposure occurred) as intended?         | Y | Y | Y | Y | Y | | | | | | | | | | | |

**Table 4: Quality Ratings for Peer-reviewed Literature (Quant Descriptive)**

| Rating Criteria / Author | Abdi et al. (2015) | Aguocha et al. (2019) | Aguocha et al. (2019) | Andrie et al. (2018) | Bozzato et al. (2020) | Buja et al. (2019) | Canale et al. (2016a) | Canale et al. (2016b) | Cosenza et al. (2019) | Deans et al. (2017) | DeCamp (2020) | Dixon et al. (2016) | Donati et al. (2020) | Dussault et al. (2019) | Elton-Marshall et al. (2016) | Estevez et al. (2019) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Is the sampling strategy relevant to address the research question? | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 2. Is the sample representative of the target population? | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 3. Are the measurements appropriate? | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 4. Is the risk of nonresponse bias low? | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 5. Is the statistical analysis appropriate to answer the research question? | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |

**Table 4: Quality Ratings for Peer-reviewed Literature (Quant Descriptive) cont.**

| Rating Criteria / Author | Estevez et al. (2020a) | Estevez (2020b) | Farhat (2020a) | Farhat (2020b) | Foster et al. (2016) | Gavriel-Fried et al. (2015) | Ginley et al. (2015) | Ginley et al. (2018) | Gonzalez-Roz et al. (2017) | Gonzalez-Sicilia (2020) | Gori et al. (2015) | Hanss et al. (2015) | Ho (2017) | Huic et al. (2017) | Jasoorya et al. (2017) | Jauregui (2019) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Is the sampling strategy relevant to address the research question? | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 2. Is the sample representative of the target population? | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 3. Are the measurements appropriate? | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 4. Is the risk of nonresponse bias low? | Y | Y | Y | Y | Y | ? | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 5. Is the statistical analysis appropriate to answer the research question? | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |

**Table 4: Quality Ratings for Peer-reviewed Literature (Quant Descriptive) cont.**

| Rating Criteria / Author | Jauregui (2020) | Kalte-negger (2019) | Kam et al. (2017) | Kang (2019) | Kang (2020) | King & Delfabbro (2016) | Livazovich (2019) | Marchica et al. (2017) | Martinez-Loredo (2019) | McBride et al. (2016) | Melendez-Torres (2020) | Oksanene (2019) | Paleologou (2019) | Passanisi (2019) | Pisarska & Ostaszewski (2020) | Raisamo (2020) | Rasanen (2016) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Is the sampling strategy relevant to address the research question? | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 2. Is the sample representative of the target population? | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 3. Are the measurements appropriate? | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 4. Is the risk of nonresponse bias low? | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | N | Y |
| 5. Is the statistical analysis appropriate to answer the research question? | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |

**Table 4: Quality Ratings for Peer-reviewed Literature (Quant Descriptive) cont.**

| Rating Criteria / Author | Reardon et al. (2019) | Rider et al. (2019) | Salolainen et al. (2018) | Sanscartier et al. (2019) | Sarti & Triventi (2017) | Sharman, Murphy et al. (2019) | Sharman, Butler & Roberts (2019) *(Review)* | Spangberg & Svensson (2019) | Vitaro et al. (2019) | Walters et al. (2019) | Weinberger et al (2015) | Yu & Fa (2019) | Yu & Ma (2019) *(Review)* | Zhai et al. (2019) | Zhai et al. (2020) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Is the sampling strategy relevant to address the research question? | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | | |
| 2. Is the sample representative of the target population? | Y | Y | Y | Y | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | | |
| 3. Are the measurements appropriate? | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | | |
| 4. Is the risk of nonresponse bias low? | Y | Y | Y | Y | N | Y | Y | Y | Y | Y | ? | Y | Y | Y | Y | | |
| 5. Is the statistical analysis appropriate to answer the research question? | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | | |

**Supplementary File 2**

**Table 1: Summary of included articles**

| Author(s) & year/ Study location | Article type | Aim | Key findings | Gaps identified by the authors |
|---|---|---|---|---|
| Abdi et al. (2015)<br><br>Ethiopia | Cross-sectional research | To examine the personal, social and environmental risk factors of problem gambling in four high schools in Ethiopia, among students | Males more at risk than females. Most common form of gambling cards followed by coin toss and pool. Personal feelings about gambling, social factors and environmental factors were all significant correlates of problem gambling. | **Knowledge gap [Intervention programs]**<br>Need for systematic design and evaluation of evidence-based educational interventions to prevent problem gambling among young people |
| Aguocha et al. (2019)<br><br>Nigeria | Cross-sectional research | To investigate the determinants of gambling among male secondary school students | Students over 18 and whose friend, parents, sibling gamble, were more likely to be currently engaged in gambling behaviour. Having friends that gambled, accepted gambling, and parents with a gambling problem, predicted gambling among students. The study concluded that gambling is common among students. | **Knowledge gap [Intervention programs]**<br>Need for systematic design and evaluation of evidence-based intervention programs for adolescents |
| Andrie et al. (2019)<br><br>Greece, Germany, Iceland, Netherlands, Poland, Romania and Spain | Cross-sectional research | To examine gambling involvement and problem gambling correlates among European adolescents | Males higher risk than females, older age, parental education lower, and absence of siblings I.e being an only child. Higher risk gambling was associated with problematic internet use, lower grades, lower age when first using the internet. Conclusion, better gambling legislation to protect adolescent gambling involvement especially males | **Knowledge gap [more research in general]**<br>A need for more gambling research in general in countries where higher gambling involvement is lagging behind gambling regulation. |
| Bozzato et al. (2020)<br><br>Italy | Cross-sectional research | To examine gambling behaviour in adolescents: prevalence and its relation to social self-regulatory and academic self-efficacy | Higher risk and gambling more than one form of gambling was more common among males. 77% reported gambling at least once during the past 12 months (87.2% males; 67.1% females). The researchers suggested this rate was higher than other studies as lotteries and cards with family and friends were included – all types of gambling gambles. Males gambled to win money, taste of challenge, and to imitate friends. Females motivation was boredom (regulate emotion) and because family members do it. | **Knowledge gap [specific traits]**<br>More research on relationship between self-efficacy and gambling among adolescents |
| Buja et al. (2019) | Cross-sectional research | To examine the pathways connecting socioeconomic | Gambling associated with alcohol consumption. Students with higher income more at risk of | **Knowledge gap [Intervention programs]**<br>Need for development and evaluation of evidence-based |

| | | variables, substance abuse and gambling behaviour among Italian high-school students | gambling, drinking and smoking. Males more likely to be involved in risky behaviours. Females more likely to smoke. Students with better-educated parents were higher risk of alcohol and cannabis. | intervention programs for at risk youth |
|---|---|---|---|---|
| Italy | | | | |
| Calado et al. (2020)<br><br>Portugal | Pre-post intervention study | To investigate the efficacy of a gambling prevention program which targeted misconceptions about gambling and other risk behaviours, improving decision making skills | The study provides evidence for the effectiveness of gambling education programs in high school curricula. | **Knowledge gap [intervention programs]**<br>Further research to explore the relationship adolescent gamblers have with significant others and how this affects their attitudes and perceptions. Also, further research to develop and evaluate intervention programs. |
| Canale, Vieno et al. (2016)<br><br>Italy | Cross-sectional research | To understand the impact of online gambling on gambling problems in a large-scale nationally representative sample of Italian youth, and to identify and then further examine a subgroup of online gamblers who reported higher rates of gambling problems | Rates of problem gambling were five times higher among online gamblers than non-online gamblers. Factors that increased the risk of becoming a problem online gambler included living with non-birth parents, having a higher perception of financial family status, being more involved with gambling, and the medium preferences of remote gamblers (e.g., Internet cafes, digital television, and video game console). | **Knowledge gap [Sub-populations]**<br>Future studies should quantify the extent of involvement in online gambling to enable evaluation of regular Internet gambling.<br>The comparisons between the more nuanced groups of gamblers (offline gambling only, online gambling only, online and offline gambling but on different activities, online and offline gambling but on the same activities) warrant additional study.<br>Future studies may benefit from including impulsivity traits and reasons for gambling to better elucidate the differences between online and non-online gamblers. |
| Canale et al. (2016) | Cross-sectional research | To understand the impact of online gambling on gambling problems in a large-scale nationally representative sample of Italian youth, and to identify and then further examine a subgroup of online gamblers who reported higher rates of gambling problems | Rates of problem gambling were five times higher among online gamblers than non-online gamblers. Factors that increased the risk of becoming a problem online gambler included living with non-birth parents, having a higher perception of financial family status, being more involved with gambling, and the medium preferences of remote gamblers (e.g., Internet cafes, digital television, and video game console). | **Knowledge gap [Sub-populations]**<br>Future studies should quantify the extent of involvement in online gambling to enable evaluation of regular Internet gambling.<br>The comparisons between the more nuanced groups of gamblers (offline gambling only, online gambling only, online and offline gambling but on different activities, online and offline gambling but on the same activities) warrant additional study.<br>Future studies may benefit from including impulsivity traits and reasons for gambling to better elucidate the differences between online and non-online gamblers. |
| Ciccarelli et al. (2019)<br><br>Italy | Non-randomised experimental study | To examine attentional bias among adolescent problem gamblers and non-gamblers | Problem gamblers displayed greater bias towards attending to gambling related cues than non-problem gamblers. | **Knowledge gap [attentional bias among adolescent gamblers]**<br>Further research on the precise nature of relationship between adolescent biases of attention re gambling stimuli |
| Cozensa et al. (2019)<br><br>Italy | Cross-sectional design | To investigate the role that general impairment in mentalization plays in gambling disorder | Results indicated that problem gamblers tended to focus more on the immediate outcomes of their behaviour or reward/outcome than non-problem gamblers. | **Knowledge gap [more research in general]**<br>More research on how adolescents mentalise and perceive gambling |
| Deans et al. | Qualitative | To explore the way peer | Respondents perceived that sports betting was a | **Knowledge gaps [Research preventative programs]** |

| | | | | |
|---|---|---|---|---|
| (2017)<br><br>Australia | research | group behaviours influenced attitudes towards, and the consumption of, gambling products among young sports betting gamblers | normal and accepted activity, embedded within sport. | Need for development and evaluation of public health campaigns as a part of a public health approach to address the impact of marketing tactics in shifting social norms |
| DeCamp (2020)<br><br>USA | Cross-sectional research | To examine the association between gaming loot boxes and problem gambling | In contrast to other loot box studies that examined adults, a lower prevalence of loot box purchase was observed among youth gamers i.e. a lower proportion of youth gamers purchased loot boxes than adult gamers. Overall, loot boxes and gambling share similarities, however, risk and protective factors may not be the same. | **Knowledge gap [more research in general]**<br>Large knowledge gap in area of loot-boxes particularly given the prevalence of them among internet games |
| Derevensky et al. (2019)<br><br>Canada | Discussion article | Discussion of problem gambling gaming, internet, and smartphone use among children and adolescents | Changing face of gambling due to technological advances revolutionising the gambling industry. Very few adolescent children and adolescents voluntarily seek treatment for behavioural disorders. Parents play an essential role in helping prevent and modify their children's behavioural problems/addictions. | **Knowledge gap [longitudinal research]**<br>Further examination of the developmental trajectories and risk and protective factors for smartphone addiction and online gambling addiction needed |
| Derevensky et al. (2015)<br><br>Canada | Discussion paper | Discussion paper of adolescent gambling literature | More forms of gambling now available, and the social acceptability of gambling has resulted in more adolescents engaging in gambling, despite the 18 years old age restriction. The term 'gaming' helps to normalise gambling as a socially acceptable form of entertainment. Young people are reluctant to seek treatment for problem gambling. | **Knowledge gap [more research in general]**<br>More research needed given rapidly changing gambling environment |
| Dixon et al. (2016)<br><br>Australia | Cross-sectional research | Examination of the relationship between gambling attitudes, involvement, and problems in adolescence | Parental discipline and adolescent coping styles protected against at-risk gambling for those who gambled infrequently but did not protect those adolescents where gambling involvement was high. | **Knowledge gap [more research in general]**<br>More research on influence of parental attitudes and adolescent gambling involvement |
| Donait et al. (2020)<br><br>Italy | Cross-sectional research | To examine immigration status on sensation seeking and problem gambling | Immigrant adolescents had higher problem gambling and risky behaviours than non-immigrants. Moderation analyses showed higher sensation seeking related to problem gambling after controlling for gender for immigrants. | **Knowledge gap [Intervention programs]**<br>More research on sensation seeking and problem gambling among this target group – immigrants |
| Donait et al. | Cross-sectional | To examine time perspectives | Results showed that the present time perspective | **Knowledge gap [Intervention programs]** |

| | | | | |
|---|---|---|---|---|
| (2019)<br><br>Italy | research | and gambling in adolescent boys | was associated with problem gambling, and future time perspective negatively associated. | Development and evaluation of intervention programs which help adolescents focus on future goals, to mitigate risk of development of problem gambling |
| Dussault et al. (2019)<br><br>Canada | Longitudinal study | To examine the discrepancy of self-reporting of age first gambled by asking same question four times across a year | Older youth had greater discrepancies, along with time passed. The authors caution researchers when using self-report to examine age first gambled among youth. | **Knowledge gap [more research in general]**<br>More research into how psychological-related variables could affect the discrepancies found in the age of initiation of gambling activity |
| Dussault et al. (2020)<br><br>Canada | Cross-sectional research | To examine the characteristics of youth poker players | Results found 4 classes/groups of players: 1 played only simulated poker (i.e. not for real money), 2 only at school, 3 only at home, 4 a diverse pattern. The authors emphasise that adolescent poker players should not be considered a homogenous group. | **Knowledge gaps [Sub-groups]**<br>More research on sub-groups of gambling (different forms of gambling) |
| Elton-Marshall et al. (2016)<br><br>Canada | Cross-sectional research | To examine online and land-based gambling behaviour among adolescents in 3 Canadian provinces prior to the implementation of legalised online gambling | Adolescents were engaging in online gambling at a significantly higher rate than has been previously found and were using technology to engage in simulated gambling. | **Knowledge gap [Research on specific factors: Gambling intentions/behaviours/actions]**<br>Further research is needed to understand whether adolescents are betting on the outcomes of video games or engaging in video games that include gambling for money, or both.<br>Further research is needed to identify which websites youth are accessing. |
| Estevez et al. (2020a)<br><br>Spain | Cross-sectional research | To investigate the severity of gambling and gambling related cognitions as predictors of emotional regulation and coping strategies in adolescents | Problem gamblers scored higher on gambling severity, emotional dysregulation, cognitive biases, and maladaptive coping strategies than non-problem gamblers. | **Knowledge gap [sub-groups]**<br>More research needed on female adolescent and young adult gambling involvement |
| Estevez et al. (2019)<br><br>Spain | Cross-sectional research | To investigate attachment and behavioural addictions in adolescents | Results showed parent-child attachment was negatively associated with all behavioural addictions: gambling, internet, video gaming. | **Knowledge gap [more research in general and intervention programs]**<br>Further research on the role of parental and peer attachment and its relationship to coping mechanisms. Development and evaluation of gambling intervention programs for children and adolescents |
| Estevez et al. (2020b)<br><br>Spain | Cross-sectional research | To examine the role of alexithymia in adolescents and young people and its relationship with gambling and attachment | Problem gamblers scored higher on substance, alcohol, gaming disorders and alexithymia, and lower in parental attachment than non-problem gamblers. Alexithymia was found to mediate the negative relationship between parental | **Knowledge gap [more research in general and intervention programs]**<br>More research of parental attachment and problem gambling among adolescents, and development of targeted interventions |

| | | | attachment and problem gambling. | |
|---|---|---|---|---|
| Farhat et al. (2020a)<br><br>USA | Cross-sectional research | To examine gambling attitudes, health correlates, and excitement seeking among adolescents | Excitement-seeking gambling was associated with greater at risk/problem gambling, greater alcohol use, and more permissive giving cognitions than non-excitement seeking gambling. | **Knowledge gap [more research in general]**<br>More research needed on reasons why adolescents gamble |
| Farhat et al. (2020b)<br><br>USA | Cross-sectional research | To investigate self-injurious behaviour and gambling-related attitudes, perceptions, and behaviours among adolescents | Adolescents acknowledging self-harming behaviours were more likely to report at risk or problem gambling and more permissive giving gambling cognitions. | **Knowledge gap [Intervention programs]**<br>Research needed on development and evaluation of intervention programs for adolescent problem gambling targeting distress tolerance |
| Ferrara et al. (2019)<br><br>Italy | Commentary article | Commentary on risk of Gambling Disorders among adolescents | Gambling has become a significant public health issue and over the past 25 years the phenomenon of gambling among children and adolescents has grown, however, the issue remains hidden in too many societies and among health care professionals. | **Knowledge gap [more research in general]**<br>Research involving collaboration between scientific societies, governments and stakeholders, and use research findings to design effective social policies and public health intervention options |
| Frisone et al. (2020)<br><br>Italy | Literature review | Gambling in adolescence a narrative review of the last 20 years | Males more likely to have at risk or problem gambling. Review examines association of gender, drug use, technology, age differences, impulsivity/sensation seeking, role of society as a risk factor. | **Knowledge gap [Intervention programs]**<br>Research needed on development and evaluation of intervention programs |
| Gavriel-Fried et al. (2015)<br><br>Israel | Cross-sectional research | To examine the link between competitive sports and gambling behaviours | Significant association found between involvement in competitive sports and gambling frequency for both genders. Link with problem gambling only for males. | **Knowledge gaps [Intervention programs]**<br>A need for development and evaluation of the integration of gambling prevention programs among youths who are involved in competitive sports |
| Ginley et al. (2015)<br><br>USA | Cross-sectional research | To explore college students' beliefs about gambling | Males more likely to have gambled past year than females and report higher frequency of gambling. Adverse consequences from gambling reported by 15% of males compared to only 4% of females. | **Knowledge gap [More research in general]**<br>Further research on young peoples' gambling expectancies and association with risky gambling. Also, longitudinal research. |
| Giralt et al. (2018)<br><br>Germany | Cross-sectional research | To examine the prevalence of problem gambling among German students and use of different forms of gambling | Past 12-month participation in gambling was 40% with PG rate of 1.7 and 2.2 in the two States surveyed. Males with background of migration more at risk and displayed greater psychopathological symptoms. Slots and online associated with more problem gambling. | **Knowledge gap [Longitudinal]**<br>Need for longitudinal research to examine believes about gambling over time |
| Gonzalez-Roz et al. (2017)<br><br>Spain | Cross-sectional research | To examine gambling prevalence and behaviour among Spanish adolescents | Having a relative with gambling problems predicted risk gambling. Living with only one parent or no parents and participation with EGMs during past year predicted problem gambling. Mixed-mode gambling predicted both at risk and | **Knowledge gap [sub-groups]**<br>Further research on sub-groups of gamblers re how they access gambling e.g. land-based vs online only vs mixed modes of access. Also, intervention programs. |

| | | | problem gambling. | |
|---|---|---|---|---|
| Gonzalez-Sicilia et al. (2020)<br><br>Canada | Cross-sectional research | Investigation of association between parental smoking and child gambling | Early childhood smoke exposure corresponded to 18% increased chances of gambling participation at age 12. | **Knowledge gap [more research in general]**<br>More research on association between two major public health issues: smoking and problem gambling. Design and evaluation of relevant public health campaigns |
| Gori et al. (2015)<br><br>Italy | Cross-sectional research | To examine the relationship between adolescent gambling severity and attitudes | Frequent exposure to media messages may result in normalisation of gambling. At-risk gamblers more likely to be involved in heavy drinking and use of sedatives. 53% engaged in gambling during the past year. | **Knowledge gap [Intervention programs, public health]**<br>Development and evaluation of public health campaigns targeting youth gambling |
| Hanss et al. (2015)<br><br>Norway | Cross-sectional research | To investigate the prevalence and correlates of PG, including motivational variables (future gambling intentions, attitudes toward gambling, and gambling-related knowledge) among 17-year-old Norwegians | 26% had gambled during the previous month. 20.3% gambled with no problems, 4.1% at-risk and 1.5 moderate risk and 0.2% problem gambling. Males more likely to be at-risk or problem gamblers. Prevalence.<br>Motivational variables (future gambling intentions, attitudes toward gambling, and gambling-related knowledge) distinguished best between those who did not gamble, non-problem gamblers, and risk and problem gamblers. | **Knowledge gap [longitudinal]**<br>Longitudinal research needed to examine attitudes over time, and alternative measures of gambling behaviour could be used other than self-report (e.g. parental ratings) |
| Ho (2017)<br><br>Ethiopia | Cross-sectional research | To examine the risk factors of adolescent pathological gambling | Social poker and gambling in Amusement Gaming Centres on gambling type machines were predictive of problem gambling among adolescents. Internet gambling was not predictive of problem gambling. | **Knowledge gap [intervention programs, public health]**<br>Development and evaluation of responsible gambling practices from public health perspective to prevent underage gambling are needed. |
| Huic, A., et al. (2017)<br><br>Croatia | Cross-sectional research | To investigate gambling behaviour among adolescent girls in Croatia and examine psychosocial predictors | 7.4% regular gamblers (once a week or more), 11.2% mild problems, 3.2% serious problems. 63% had ever gambled in their life (once a year or less and once a month or less combined), scratchies and lotto most preferred among lifetime gamblers with sports betting more preferred among regular gamblers. | **Knowledge gap [intervention programs]**<br>More research needed on needs of female adolescent gamblers to guide development of specific intervention programs, and longitudinal research is needed. |
| Jaisoorya et al. (2017)<br><br>India | Cross-sectional research | To examine gambling behaviour among high school students in India | 27.9% of students had ever gambled, 7.1% problem gamblers. Of those who had ever gambled, 25.2% were problem gamblers (one in four). Problem gamblers were more likely to be males, have academic failure, higher rates of alcohol and tobacco use, and psychological distress including suicidality. | **Knowledge gap [more research in general]**<br>More research needed on adolescent problem gambling in India given the reported prevalence |
| Jauregui & | Cross-sectional | To examine the role of | Difficulties in emotional regulation mediated the | **Knowledge gap [intervention programs]** |

| | | | | |
|---|---|---|---|---|
| Estevez (2020)<br><br>Spain | research | attachment, coping, and emotion Regulation in gambling among adolescents and young people | relationship between gambling motives and gambling severity. Attachment with parents and peers was negatively associated with problem gambling. Emotional regulation difficulties were positively related to problem gambling. | More research needed on development and evaluation of intervention programs |
| Jauregui et al. (2020)<br><br>Spain | Cross-sectional research | To investigate gambling motives and their association with addictive disorders and negative and positive mood in youth | Higher scores on problem gambling were associated with higher scores in enhancement (seeking to increase positive emotion), coping and social motives. | **Knowledge gap [intervention programs]**<br>More research needed on development and evaluation of intervention programs |
| Kaltenegger et al. (2019)<br><br>Sweden | Cross-sectional research | To investigate the relationship between impulsivity and risky gambling | Impulsivity was a risk factor for at risk gambling and episodic drinking. | **Knowledge gap [intervention programs]**<br>Prevention measures should address adolescents who exhibit risk factors for gambling and aim at reducing psychological problems**.** |
| Kang et al. (2019)<br><br>Korea | Cross-sectional research | To examine gambling factors related with the level of adolescent problem gamblers | Risk factors were nearby gambling facilities, personal relationship with people that gamble, being male more likely to have a problem with gambling. | **Knowledge gap [intervention programs]**<br>Research needed on development of interventions which target not only individuals, but environmental strategies e.g. accessibility and regulation – more research on the environmental factors |
| Kang et al. 2020)<br><br>Korea | Cross-sectional | Examination of gambling subgroups among Korean out-of-school adolescents | Three subgroups emerged: rarely gambled, immediate gain gambling, broad gambling. Immediate gain gambling scored higher on problem gambling severity and time and money spent gambling. Broad gamblers gambled mostly for fun and excitement, not to win money. Immediate gain gamblers gambled mainly to win money. | **Knowledge gap [sub-groups vulnerable adolescents]**<br>More research needed on vulnerable sub-groups of adolescent gamblers: e.g. those not attending formal education who are generally not picked up in school/educational institution surveys |
| Kam et al. (2017)<br><br>China | Cross-sectional research | To investigate gambling behaviour among college and university students in China | Most frequently reported gambling activities were mahjong (61.8%), soccer matches (40.2%) and Mark Six lottery (37.2%. Males were more likely to report gambling problems. Most problem gamblers had their first bet before age 14 years. | **Knowledge gap [Intervention programs]**<br>Development and evaluation of preventative programs on university campuses |
| Kim et al. (2016)<br><br>Canada | Qualitative research | To explore the potential link between social casino games and online gambling | While many young adults felt immune to effects of social casino games, there was a general consensus that social casino games might facilitate the transition to online gambling among younger teenagers (aged 12-14), due to the ease of accessibility and early exposure. | **Knowledge gap [More research in general]**<br>More studies are needed to further examine the link between social casino games and online gambling |
| King & Delfabbro (2016) | Cross-sectional research | To examine the types and extent of perceived parental | Financial gambling was usually facilitated by a parent, particularly for scratch tickets and | **Method gap [Qualitative research; Experimental research]**<br>**Knowledge gap [Sub-populations]** |

| | | | | |
|---|---|---|---|---|
| Australia | | influences on adolescents' gambling activities, including whether there might exist differences across commercial and simulated types of activities | sports betting. Simulated gambling activities, such as social casino games, tended to be reported as being unsupervised by parents. Young people's perceptions of parents' measures to limit, restrict or oversee online and electronic activities were not significantly associated with youth simulated gambling. Their perceptions of parental influences were not significant predictors of problem gambling behaviours. | Clinical and qualitative studies of adolescents engaged in gambling, including populations from mental health settings, is needed in order to cross-validate survey data on adolescent problem gambling |
| Kristiansen & Trajberg (2017)<br><br>Denmark | Qualitative research | To explore how young people experience and respond to changes in gambling opportunities | Four overarching themes were identified: legislation, conditions of entry, proximity and technological innovations. | **Method gap [Qualitative research]**<br>Further research is needed:<br>To shed light on the dimensions of the online interaction between adolescents and gambling operators<br>To assess whether money-free online gambling encourages positive attitudes towards commercial gambling, and the effects of online advertising on young people, including minors<br>To explore perceptions and implications of free bonuses |
| Kristiansen et al. (2018)<br><br>Denmark | Qualitative research (longitudinal) | To explore the types of simulated games and gambling platforms used by adolescents, adolescent's experiences, motivations and behaviours vis a`-vis simulated gambling and the potential interrelationships between simulated and monetary forms gambling | Enjoying social interactional effects appeared to be the main reasons young people engage in simulated gambling games. The study documented characteristics of both a catalyst pathway and a containment pathway emphasizing that for some young people simulated gambling may increase the likelihood of involvement in real money gambling while it may decrease it for others. | **Knowledge gap [Research on specific factors: Psychological]**<br>More research is needed to explore and clarify the psychological mechanisms at play in various forms of online simulated gambling, which may help understand how players are induced to continue playing or to transition from simulated gambling to monetary gambling forms. |
| Kryszajtys et al. (2018)<br><br>Canada | Literature review | To review the literature on the relationship between delinquent behaviour and adolescent gambling between 2000 – 2016 | Nine studies met inclusion criteria. Problem gambling and delinquent behaviours have common risk factors | **Knowledge gap**<br>More research on the relationship between gambling and delinquent behaviour is needed; in particular, the development and evaluation of targeted intervention strategies. No qualitative studies met inclusion criteria. |
| Li et al. 2018<br><br>Australia | Experimental design | To examine implicit association and explicit intention regarding gambling and sport among underage youth | An implicit association found between gambling and sport for both males and females. Stronger association among sports that are generally associated with gambling (football, basketball rather than gymnastics or archery). Further, a stronger association found among sports where gambling logo was sports relevant (Bet365) than | **Knowledge gap**<br>More research is needed on the impact of gambling marketing on adolescents. |

| | | | irrelevant (X-lotto). | |
|---|---|---|---|---|
| Livazovic & Bojčić (2019)<br><br>Croatia | Cross-sectional research | To examine the psychological, social and financial consequences of problem gambling among adolescents | Findings showed 3-7% of adolescents regularly participate in serious gambling activities. Greatest risk, older male adolescents who struggled academically and have lower educated fathers and report low family satisfaction and attend vocational training facilities. | **Knowledge gap [more research in general]**<br>More research is needed to further examine if education improving knowledge misconceptions about gambling helps reduce risk of developing problem gambling among adolescents. |
| Marchica et al. (2017)<br><br>USA | Cross-sectional research | Examined the relationship between regular participation (more than once a month) in sport-relevant gambling activities among adolescents and those identified as being at-risk for a gambling problem | Regular involvement in sports betting, fantasy sports betting, and daily fantasy sports betting among adolescents was associated with a higher risk of gambling problems. Further, although males participate more frequently in these activities, females who participate have a stronger likelihood of being at-risk. Students aged 16–19 years old are at a higher risk for developing a gambling problem compared to younger adolescents when regularly engaging in sports-related gambling. Moreover, regularly participating in daily fantasy sports is the strongest predictor of at-risk gambling behaviour in 13 to 15-year-old students. A hierarchical logistic regression supports that controlling for gender and age, all forms of sport-relevant gambling activities are significant predictors of at-risk gambling. | **Method gap [More representative samples/other sampling gaps]**<br>Future studies should investigate the participation rates and impact of fantasy sports (both daily and league based) among adolescents on a larger scale in order to identify how this growing activity may affect problem gambling behaviours. |
| Martinez-Loredo et al. (2019)<br><br>Spain | Cross-sectional research | To investigate gender differences of substance use and gambling patterns among adolescents | Sensation seeking was associated with higher gambling problems in both males and females and with alcohol among females. | **Knowledge gap [sub-groups and intervention programs]**<br>More research needed on different groups of gamblers, and the development and evaluation of treatments to target them |
| McBride & Derevensky (2016)<br><br>Canada | Cross-sectional research | To examine commonalities between gambling behaviour and problem gambling among video game players and between video game playing and addicted playing among gamblers | Gamblers, relative to non-gamblers, were more likely to play video games. Video game players were more likely than nonplayers to gamble. Both social and problem gamblers had higher rates of video game playing than did non-gamblers, and addicted gamers had higher rates of gambling than did social and non-gamers. | **Knowledge gap [Research on specific factors: Gambling intentions/behaviours/actions; Psychological]**<br>It would be of interest to determine the extent to which individuals distinguish between gambling and video game playing with respect to skill in determining the outcome.<br>Further research into motivations for playing on the basis of gender would help to inform treatment strategies.<br><br>**Method gap [More representative samples/other sampling gaps]**<br>Research with young people who are not in school would provide valuable insight into the gambling behaviour of young adults in general. |
| Melendez-Torres | Cross-sectional | To examine the prevalence of | Males gambled more frequently than females, | **Knowledge gap [More research in general and longitudinal** |

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|---|---|---|---|---|
| et al. (2020)<br><br>UK | survey | gambling behaviours and their associations with socioemotional harm among 11-16 year olds | more affluent families had higher level of adolescent gambling, lower connection to school associated with gambling and socioemotional harms. Form gambling fruit/slot machines, private bets with friends for money, cards with friends for money, and lotto. Gambling socioemotional harms positively correlated with age, and this interaction was more pronounced for males. | **research]**<br>More research into how adolescents view gambling and whether this predicts future gambling problems in adulthood |
| Nekich & Ohtsuka (2016)<br><br>Australia | Qualitative research | To explore the experiences of young Australian adults who gamble regularly at gambling machine venues | Overall, gambling was seen as positive social activity. The results highlighted the tension between individual agency, societal expectation, and familial influence. | **Method gap [intervention strategies]**<br>**Development of intervention strategies needed and should involve significant others, family, friendship groups**<br>The findings need to be confirmed using more recent data and by comparing with other market data. |
| Oksanen et al. (2019)<br><br>Finland | Cross-sectional | To investigate gambling activities and association with behavioural risk factors and protective factors 15-25 year olds | Competent online gambling (involving some level of perceived skill: poker, sports, online casino) a risk for problem gambling. | **Knowledge gap**<br>More research needed on new forms of online gambling, distinguishing between perceived skill-based and chance-based, and related policy development. |
| O'Loughlin & Blaszczynski (2018)<br><br>Australia | Randomised experimental design | To compare the influence of gambling advertisements posted on social media by gambling operators, on social media by peers, and gambling operators print media, on male youth gambling attitudes and intentions | Gambling operator adverts more influential than peer posted adverts, on both traditional print and social media, suggesting greater regulation for such industry adverts on social media | **Method gap [intervention strategies, public health]**<br>More research is needed on the influence of gambling advertising on youth, and development and evaluation of interventions from a public health perspective. |
| Paleologou et al. (2019)<br><br>Greece | Cross-sectional research | To investigate problem gambling and concurrent emotional and behavioural problems among adolescents | Hyperactivity/attentional problems were related to problem gambling. Also related were emotional problems, peer problems, conduct problems. Prosocial scores were negatively associated with problem gambling. | **Knowledge gap**<br>Further investigation needed for concurrent emotional/behavioural problems in adolescents with gambling problems |
| Pallesen et al. (2016)<br><br>Norway | Longitudinal study | To examine factors which influence changing attitudes towards gambling | Approval of gambling by close others at wave 1 was associated with more acceptant attitudes at wave 2, and males developed more acceptant attitudes. Participation of gambling at wave 1 associated with greater development of acceptant attitudes at wave 2. | **Knowledge gaps**<br>Males may develop more acceptant gambling attitudes than females in late adolescence therefore preventative strategies should take note of these findings. More longitudinal studies are needed to identify factors which can change gambling related attitudes over time |
| Passanisi et al. (2019) | Cross-sectional research | To investigate the relationship between | Results indicated emotional problems associated with problem gambling. Emotional problems, | **Knowledge gap**<br>More research to examine factors that explain adolescent gambling, |

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| Greece | | maladaptive personality traits and mindfulness deficits among adolescent regular gamblers | attentional problems, social dysfunction all significantly associated with gambling problems. | and more longitudinal research needed |
| Pisarka & Ostaszewski (2020)

Poland | Longitudinal study | To examine the factors associated with youth gambling | Most frequently reported were lotter, scratch cards, then sports betting. Males more likely to have risky gambling, other risk factors were sensation seeking and cyber bullying. Protective factors were positive relationship with parents and meaningful activities. Conclusion re practical implications was interventions which build positive relationships with parents and develop meaningful activities for adolescents. The rate of sports betting increased at time/wave 2, indicating that this type of gambling increases with age (over 2 years). | **Knowledge gap**
More research needed on adolescent gambling and associated sociodemographic factors |
| Raisamo et al. (2020)

Finland | Cross-sectional (comparative) | To examine changes in gambling expenditure and gambling-related harms among adolescents in Finland between 2011-2017 | Significant reduction of gambling expenditure among 12-16 year olds. No change among 18 year olds. Among both boys and girls, most prevalent reported harm feeling ashamed, disrupt daily rhythm and disrupt school/work | **Knowledge gap**
Further regular updates are required due to the rapidly changing gambling landscape. |
| Rasanen et al. (2016)

Finland | Cross-sectional | To examine relationships between gambling frequency, health risk-taking and poor health, and support (parental, friends, school). | Poor health and health risk-taking associated with increased gambling. Social support from family, school related to decreased gambling boys and girls. | **Knowledge gap [treatment/intervention]**
Interventions are needed and should target other risk-taking into consideration, and increase social support from parents and schools. |
| Rash & McGrath (2017)

Canada | Cross-sectional research | To investigate the motives for not gambling among young adult non-gamblers | The results revealed eight specific motives for why participants chose not to gamble: 'financial reasons and risk aversion'; 'disinterest and other priorities'; 'personal and religious convictions'; 'addiction concerns'; 'influence of others' values'; 'awareness of the odds'; 'lack of access, opportunity, or skill'; and 'emotional distress'. | **Knowledge gap**
Need for design and evaluation of preventative strategies for gambling disorder |
| Reardon et al. (2019)

USA | Cross-sectional research | To examine personality factors associated with adolescent gambling | Findings indicated that sensation seeking had the greatest predictive ability for problem gambling. The importance of sensation seeking as a vulnerability among adolescents with respect to developing problem with gambling, is emphasised. | **Knowledge gap [sub-groups]**
Further research is needed for each age group, and longitudinal research spanning several developmental periods is needed |
| Rider et al. (2019) | Cross-sectional research | To examine gambling behaviours among | TGD-male assigned at birth had higher gambling participation and prevalence of problem gambling | **Knowledge gap [sub-groups/vulnerable groups]**
More research is needed for vulnerable sub-groups of adolescent |

| | | | | |
|---|---|---|---|---|
| USA | | transgender gender diverse (TGD) and cisgender adolescents | then female at birth assigned TGD adolescents. Both male and female assigned at birth TGD adolescents had higher problem gambling than cisgender males and females. | gamblers along with the development and evaluation of targeted intervention programs. |
| Sancartier et al. (2019)<br><br>Canada | Cross-sectional research | To examine gambling behaviour among young adults aged 19 to 20 years | Male problem gambler reported lack of social support as barrier to recovery, females reported relying more on escape and avoidance behaviours. Being male increased the odds of being a moderate/high risk problem gambler by 25 times. Higher alcohol use among high risk problem gambling males. Low risk gambling was associated with drug use but not high-risk gambling. | **Knowledge gap [sub-groups of gamblers and intervention programs]**<br>Intervention programs are needed to target different groups of gamblers: low risk and high risk. Also, more research is needed to investigate how gender and problem gambling severity interact. |
| Sarti & Triventi (2017)<br><br>Italy | Cross-sectional research | To examine the acceptability of gambling activities and compare social factors with psychological factors | Results suggest social factors more influential than psychological factors. | **Knowledge gap [More research in general]**<br>Further research needed concerning the influence of social norms which may influence young peoples' acceptance of gambling as a legitimate activity. Longitudinal research is needed. |
| Savolainen et al. (2019)<br><br>Finland | Cross-sectional research | To examine the role of perceived social support and peer group identification in problem gambling | Adolescents who identified more strongly with online peer groups were more likely to have gambling problems than those who identified with offline peers. Adolescents with offline peers has lower problem gambling. Perceived social supports moderated these effects. | **Knowledge gap**<br>Longitudinal research required. Further research is needed to examine the role of social support and the specific type of social support e.g. family vs friends, peers. |
| Sharman et al. (2019a)<br><br>UK | Cross-sectional research | To investigate psychosocial correlates in treatment seeking problem gamblers | Results indicated that the younger age of gambling participation, the more severe the gambling problem was. Those who began gambling early were also more likely to abuse drugs, commit crime or have histories of violent behaviour, less likely to report a positive family upbringing environment and more likely to have a parent with a gambling and or drug/alcohol problem. | **Knowledge gap [ more research in general]**<br>More research is needed to examine the nature of these associations: poor family environment, gambling participation at an earlier age, and their association with problem gambling. |
| Sharman et al. (2019)<br><br>UK | Literature review | To review psychosocial factors in disordered gambling among vulnerable populations | Young people and adolescents were one of the seven identified vulnerable groups. Risk factors for young people comprised being male, parents that gamble, friends that gamble, lower family connectedness, being an only child, student employment, being an immigrant/foreign nationality, low grades at school, absence of food in house, major negative life events, history sexual abuse, child maltreatment and depression anxiety, | **Knowledge gap**<br>Research needed to examine transgenerational risk of problem gambling |

| | | | and involvement in competitive sports and video games with simulated gambling, exposure to gambling advertising. | |
|---|---|---|---|---|
| Sirola et al. (2019)<br><br>Finland | Cross-sectional research | To investigate loneliness and online gambling-community participation of young social media users | Results indicated that loneliness moderated the association between daily gambling online gambling community participation (e.g. a Facebook group) and excessive gambling. | **Knowledge gap**<br>Research is needed to understand emerging group processes within online social communities, and communities' significance in their users' everyday life, and to investigate how an increased understanding can be utilised in a harm-reductive manner. |
| Spangberg & Svensson (2020)<br><br>Finland | Cross-sectional | To compare gambling activity among 16-year-olds in Finland, Denmark, Iceland, Norway and Sweden | Cross-country differences found, Sweden lowest rate, parental monitoring a protective factor | **Knowledge gap**<br>More research is needed on social, economic and cultural factors associated with gambling involvement and problem gambling. |
| Tagoe et al. 2018<br><br>Africa | Qualitative research | To examine the understanding, initiation, and perceived benefits of gambling | Participants variously perceived betting on sports as a game that involves chance, money, and electronic gadgets. The perceived benefits of gambling included money, socialization, positive emotion, expression of knowledge, and love of football. Gamblers reported gambling helped to manage stress. | **Method gap [Intervention programs]**<br>Further research on the development and evaluation of programs which educate youth on adaptive coping strategies and the need for policies and programs to provide better alternatives to youth unemployment |
| Tara et al. (2016)<br><br>Canada | Cross-sectional research | To examine internet and land-based gambling among adolescents | The overall prevalence of online gambling among all adolescents was 9.4 %, the most common form was sports. Gambling online is common among adolescents despite restrictions. | **Knowledge gap [Intervention programs]**<br>Development and evaluation of intervention programs needed |
| Vitaro et al. (2019)<br><br>Canada | Longitudinal twin study | To examine gambling behaviour and substance use during late adolescence in a genetically informed twin study | Findings indicate that common genetic factors largely accounted for gambling participation and substance use at ages 17 and 19. Substance use and gambling participation share a common genetic component that account for their concurrent longitudinal links during late adolescence. | **Knowledge gap**<br>Future research is needed to examine what specific phenotypes may be associated with development of gambling participation and substance use. |
| Walters (2020)<br><br>USA | Cross-sectional research | To examine the relationships between parental gambling, child gambling and child delinquency | The association between child delinquency and gambling participation grew in proportion to the strength of parental participation in gambling activities. | **Knowledge gap [longitudinal research]**<br>Longitudinal research is needed to confirm these findings and establish causal direction of variables. |
| Wardel (2019)<br><br>UK | Literature review | To review qualitative research on youth gambling | Studies on perceptions highlighted the normalisation of gambling among youth and its embeddedness in everyday life. The review indicates young people's perceptions of gambling differ from legal and legislative definitions, which risks underestimating the nature and extent of | **Knowledge gap**<br>More research needed to increase our understanding of how technology shapes young peoples' perceptions and attitudes, and how, aside from accessibility, the how the techno-ecosystem leads to involvement and risky gambling |

| | | | youth gambling. | |
|---|---|---|---|---|
| Weinberger et al. (2017)  USA | Experimental design study | To explore gambling behaviours and attitudes among adolescents and relationship with smoking status | At risk problem gamblers were more likely to be smokers and report parental approval of gambling. | **Knowledge gap** Further longitudinal research is needed to examine the influence of peer involvement on the occurrence of gambling and smoking among high school students. |
| Wu et al. (2019)  Hong Kong | Cross-sectional research | To examine social beliefs and their influence on adolescents' propensity to gamble | The results provide evidence for the importance of social beliefs in formulating specific gambling cognitions and gambling behaviours. | **Knowledge gap [intervention programs]** The findings need to replicate with a larger representative sample. Findings can be used to inform treatment programs for adolescents. |
| Yu & Fu (2019)  Hong Kong | Cross-sectional research | To examine the relationships between disordered gambling, internet gaming addiction, and illusory control | Results suggested that non-gambling-related internet usage was not related to disordered gambling and using the internet for gambling related activities (gathering information – not gambling) was related to disordered gambling. | **Knowledge gap** More research needed to examine the relationship between loot boxes and gambling |
| Yu & Ma (2019)  Hong Kong | Literature review | To review the literature on youth gambling in Hong Kong | Parental problem gambling is positively related to children's gambling and mental health (depression anxiety stress). | **Knowledge gap [vulnerable groups]** Most youth studies use secondary school samples. More research is needed to examine 'hidden' youth who may be at greater risk. |
| Zhai et al. (2020)  USA | Cross-sectional research | To examine substance use, gambling, and violence among adolescents | Gambling participation past 12 months was associated with drug use and violence including carrying weapon and fighting for both males and females. | **Knowledge gap** More research needs to examine link between delinquent behaviour and problem gambling. |
| Zhai et al. (2019)  USA | Cross-sectional research | To investigate the relationship between weapon carrying and problem gambling among high school students in USA | Weapon carriers had higher prevalence at risk problem gambling, greater parental approval of gambling, greater permissive gambling cognitions, and more family concerns compared to non-weapon carriers. | **Knowledge gap** More research is needed to examine relationship between violence and gambling among adolescents. Development of targeted interventions are needed for at risk youth. |

# Supplementary File 3: Database Search Outputs

**Original Search**

**DATABASE 1: MEDLINE**

Search Strategy: Medline

| # | Searches | Results |
|---|----------|---------|
| 1 | GAMBLING/ | 4899 |
| 2 | ((patholog* or problem* or addict* or compulsiv* or impulsive* or crav* or disorder*) adj7 gambl*).tw,kw. | 4097 |
| 3 | (ludomania or ludopath*).tw,kw. | 3 |
| 4 | (gambl* or betting or wagering or pokie* or lotter* or casino* or keno).tw,tw. | 9907 |
| 5 | (machine adj3 (gaming or fruit or slot)).tw,tw. | 283 |
| 6 | (video* and lotteri*).tw,kw. | 8 |
| 7 | 1 or 2 or 3 or 4 or 5 or 6 or 7 | 11481 |
| 8 | Video Games | 1041 |
| 9 | 7 and 8 | 60 |
| 10 | 7 or 9 | 11481 |
| 11 | (treat* or efficacy or effect* or "harm minimisation" or "responsible gambling" or attitude* or behavio?r* or prevalence or population or harm or policy or regulation).tw,kw. | 11316517 |
| 12 | BEHAVIOR THERAPY/ | 26395 |
| 13 | Harm Reduction/ | 2499 |
| 14 | Treatment Outcome/ | 866652 |
| 15 | SELF EFFICACY/ | 17633 |
| 16 | PSYCHIATRIC REHABILITATION/ or REHABILITATION/ | 17900 |
| 17 | "PATIENT ACCEPTANCE OF HEALTH CARE"/ | 40306 |

| 18 | Public Opinion/ | 17737 |
|---|---|---|
| 19 | INTENTION/ | 9689 |
| 20 | Therapeutics/ | 8323 |
| 21 | TECHNOLOGY/ or INFORMATION TECHNOLOGY/ | 8802 |
| 22 | ((trend* or emerg* or future* or interactive or innovat*) and technolog*).tw,kw. | 94461 |
| 23 | PREVALENCE/ or Prevalence.tw,kw. | 624596 |
| 24 | Public Health/ or Public Health Administration/ or Public Health Practice/ or exp public policy/ or Community Health Services/ or Community health planning/ or Health Promotion/ | 297039 |
| 25 | (public adj2 (health or policy or policies)).tw,kw. | 212479 |
| 26 | 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 | 11918216 |
| 27 | 8 and 24 | 8194 |
| 28 | limit 25 to (english language and humans and yr="2015 -Current") | 1119 |

**DATABASE 2: Emcare**

Database(s): Ovid Emcare 1995 to 2018 week 40
Search Strategy:

| # | Searches | Results |
|---|---|---|
| 1 | gambling/ | 1141 |
| 2 | pathological gambling/ | 2790 |
| 3 | ((patholog* or problem* or addict* or compulsiv* or impulsive* or crav* or disorder*) adj7 gambl*).tw,kw. | 2455 |
| 4 | (ludomania or ludopath*).tw,kw. | 0 |
| 5 | (gambl* or betting or wagering or pokie* or lotter* or casino* or keno).tw,tw. | 5571 |
| 6 | (machine adj3 (gaming or fruit or slot)).tw,tw. | 163 |
| 7 | (video* and lotteri*).tw,kw. | 6 |
| 8 | or/1-7 | 5959 |

| 9 | video game/ | 833 |
|---|---|---|
| 10 | 9 and 8 | 12 |
| 11 | 10 or 8 | 5959 |
| 12 | (treat* or efficacy or effect* or "harm minimisation" or "responsible gambling" or attitude* or behavio?r* or prevalence or population or harm or policy or regulation).tw,kw. | 2649891 |
| 13 | behavior therapy/ | 14483 |
| 13 | harm reduction/ | 3804 |
| 14 | treatment outcome/ | 211803 |
| 15 | self concept/ | 38547 |
| 16 | psychosocial rehabilitation/ or rehabilitation/ | 49006 |
| 17 | "PATIENT ACCEPTANCE OF HEALTH CARE"/ | 22715 |
| 18 | public opinion/ | 4138 |
| 13 | behavior/ | 24459 |
| 20 | therapy/ | 134539 |
| 21 | technology/ | 56811 |
| 22 | information technology/ | 9465 |
| 23 | ((trend* or emerg* or future* or interactive or innovat*) and technolog*).tw,kw. | 36419 |
| 24 | PREVALENCE.tw,kw. or prevalence/ | 247143 |
| 25 | public health/ | 81248 |
| 26 | public health service/ | 24851 |
| 27 | exp policy/ | 70928 |
| 28 | community care/ | 21217 |
| 29 | health care planning/ | 33055 |
| 30 | health promotion/ | 42165 |
| 31 | (public adj2 (health or policy or policies)).tw,kw. | 101970 |

| #  | Searches | Results |
|----|----------|---------|
| 32 | or/12-31 | 2965641 |
| 32 | 11 and 32 | 4545 |
| 33 | limit 33 to (human and english language and yr="2015 -Current") | 1119 |

**DATABASE 3: PsycInfo**

Search Strategy:

| #  | Searches | Results |
|----|----------|---------|
| 1  | gambling/ or pathological gambling/ | 7203 |
| 2  | ((patholog* or problem* or addict* or compulsiv* or impulsive* or crav* or disorder*) adj7 gambl*).ti,ab,id. | 6012 |
| 3  | (ludomania or ludopath*).ti,ab,id. | 5 |
| 4  | (gambl* or betting or wagering or pokie* or lotter* or casino* or keno).ti,ab,id. | 12861 |
| 5  | (machine adj3 (gaming or fruit or slot)).ti,ab,id. | 433 |
| 6  | (video* and lotteri*).ti,ab,id. | 13 |
| 7  | or/1-6 | 19411 |
| 8  | computer games/ | 6574 |
| 9  | 7 and 8 | 193 |
| 10 | 7 or 9 | 13030 |
| 11 | (treat* or efficacy or effect* or "harm minimisation" or "responsible gambling" or attitude* or behavio?r* or prevalence or population or harm or policy or regulation).ti,ab,id. | 2552130 |
| 12 | Behavior Therapy/ | 13407 |
| 13 | Harm Reduction/ | 2914 |
| 14 | Treatment Outcomes/ | 31374 |
| 15 | Self-Efficacy/ | 20528 |
| 16 | rehabilitation/ | 18612 |

| 17 | Public Opinion/ | 8054 |
|---|---|---|
| 18 | intention/ or behavioral intention/ | 14815 |
| 19 | technology/ or information technology/ | 42661 |
| 20 | ((trend* or emerg* or future* or interactive or innovat*) and technolog*).ti,ab,id. | 35497 |
| 21 | PREVALENCE.ti,ab,id. | 105331 |
| 22 | Public Health/ | 19386 |
| 23 | exp Government Policy Making/ | 41424 |
| 24 | community services/ or community mental health services/ or public health services/ | 25984 |
| 25 | health promotion/ | 22763 |
| 26 | (public adj2 (health or policy or policies)).ti,ab,id. | 56536 |
| 27 | or/11-26 | 2631790 |
| 28 | 10 and 27 | 9985 |
| 29 | limit 28 to (human and english language and yr="2015 -Current") | 2260 |

**DATABASE 4: Proquest: Health & Medicine databases**

ab((((patholog* OR problem* OR addict* OR compulsiv* OR impulsive* OR crav* OR disorder*) NEAR/6 gambl*) OR ludomania OR ludopath* OR gambl* OR betting OR wagering OR pokie* OR lotter* OR casino* OR keno OR (machine NEAR/2 (gaming OR fruit OR slot)) OR (video* AND lotteri*)) AND ((treat* OR efficacy OR effect* OR "harm minimisation" OR "responsible gambling" OR attitude* OR behavio*r* OR prevalence OR population OR harm OR policy OR regulation OR ((trend* OR emerg* OR future* OR interactive OR innovat*) AND technolog*) OR (public NEAR/1 (health OR policy OR policies))))) AND (pd(20150101-20190201) AND PEER(yes))  or ti((((patholog* OR problem* OR addict* OR compulsiv* OR impulsive* OR crav* OR disorder*) NEAR/6 gambl*) OR ludomania OR ludopath* OR gambl* OR betting OR wagering OR pokie* OR lotter* OR casino* OR keno OR (machine NEAR/2 (gaming OR fruit OR slot)) OR (video* AND lotteri*)) AND ((treat* OR efficacy OR effect* OR "harm minimisation" OR "responsible gambling" OR attitude* OR behavio*r* OR prevalence OR population OR harm OR policy OR regulation OR ((trend* OR emerg* OR future* OR interactive OR innovat*) AND technolog*) OR (public NEAR/1 (health OR policy OR policies))))) AND (pd(20150101-20190201) AND PEER(yes))

**n=1,388**

**DATABASE 5: Web of Science**

| # | Count | Query |
|---|---|---|
| #9 | 4,317 | (#4 OR #2 OR #1) *AND* **LANGUAGE:** (English)<br>*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=2015-2018* |
| #8 | 7,289,985 | #7 OR #6 OR #5<br>*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=1900-2018* |
| #7 | 56,522 | TI=((public NEAR/1 (health OR policy OR policies)))<br>*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=1900-2018* |
| #6 | 26,268 | TI=(((trend* OR emerg* OR future* OR interactive OR innovat*) AND technolog*))<br>*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=1900-2018* |
| #5 | 7,227,506 | TI=((treat* OR efficacy OR effect* OR "harm minimisation" OR "responsible gambling" OR attitude* OR behavio* OR prevalence OR population OR harm OR policy OR regulation))<br>*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=1900-2018* |
| #4 | 3 | TI=((video* AND lotteri*))<br>*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=1900-2018* |
| #3 | 648 | TI=((machine NEAR/2 (gaming OR fruit OR slot)))<br>*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=1900-2018* |
| #2 | 18,223 | TI=(ludomania OR ludopath* OR gambl* OR betting OR wagering OR pokie* OR lotter* OR casino* OR keno)<br>*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=1900-2018* |
| #1 | 3,261 | TI=(((patholog* OR problem* OR addict* OR compulsiv* OR impulsive* OR crav* OR disorder*) NEAR/6 gambl*))<br>*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=1900-2018* |

**n=975**

**DATABASE 6: Scopus**

(((patholog* OR problem* OR addict* OR compulsiv* OR impulsive* OR crav* OR disorder*) NEAR/6 gambl*) OR ludomania OR ludopath* OR gambl* OR betting OR wagering OR pokie* OR lotter* OR casino* OR keno OR (machine NEAR/2 (gaming OR fruit OR slot)) OR (video* AND lotteri*)) AND (treat* OR efficacy OR effect* OR "harm minimisation" OR "responsible gambling" OR attitude* OR behavio* OR prevalence OR population OR harm OR policy OR regulation OR ((trend* OR emerg* OR future* OR interactive OR innovat*) AND technolog*) OR (public NEAR/1 (health OR policy OR policies)))

**n=4,137**

# Updated Search Example Output (Repeated across databases)

**DATABASE 1: MEDLINE**

Search Strategy:

| # | Searches | Results |
|---|----------|---------|
| 1 | Gambling/ | 5534 |
| 2 | ((patholog* or problem* or addict* or compulsiv* or impulsive* or crav* or disorder*) adj7 gambl*).tw,kw. | 4769 |
| 3 | (ludomania or ludopath*).tw,kw. | 3 |
| 4 | (gambl* or betting or wagering or pokie* or lotter* or casino* or keno).tw,tw. | 11435 |
| 5 | (machine adj3 (gaming or fruit or slot)).tw,tw. | 318 |
| 6 | (video* and lotteri*).tw,kw. | 8 |
| 7 | or/1-6 | 12099 |
| 8 | Video Games/ | 5474 |
| 9 | 7 and 8 | 203 |
| 10 | 7 or 9 | 12099 |
| 11 | (treat* or efficacy or effect* or "harm minimisation" or "responsible gambling" or attitude* or behavio?r* or prevalence or population or harm or policy or regulation).tw,kw. | 12657514 |
| 12 | behavior therapy/ | 27938 |
| 13 | harm reduction/ | 3125 |
| 14 | Treatment Outcome/ | 978524 |
| 15 | self efficacy/ | 20388 |
| 16 | psychiatric rehabilitation/ or rehabilitation/ | 18649 |
| 17 | "patient acceptance of health care"/ | 47097 |
| 18 | public opinion/ | 18643 |
| 19 | intention/ | 11455 |
| 20 | therapeutics/ | 8472 |
| 21 | technology/ or information technology/ | 9961 |
| 22 | ((trend* or emerg* or future* or interactive or innovat*) and technolog*).tw,kw. | 117855 |
| 23 | Prevalence/ or prevalence.tw,kw. | 716058 |
| 24 | Public Health/ or Public Health Administration/ or Public Health Practice/ or exp public policy/ or Community Health Services/ or Community health planning/ or Health Promotion/ | 321137 |
| 25 | (public adj2 (health or policy or policies)).tw,kw. | 251642 |
| 26 | or/11-25 | 13321568 |

| 27 | 10 and 26 | 8770 |
|----|-----------|------|
| 28 | limit 27 to (english language and humans and yr="2019 -Current") | 465 |
| 29 | (elderly or old or aged or geriatrics).mp. | 6136534 |
| 30 | 28 not 29 | 272 |

**DATABASE 2: Emcare**

Database(s): **Ovid Emcare** 1995 to 2020 Week 34
Search Strategy:

| # | Searches | 286Results |
|---|----------|------------|
| 1 | gambling/ | 1861 |
| 2 | pathological gambling/ | 3161 |
| 3 | ((patholog* or problem* or addict* or compulsiv* or impulsive* or crav* or disorder*) adj7 gambl*).tw,kw. | 3159 |
| 4 | (ludomania or ludopath*).tw,kw. | 1 |
| 5 | (gambl* or betting or wagering or pokie* or lotter* or casino* or keno).tw,tw. | 6892 |
| 6 | (machine adj3 (gaming or fruit or slot)).tw,tw. | 204 |
| 7 | (video* and lotteri*).tw,kw. | 6 |
| 8 | video game/ | 1599 |
| 9 | or/1-7 | 7355 |
| 10 | 8 and 9 | 43 |
| 11 | 10 or 9 | 7355 |
| 12 | (treat* or efficacy or effect* or "harm minimisation" or "responsible gambling" or attitude* or behavio?r* or prevalence or population or harm or policy or regulation).tw,kw. | 3175763 |
| 13 | behavior therapy/ | 15352 |
| 14 | harm reduction/ | 4938 |
| 15 | treatment outcome/ | 230477 |
| 16 | self concept/ | 44415 |
| 17 | psychosocial rehabilitation/ or rehabilitation/ | 53418 |
| 18 | "PATIENT ACCEPTANCE OF HEALTH CARE"/ | 25254 |
| 19 | public opinion/ | 4536 |
| 20 | behavior/ | 28051 |

| 21 | therapy/ | 134293 |
|---|---|---|
| 22 | technology/ | 28757429 |
| 23 | information technology/ | 28810510 |
| 24 | ((trend* or emerg* or future* or interactive or innovat*) and technolog*).tw,kw. | 28946134 |
| 25 | PREVALENCE.tw,kw. or prevalence/ | 290300674 |
| 26 | public health/ | 29197074 |
| 27 | public health service/ | 29227797 |
| 28 | exp policy/ | 293156873 |
| 29 | community care/ | 23219 |
| 30 | health care planning/ | 36714 |
| 31 | health promotion/ | 47826 |
| 32 | (public adj2 (health or policy or policies)).tw,kw. | 129522 |
| 33 | or/12-32 | 3552424 |
| 34 | 11 and 33 | 5736 |
| 35 | limit 34 to (human and english language and yr="2019 -Current") | 784 |
| 36 | (elderly or old or aged or geriatrics).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword] | 1244435 |
| 37 | 35 not 36 | 650 |

**DATABASE 3: PsycInfo**

Database(s): **APA PsycInfo** 1806 to August Week 3 2020
Search Strategy:

| # | Searches | Results |
|---|---|---|
| 1 | gambling/ or pathological gambling/ | 7951 |
| 2 | ((patholog* or problem* or addict* or compulsiv* or impulsive* or crav* or disorder*) adj7 gambl*).ti,ab,id. | 6755 |
| 3 | (ludomania or ludopath*).ti,ab,id. | 5 |
| 4 | (gambl* or betting or wagering or pokie* or lotter* or casino* or keno).ti,ab,id. | 14252 |
| 5 | (machine adj3 (gaming or fruit or slot)).ti,ab,id. | 480 |
| 6 | (video* and lotteri*).ti,ab,id. | 13 |
| 7 | computer games/ | 7569 |
| 8 | or/1-6 | 14432 |
| 9 | 8 and 7 | 240 |
| 10 | 8 or 9 | 14432 |
| 11 | (treat* or efficacy or effect* or "harm minimisation" or "responsible gambling" or attitude* or behavio?r* or prevalence or population or harm or policy or regulation).ti,ab,id. | 2754253 |
| 12 | Behavior Therapy/ | 14018 |
| 13 | Harm Reduction/ | 3299 |
| 14 | Treatment Outcomes/ | 34123 |
| 15 | Self-Efficacy/ | 22966 |
| 16 | rehabilitation/ | 20033 |
| 17 | Public Opinion/ | 8598 |
| 18 | intention/ or behavioral intention/ | 16844 |
| 19 | technology/ or information technology/ | 46212 |
| 20 | ((trend* or emerg* or future* or interactive or innovat*) and technolog*).ti,ab,id. | 40624 |
| 21 | PREVALENCE.ti,ab,id. | 117280 |
| 22 | Public Health/ | 21637 |
| 23 | exp Government Policy Making/ | 51188 |
| 24 | community services/ or community mental health services/ or public health services/ | 27268 |
| 25 | health promotion/ | 24840 |
| 26 | (public adj2 (health or policy or policies)).ti,ab,id. | 64174 |
| 27 | or/11-26 | 2843944 |

| 28 | 10 and 27 | 11186 |
|---|---|---|
| 29 | limit 28 to (human and english language and yr="2019 -Current") | 594 |
| 30 | (elderly or old or aged or geriatrics).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh] | 675372 |
| 31 | 29 not 30 | 549 |

**DATABASE 4:**

SH Psychosocial rehabilitation used for Psychiatric rehabilitation
SH not available Public Health Practice or Community health planning

| # | Query | Limiters/Expanders | Results |
|---|---|---|---|
| S35 | S33 NOT S34 | Limiters - Published Date: 20190101-20201231; English Language<br>Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 510 |
| S34 | TX elderly OR old OR aged OR geriatrics | Limiters - Published Date: 20190101-20201231; English Language<br>Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 130,804 |
| S33 | S10 AND S31 | Limiters - Published Date: 20190101-20201231; English Language<br>Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 687 |
| S32 | S10 AND S31 | Expanders - Apply equivalent subjects | 5,699 |

| | | Search modes - Boolean/Phrase | |
|---|---|---|---|
| S31 | S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 2,736,385 |
| S30 | TI ( (public N1 (health or policy or policies)) ) OR AB ( (public N1 (health or policy or policies)) ) | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 95,974 |
| S29 | (MH "Health Promotion") | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 66,349 |
| S28 | (MH "Community Health Services") | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 21,300 |
| S27 | (MH "Public Policy+") | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 106,900 |
| S26 | (MH "Public Health Administration") | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 5,157 |
| S25 | (MH "Public Health") | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 48,676 |
| S24 | TI Prevalence OR AB Prevalence | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 180,300 |

| S23 | (MH "Prevalence") | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 92,957 |
|---|---|---|---|
| S22 | TI ( ((trend* or emerg* or future* or interactive or innovat*) and technolog*) ) OR AB ( ((trend* or emerg* or future* or interactive or innovat*) and technolog*) ) | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 29,803 |
| S21 | (MH "Information Technology") | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 13,959 |
| S20 | (MH "Technology") | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 17,857 |
| S19 | (MH "Therapeutics") | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 4,016 |
| S18 | (MH "Intention") | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 7,568 |
| S17 | (MH "Public Opinion") | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 8,111 |
| S16 | (MH "Rehabilitation") OR (MH "Rehabilitation, Psychosocial") | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 19,395 |
| S15 | (MH "Self-Efficacy") | Expanders - Apply equivalent subjects | 21,237 |

| | | Search modes - Boolean/Phrase | |
|---|---|---|---|
| S14 | (MH "Treatment Outcomes") | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 346,840 |
| S13 | (MH "Harm Reduction") | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 3,996 |
| S12 | (MH "Behavior Therapy") | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 10,945 |
| S11 | TI ( treat* or efficacy or effect* or "harm minimisation" or "responsible gambling" or attitude* or behavior* OR behaviour* or prevalence or population or harm or policy or regulation) ) OR AB ( treat* or efficacy or effect* or "harm minimisation" or "responsible gambling" or attitude* or behavior* OR behaviour* or prevalence or population or harm or policy or regulation) ) | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 2,374,732 |
| S10 | S7 OR S9 | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 5,699 |
| S9 | S7 AND S8 | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 128 |
| S8 | (MH "Video Games") | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 4,637 |
| S7 | S1 OR S2 OR S3 OR S4 OR S5 OR S6 | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 5,699 |

| | | Expanders | |
|---|---|---|---|
| S6 | TI ( (video* AND lotteri*) ) OR AB ( (video* AND lotteri*) ) | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 1 |
| S5 | TI ( (machine N2 (gaming OR fruit OR slot)) ) OR AB ( (machine N2 (gaming OR fruit OR slot)) ) | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 212 |
| S4 | TI ( (gambl* or betting or wagering or pokie* or lotter* or casino* or keno) ) OR AB ( (gambl* or betting or wagering or pokie* or lotter* or casino* or keno) ) | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 5,228 |
| S3 | TI ( ludomania OR ludopath* ) OR AB ( ludomania OR ludopath* ) | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 0 |
| S2 | TI ( ((patholog* or problem* or addict* or compulsiv* or impulsive* or crav* or disorder*) N6 gambl*) ) OR AB ( ((patholog* or problem* or addict* or compulsiv* or impulsive* or crav* or disorder*) N6 gambl*) ) | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 2,320 |
| S1 | (MH "Gambling") | Expanders - Apply equivalent subjects<br>Search modes - Boolean/Phrase | 3,113 |

**DATABASE 5: Proquest**

Search Line one:
ab((((patholog* OR problem* OR addict* OR compulsiv* OR impulsive* OR crav* OR disorder*) NEAR/6 gambl*) OR ludomania OR ludopath* OR gambl* OR betting OR wagering OR pokie* OR lotter* OR casino* OR keno OR (machine NEAR/2 (gaming OR fruit OR slot)) OR (video* AND lotteri*)) AND ((treat* OR efficacy OR effect* OR "harm minimisation" OR "responsible gambling" OR attitude* OR behavio*r* OR prevalence OR population OR harm OR policy OR regulation OR ((trend* OR emerg* OR future* OR interactive OR innovat*) AND technolog*) OR (public NEAR/1 (health OR policy OR policies))))) AND (pd(20190101-20200201) AND PEER(yes)) or ti((((patholog* OR problem* OR addict* OR compulsiv* OR impulsive* OR crav* OR disorder*) NEAR/6 gambl*) OR ludomania OR ludopath* OR gambl* OR betting OR wagering OR pokie* OR lotter* OR casino* OR keno OR (machine NEAR/2 (gaming OR fruit

OR slot)) OR (video* AND lotteri*)) AND ((treat* OR efficacy OR effect* OR "harm minimisation" OR "responsible gambling" OR attitude* OR behavio*r* OR prevalence OR population OR harm OR policy OR regulation OR ((trend* OR emerg* OR future* OR interactive OR innovat*) AND technolog*) OR (public NEAR/1 (health OR policy OR policies))))) AND (pd(20190101-20200201) AND PEER(yes))

Search line 2
NOT (elderly OR old OR aged OR geriatrics)


**DATABASE 6: Scopus**

( ( TITLE-ABS-KEY ( ( ( ( patholog* OR problem* OR addict* OR compulsiv* OR impulsive* OR crav* OR disorder* ) W/6 gambl* ) OR ludomania OR ludopath* OR gambl* OR betting OR wagering OR pokie OR lotter* OR casino* OR keno OR ( machine W/2 ( gaming OR fruit OR slot ) ) OR video* AND lotteri* ) ) ) AND ( TITLE-ABS-KEY ( ( treat* OR efficacy OR effect* OR "harm minimisation" OR "responsible gambling" OR attitude* OR behavio*r OR prevalence OR population OR harm OR policy OR regulation OR ( ( trend* OR emerg* OR future* OR interactive OR innovat* ) AND technolog* ) OR ( public W/1 ( health OR policy OR policies ) ) ) ) ) ) ) AND NOT ( ALL ( elderly OR old OR aged OR geriatrics ) ) AND ( LIMIT-TO ( PUBYEAR , 2020 ) OR LIMIT-TO ( PUBYEAR , 2019 ) ) AND ( LIMIT-TO ( LANGUAGE , "English" ) )