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Exploring the prevalence of gaming disorder and internet gaming disorder: a rapid scoping review

Final Report

Prepared for the World Health Organization

A full version of this work will be submitted to a peer-reviewed journal.

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Authors:

Nazia Darvesh, Amruta Radhakrishnan, Chantelle C. Lachance, Vera Nincic, Jane P. Sharpe, Marco Ghassemi, Sharon E. Straus, Andrea C. Tricco

On behalf of the SPOR Evidence Alliance

Contact:

Dr. Andrea C. Tricco

E: TriccoA@smh.ca

T: 416-864-6060 ext. 77521

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The information in this report is a summary of available material and is designed to give readers (health systems stakeholders, policy and decision makers) a starting point in considering currently available research evidence. Other relevant scientific findings may have been reported since completion of the review. This report is current to the date of publication and may be superseded by an updated publication on the same topic. You should consult other sources in order to confirm the currency, accuracy and completeness of the information contained in this publication and, in the event that medical treatment is required you should take professional expert advice from a legally qualified and appropriately experienced medical practitioner.

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For questions about this report, please contact:

Dr. Andrea C. Tricco

Knowledge Translation Program
Li Ka Shing Knowledge Institute
St. Michael's Hospital
Unity Health Toronto

Email: TriccoA@smh.ca

Phone: 416-864-6060 ext. 77521

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Abbreviations

| | |
|------------|--------------------------------------------------------------------------------------------------|
| C-IGDS | Chinese Internet Gaming Disorder Scale |
| C-VAT | Clinical Video game Addiction Test |
| DQVMIA | Diagnostic Questionnaires for Video Games, Mobile Phone or Internet Addiction |
| DSM-5 | Diagnostic and Statistical Manual of Mental Disorders, fifth edition |
| GAIT | The Gaming Addiction Identification Test |
| GD | Gaming Disorder |
| ICD-11 | International Classification of Diseases, eleventh revision |
| IGD | Internet Gaming Disorder |
| IGDI | Internet Gaming Disorder Interview |
| IGDQ | Internet Gaming Disorder Questionnaire |
| IGDS-SF9 | Internet Gaming Disorder Scale – Short Form |
| IGDT-10 | Ten-Item Internet Gaming Disorder Test |
| PIE-9 | Personal Internet Gaming Disorder Evaluation |
| PRESS | Peer Review of Electronic Search Strategies |
| PRISMA-ScR | Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews |
| PVP Scale | Problematic Videogame Playing Scale |
| SCI-IGD | Structured Clinical Interview for Internet Gaming Disorder |
| VAT | Video game Addiction Test |
| VGA | Video Game Addiction |
| VGAQ | Video Game Addiction Questionnaire |
| WHO | World Health Organization |

INTRODUCTION AND OBJECTIVES

In 2013, the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) included internet gaming disorder (IGD) in the appendix of the fifth edition, indicating that it was a condition needing further study.¹ In 2018, gaming disorder (GD) was included in the eleventh revision of the International Classification of Diseases (ICD-11).^{2,3} The recent additions of these conditions to diagnostic guidelines were due to research showing the harmful effects of excessive gaming.² The World Health Organization (WHO) commissioned a rapid scoping review to describe the prevalence of IGD and GD. The objectives of the review were to synthesize evidence on i) the prevalence of GD and IGD in people of all ages, across all geographic areas, ii) the prevalence of GD and IGD in populations with severe GD or IGD (undergoing intervention) of all ages, across all geographic areas, and iii) the variables measured by researchers in the field, in populations with GD or IGD.

METHODS

The rapid scoping review methods were informed by the Joanna Briggs Institute's methodological guidance for scoping reviews and the reporting was guided by the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR).^{4,5} A protocol was developed *a priori* and the study was registered on the Open Science Framework⁶ on August 21, 2018 (<https://osf.io/y2sr6/>).

An experienced librarian developed the literature search strategy (**Appendix A**) and a second experienced librarian peer-reviewed the search strategy using the Peer Review of Electronic Search Strategies (PRESS) checklist.⁷ MEDLINE, Embase, PsycINFO, and the Cochrane library were searched by an experienced library technician for literature published from inception to July 2018. The WHO was also consulted for relevant literature.

After pilot testing samples of citations using a standardized form to ensure calibration of reviewers, the titles/abstracts of citations as well as full-text articles were each screened by one reviewer. We included quantitative primary studies of any design that applied ICD-11 GD criteria or DSM-5 IGD criteria, and that reported prevalence data or information on variables measured in populations with GD or IGD. Each excluded citation, during both the title/abstract and full-text screening stages, was screened by a second reviewer to confirm exclusion.

Qualitative studies, books, and case studies were excluded. Systematic reviews and non-English studies were not part of the review, however lists of potentially relevant systematic reviews and non-English studies are provided in **Appendix B** and **Appendix C**, respectively.

After pilot testing a sample of included studies using a standardized form, each included study was charted by one reviewer and verified by another, to capture relevant study, population, and outcome information. Consistent with the Joanna Briggs Institute's guide for scoping reviews and published



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scoping reviews on health-related topics, critical appraisal and quantitative analyses (i.e., meta-analysis) for included studies were not conducted.⁵

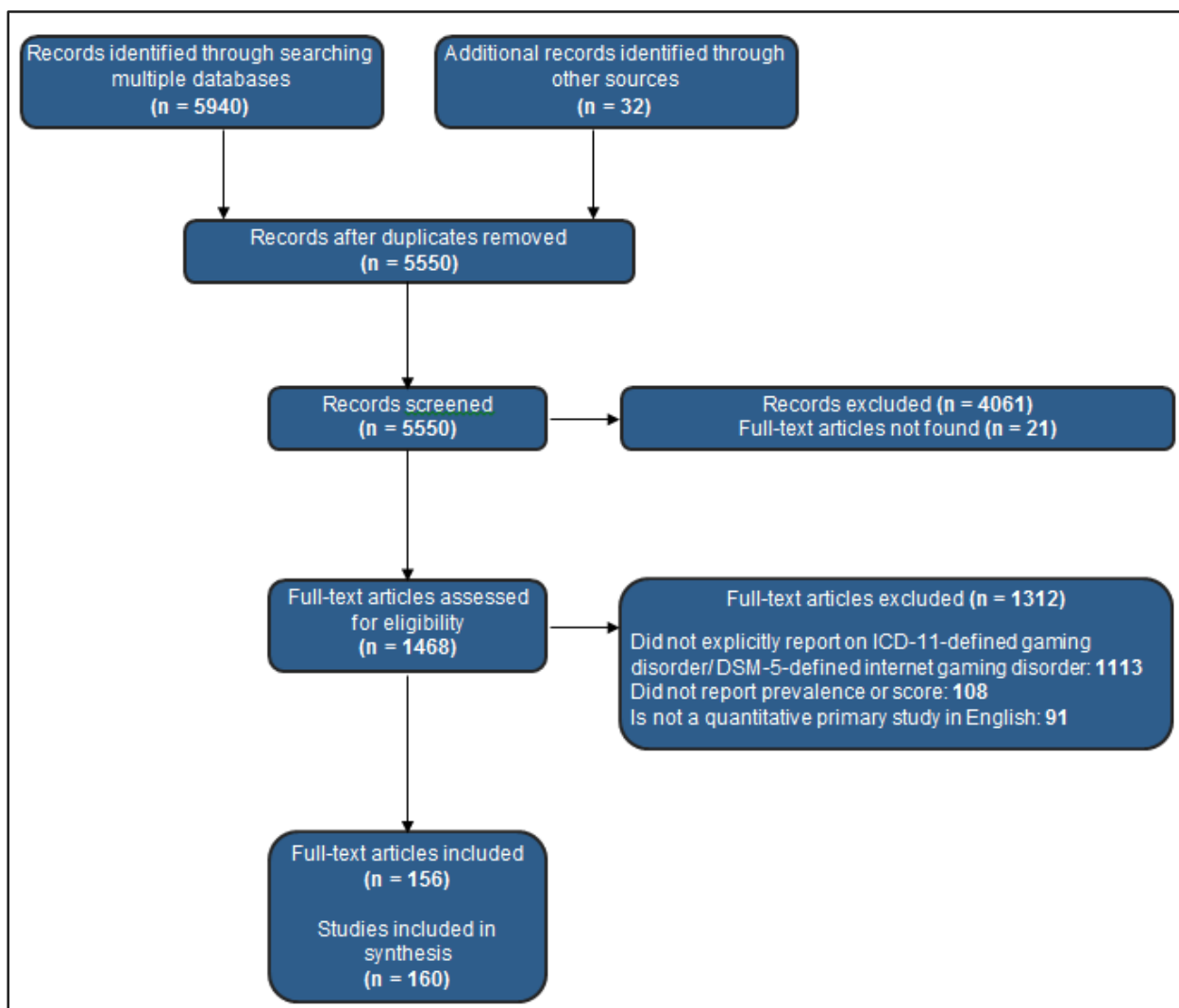
Prevalence or score data for GD or IGD were summarized in tables or as text for general, clinical (seeking treatment for GD or IGD, or had GD or IGD), and severe populations (all undergoing intervention for GD or IGD). The data were also summarized by WHO geographic regions⁸ (African Region, Eastern Mediterranean Region, European Region, Region of the Americas, South-East Asia Region, Western Pacific Region), gender/sex groups (as identified by authors of included studies), and age groups⁹ (children 0 to 19 years old, adolescents 10 to 19 years old, adults 18 years and older). Adolescent data were also included in the children group.

RESULTS

Study characteristics

The study flow is shown in **Figure 1** and the list of included studies is in **Appendix D**. We found 156 full-text articles that represented 160 studies (some full-text articles reported on multiple studies in the same article).

Figure 1. Study Flow



No eligible studies on GD were identified, which may be due to the fact that GD was added to ICD-11 in 2018. For the studies that reported on IGD, the majority were conducted in South Korea (n = 45), China (n = 29), USA (n = 20), Australia (n = 14), and Germany (n = 13). Twenty-six percent of all studies in the review (n = 42) were conducted in male-only populations.

Table 1 shows the different methods that were used to measure IGD. The IGD measures that were most common were application of the DSM-5 criteria, a health professional diagnosis, and the Internet Gaming Disorder Scale–Short-Form (IGDS-SF9).¹⁰

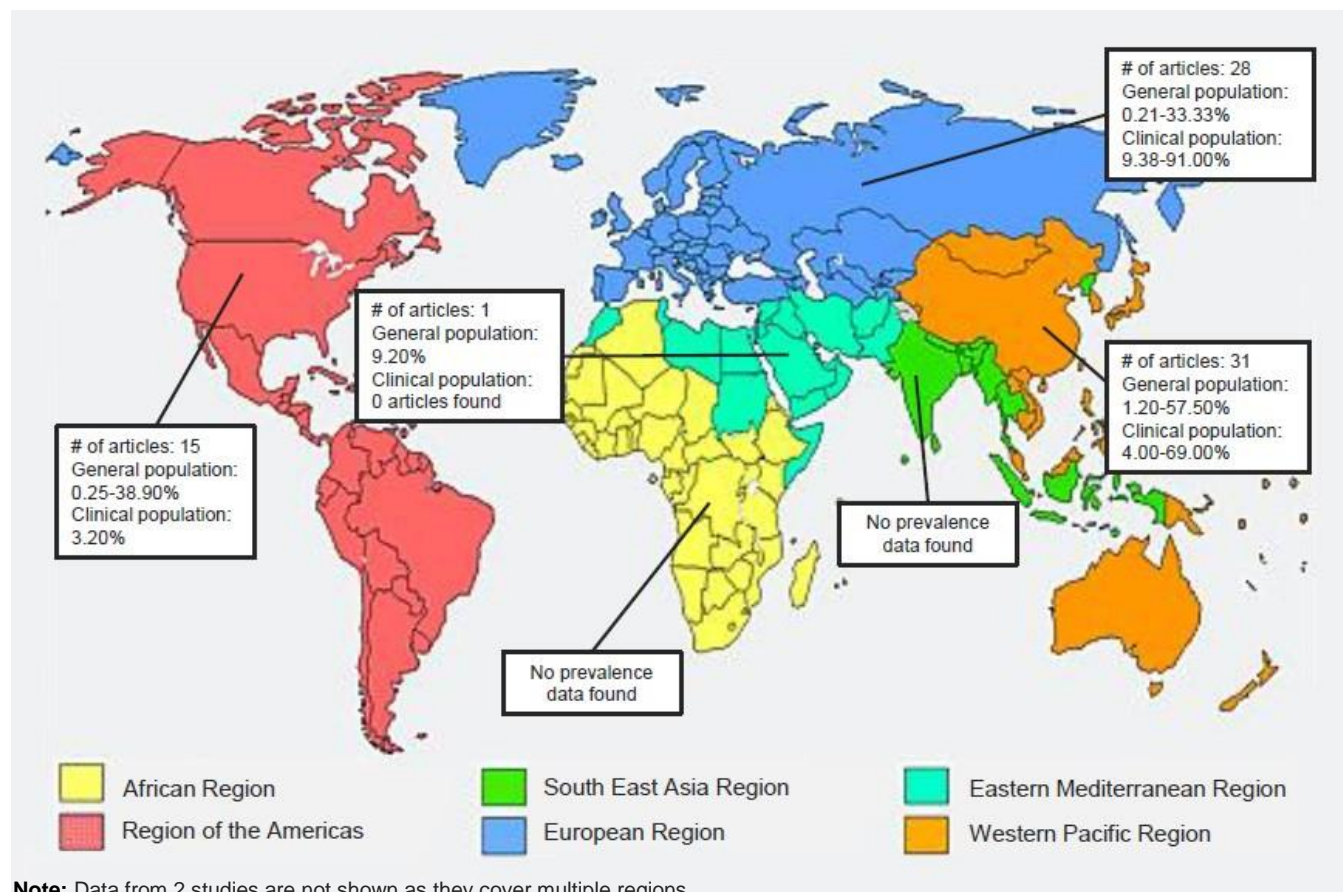
Table 1. Methods used to identify people with Internet Gaming Disorder

| Methods to measure IGD |
|-----------------------------------------------------------|
| C-IGDS |
| C-VAT 2.0 |
| DQVMIA |
| DSM-5 criteria for IGD |
| DSM-5 questionnaire - German |
| GAIT |
| Health professional |
| IGD Checklist - 12 item |
| IGD Checklist - 9 item |
| IGD Scale - 27 item dichotomous |
| IGD Scale - 27 item polytomous |
| IGD Scale - 27 item polytomous - Turkish |
| IGD Scale - 9 item |
| IGD Scale - 9 item dichotomous |
| IGD Scale - 9 item polytomous - Turkish |
| IGD Scale - dichotomous |
| IGD Scale - polytomous |
| IGD-20 Test |
| IGD-20 Test - Spanish |
| IGD-9 Scale |
| IGDI |
| IGDQ - German |
| IGDS-SF9 |
| IGDS-SF9 - Italian |
| IGDT-10 |
| Internet Gaming Addiction Scale |
| K-scale - Korean Internet Addiction Scale for Adolescents |
| PIE-9 |
| Problem gaming instrument |
| PVP Scale |
| SCI-IGD |
| VAT |
| VGA questionnaire (revised) |
| VGAQ |
| Video Game Dependency Scale |



Figure 2 shows the prevalence of IGD by WHO geographic region.

Figure 2. Prevalence by WHO region



Prevalence of internet gaming disorder

In this section, we present the results for IGD prevalence in general, clinical, and severe populations. Mean score data are presented in the appendices.

Appendix E presents characteristics for included studies by WHO geographic region. Out of 69 studies that reported overall population prevalence data, IGD prevalence ranged from 0.32% to 38.90% in general populations and 3.20% to 42.00% in clinical populations. IGD prevalence in one study in a general population from the Eastern Mediterranean region was 9.20%.¹¹ In studies from the European region, IGD prevalence ranged from 0.21% to 33.33% in general populations and 9.38% to 91.00% in clinical populations. In the Region of the Americas, IGD prevalence ranged from 0.25% to 38.90% in general populations and was 3.20% in a clinical population in one Canadian study.¹² IGD prevalence



ranged from 1.20% to 57.50% in general populations and 4.00% to 69.00% in clinical populations in the Western Pacific region. In studies from multiple geographic regions, IGD prevalence ranged from 0.56% to 5.28% in general populations. We did not identify any studies from the African region.

Appendix F presents characteristics for included studies by gender/sex groups. Out of 30 studies that reported this information, IGD prevalence ranged from 0.21% to 57.50% in males from a general population, 33.91% to 91.00% in males from a clinical population, 0.25% to 26.09% in females from a general population, and was 69.00% in females from a clinical population in one South Korean study.¹³ No IGD prevalence data were found for other gender/sex categories.

Appendix G shows characteristics for included studies by age groups. IGD prevalence ranged from 0.26% to 38.00% in children from a general population, 7.93% to 11.44% in children from a clinical population, 0.26% to 38.00% in adolescents from a general population, 7.93% to 11.44% in adolescents from a clinical population, 0.21% to 55.77% in adults from a general population, and 3.20% to 69.00% in adults from a clinical population.

Appendix H presents characteristics for included studies where populations that had severe IGD. IGD prevalence ranges were less than 100% since certain studies were designed to compare or validate different IGD assessment methods. The overall prevalence range for IGD in severe populations was 68.60% to 76.60%. Broken down by age groups, the prevalence ranged from 68.60% to 79.25% in adolescents and was 76.60% in three studies conducted in the same group of American adults.¹⁴⁻¹⁶ IGD prevalence in severe populations was 68.60% in one study from Spain¹⁷ and ranged from 50.42% to 79.25% in the Western Pacific region. The prevalence of IGD ranged from 50.42% to 79.25% in males. No IGD prevalence data were found for other gender/sex categories in severe populations.

Table 2 shows the frequencies of reported variables in all included studies. We identified 125 variables that were reported in included studies. Variables were categorized into demographic characteristics, drug-related variables, game-related variables, mental health/well-being, miscellaneous, physical/physiological characteristics, and relationship-related variables. The categories with the most reported variables were mental health/well-being and game-related variables.

Table 2. Variables reported in populations with internet gaming disorder

| Variables | Number of times reported in this review* |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| Demographic characteristics | 91 |
| Education-related outcome, Ethnicity, Income-related outcome, Intelligence, Job-related outcome, Living situation, Marital status, Nationality, Socioeconomic status | |
| Drug-related variables | 41 |
| Alcohol-related outcome, Cannabis-related outcome, Medication/drug use, Smoking-related outcome, Substance use disorder | |
| Game-related variables | 113 |
| Gaming time, Gaming cognition, Gaming context, Gaming cost-related outcome, Gaming motivation, Game playing, Internet gaming behavior | |
| Mental health/well-being | 376 |
| Adjustment disorder, Adverse childhood experience, Affective disorder, Anger/aggression/hostility, Anxiety, Attention deficit hyperactivity disorder/attention deficit disorder, Autism, Been told they have a learning disorder, Behavioral inhibition/Behavioral activation, Burnout, Cognitive coping, Cognitive distortion, Cognitive functioning, Cognitive reappraisal and expressive suppression, Conduct problem, Confusion, Craving, Depression/depressiveness, Deviant behavior, Disruptive behavior disorder, Dissocial personality disorder, Distress, Dysthymic disorder, Eating disorder, Emotional regulation, Externalizing disorder, Family psychiatric health, Food addiction, Functional impairment, Gambling problem, Gaming treatment, Hyperactivity/inattention, Hypomania, Impulsiveness/impulsivity, Internalizing disorder, Internet addiction, Internet gaming withdrawal, Loneliness, Mania, Mental health, Mindfulness, Mood regulation disorder, Need satisfaction and frustration, Obsessive compulsive/obsession-compulsion, Oppositional defiant disorder, Panic/anxiety disorder, Paranoid ideation, Personality disorder, Pervasive developmental disorder, Phobia, Pornography addiction, Positive affect and negative affect, Problems with the social environment and education, Procrastination, Psychiatric condition, Psychological resilience, Psychosis/schizophrenia, Psychoticism, Purpose in life, Self-control, Self-esteem, Self-perception, Somatic complaint, Somatization, Stress, Suicide, Temperament and character, Tension, Tolerance, Vigor, Well-being/quality of life, Withdrawal | |
| Miscellaneous | 91 |
| Brain imaging characteristics, Bullying-related outcome, Clinical global impression, Clinical impairment, Complaints when Internet not available, Daily life disturbance, Decision-making, Disturbance of reality testing, Duration of illness, Fatigue, Global severity index, Hypermasculinity, K symptom scale, Online time, Self-efficacy, School-related outcome, Sports, Task-related outcome, Virtual reality experience | |
| Physical/physiological characteristics | 20 |
| Anthropometric measure, Sleep-related outcome, Biological outcome, Handedness, Exercise time, Knee problem, Physical health | |
| Relationship-related variables | 25 |
| Relationship-related outcome, Interpersonal sensitivity, Community membership, Interpersonal problem, Prosocial behaviour, Virtual interpersonal relationship | |

* Each variable can be reported multiple times in one study



CONCLUSION

We identified 160 studies that used 35 different IGD diagnostic approaches. No eligible studies on GD were found, which may be due to its recent addition to the ICD-11 in 2018. Most studies were from the Western Pacific region.

Limitations of our rapid scoping review include the focused definitions of IGD and ICD-11- GD, and a synthesis based on only English articles from major databases and our knowledge users, the WHO.

The broad prevalence ranges for IGD should be interpreted with caution. In order to estimate IGD prevalence more accurately and precisely, agreement on its definition and how it is measured is needed. Since eligible studies on GD prevalence were not found, more research estimating prevalence of GD should be undertaken. Future reviews on GD prevalence can be conducted to synthesize evidence found in the literature, and statistical analyses can be conducted to detect any differences in ranges.

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Appendix A. Search strategy (MEDLINE, Embase, PsycINFO)

Ovid Multifile

Database: Ovid MEDLINE: Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE® Daily and Ovid MEDLINE® <1946-Present>, Embase Classic+Embase <1947 to 2018 May 14>, PsycINFO <1806 to May Week 1 2018>

Search Strategy:

-
- 1 IGD.tw,kf.
 - 2 (gam* or internet* or disorder*).tw,kf.
 - 3 1 and 2 [IGD]
 - 4 Video Games/
 - 5 gaming?.tw,kf.
 - 6 videogam*.tw,kf.
 - 7 ((game or games) adj3 (arcade? or console or consoles or computer* or digital* or internet* or mobile or offline or online or pc or video* or web or web-based or WWW)).tw,kf.
 - 8 ((game or games) adj3 (iphon* or "i-phon*" or smartphon* or smart phon*)).tw,kf.
 - 9 ((game or games) adj3 (android* or tablet*)).tw,kf.
 - 10 ((game or games or play*) adj3 (Game boy or Game boys or Gameboy* or Gamecube* or "N Gage" or "NES Classic" or Nintendo* or playstation* or play station* or "Super NES" or Wii or Xbox*)).tw,kf.
 - 11 ((game or games) adj3 (app or apps or Google Play or GooglePlay or iOS)).tw,kf.
 - 12 ("call of duty*" or candy crush* or candycrush* or diablo* or "far cry*" or "first person shooter*" or "grand theft auto*" or "massively multi-player online*" or "massively multiplayer online*" or minecraft* or "mortal combat*" or "mortal kombat*" or "multi-player online battle arena*" or "multiplayer online battle arena*" or "pac man" or "pac manTM" or pokemon* or pong or sonic mania* or (sonic adj2 hedgehog*) or starcraft* or "super mario*" or tetris* or titanfall* or tomb raider* or wolfenstein* or "world of warcraft*" or zelda*).tw,kf.
 - 13 or/4-12 [GAMING]
 - 14 Behavior, Addictive/
 - 15 Habits/
 - 16 Health Behavior/
 - 17 Health Risk Behaviors/
 - 18 Social Behavior Disorders/
 - 19 Video Games/ae [Adverse Effects]
 - 20 Video Games/px [Psychology]
 - 21 (addict* adj3 (computer* or digital* or internet or "i-phon*" or iphon* or online or smart phon* or smartphon* or video* or web or WWW)).tw,kf.
 - 22 ((addict* or compulsive* or detriment* or disorder* or excess* or habitual* or hazardous* or obsess* or problem* or pathologic* or risky) adj5 behav*).tw,kf.
 - 23 ((addict* or compulsive* or depend* or detriment* or disorder* or excess* or habitual* or hazardous* or impair* or obsess* or overus* or (over adj ("use" or used or uses or using)) or problem* or pathologic* or persist* or recur*) adj5 (game or games or gaming or videogam*)).tw,kf.
 - 24 (habit or habits or habit-forming).tw,kf.
 - 25 or/14-24 [PROBLEM BEHAVIOUR]
 - 26 13 and 25 [PROBLEM GAMING BEHAVIOUR]



- 27 3 or 26 [IGD/PROBLEM GAMING]
28 exp Animals/ not (exp Animals/ and Humans/)
29 27 not 28 [ANIMAL-ONLY REMOVED]
30 29 use ppez [MEDLINE RECORDS]
31 IGD.tw,kw.
32 (gam* or internet* or disorder*).tw,kw.
33 31 and 32 [IGD]
34 video game/
35 gaming?.tw,kw.
36 videogam*.tw,kw.
37 ((game or games) adj3 (arcade? or console or consoles or computer* or digital* or internet* or mobile or offline or online or pc or video* or web or web-based or WWW)).tw,kw.
38 ((game or games) adj3 (iphon* or "i-phon*" or smartphon* or smart phon*)).tw,kw.
39 ((game or games) adj3 (android* or tablet*)).tw,kw.
40 ((game or games or play*) adj3 (Game boy or Game boys or Gameboy* or Gamecube* or "N Gage" or "NES Classic" or Nintendo* or playstation* or play station* or "Super NES" or Wii or Xbox*)).tw,kw.
41 ((game or games) adj3 (app or apps or Google Play or GooglePlay or iOS)).tw,kw.
42 ("call of duty*" or candy crush* or candycrush* or diablo* or "far cry*" or "first person shooter*" or "grand theft auto*" or "massively multi-player online*" or "massively multiplayer online*" or minecraft* or "mortal combat*" or "mortal kombat*" or "multi-player online battle arena*" or "multiplayer online battle arena*" or "pac man" or "pac manTM" or pokemon* or pong or sonic mania* or (sonic adj2 hedgehog*) or starcraft* or "super mario*" or tetris* or titanfall* or tomb raider* or wolfenstein* or "world of warcraft*" or zelda*).tw,kw.
43 or/34-42 [GAMING]
44 addiction/
45 behavior disorder/
46 behavioral addiction/
47 computer addiction/
48 game addiction/
49 habit/
50 health behavior/
51 high risk behavior/
52 problem behavior/
53 (addict* adj3 (computer* or digital* or internet or "i-phon*" or iphon* or online or smart phon* or smartphon* or video* or web or WWW)).tw,kw.
54 ((addict* or compulsive* or detriment* or disorder* or excess* or habitual* or hazardous* or obsess* or problem* or pathologic* or risky) adj5 behav*).tw,kw.
55 ((addict* or compulsive* or depend* or detriment* or disorder* or excess* or habitual* or hazardous* or impair* or obsess* or overus* or (over adj ("use" or used or uses or using)) or problem* or pathologic* or persist* or recur*) adj5 (game or games or gaming or videogam*)).tw,kw.
56 (habit or habits or habit-forming).tw,kw.
57 or/44-56 [PROBLEM BEHAVIOUR]
58 43 and 57 [PROBLEM GAMING BEHAVIOUR]
59 33 or 58 [IGD/PROBLEM GAMING]
60 exp animal/ or exp animal experimentation/ or exp animal model/ or exp animal experiment/ or nonhuman/ or exp vertebrate/
61 exp human/ or exp human experimentation/ or exp human experiment/



- 62 60 not 61
63 59 not 62 [ANIMAL-ONLY REMOVED]
64 63 use emczd [EMBASE RECORDS]
65 IGD.tw.
66 (gam* or internet* or disorder*).tw.
67 65 and 66 [IGD]
68 Computer Games/
69 gaming?.tw.
70 videogam*.tw.
71 ((game or games) adj3 (arcade? or console or consoles or computer* or digital* or internet* or mobile or offline or online or pc or video* or web or web-based or WWW)).tw.
72 ((game or games) adj3 (iphon* or "i-phon*" or smartphon* or smart phon*)).tw.
73 ((game or games) adj3 (android* or tablet*)).tw.
74 ((game or games or play*) adj3 (Game boy or Game boys or Gameboy* or Gamecube* or "N Gage" or "NES Classic" or Nintendo* or playstation* or play station* or "Super NES" or Wii or Xbox*)).tw.
75 ((game or games) adj3 (app or apps or Google Play or GooglePlay or iOS)).tw.
76 ("call of duty*" or candy crush* or candycrush* or diablo* or "far cry*" or "first person shooter*" or "grand theft auto*" or "massively multi-player online*" or "massively multiplayer online*" or minecraft* or "mortal combat*" or "mortal kombat*" or "multi-player online battle arena*" or "multiplayer online battle arena*" or "pac man" or "pac manTM" or pokemon* or pong or sonic mania* or (sonic adj2 hedgehog*) or starcraft* or "super mario*" or tetris* or titanfall* or tomb raider* or wolfenstein* or "world of warcraft*" or zelda*).tw.
77 or/68-76 [GAMING]
78 Addiction/
79 Behavior Disorders/
80 Behavior Problems/
81 Habits/
82 Health Behavior/
83 Internet Addiction/
84 (addict* adj3 (computer* or digital* or internet or "i-phon*" or iphon* or online or smart phon* or smartphon* or video* or web or WWW)).tw.
85 ((addict* or compulsive* or detriment* or disorder* or excess* or habitual* or hazardous* or obsess* or problem* or pathologic* or risky) adj5 behav*).tw.
86 ((addict* or compulsive* or depend* or detriment* or disorder* or excess* or habitual* or hazardous* or impair* or obsess* or overus* or (over adj ("use" or used or uses or using)) or problem* or pathologic* or persist* or recur*) adj5 (game or games or gaming or videogam*)).tw.
87 (habit or habits or habit-forming).tw.
88 or/78-87 [PROBLEM BEHAVIOUR]
89 77 and 88 [PROBLEM GAMING BEHAVIOUR]
90 67 or 89 [IGD/PROBLEM GAMING]
91 exp Animals/ not (exp Animals/ and Humans/
92 90 not 91 [ANIMAL-ONLY REMOVED]
93 92 use ppez,emczd
94 92 not 93 [PSYCINFO RECORDS]
95 30 or 64 or 94 [ALL DATABASES]
96 limit 95 to yr="2014-current"
97 remove duplicates from 96

- 98 95 not 96
- 99 remove duplicates from 98
- 100 97 or 99 [TOTAL UNIQUE RECORDS]
- 101 100 use ppez [MEDLINE UNIQUE RECORDS]
- 102 100 use emczd [EMBASE UNIQUE RECORDS]
- 103 100 not (101 or 102) [PSYCINFO UNIQUE RECORDS]

Appendix B. List of potentially relevant systematic reviews

1. Gonzalez-Bueso V, Santamaria, JJ, Fernandez D, Merino L, Montero E, Ribas J. Association between Internet Gaming Disorder or Pathological Video-Game Use and Comorbid Psychopathology: A Comprehensive Review. *International journal of environmental research and public health* [Electronic Resource]. 2018; 15(4):03.
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Appendix C. List of potentially relevant non-English studies

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16. Fernandez-Villa, T.; Alguacil Ojeda, J.; Almaraz Gomez, A.; Cancela Carral, J. M.; Delgado-Rodriguez, M.; Garcia-Martin, M.; Jimenez-Mejias, E.; Llorca, J.; Molina, A. J.; Ortiz Moncada,

- R.; Valero-Juan, L. F.; Martin, V..Problematic Internet Use in University Students: associated factors and differences of gender
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Appendix D. List of included full-text articles

1. Adams BL, Stavropoulos V, Burleigh TL, Liew LW, Beard CL, Griffiths MD. Internet gaming disorder behaviors in emergent adulthood: A pilot study examining the interplay between anxiety and family cohesion. *International Journal of Mental Health and Addiction*. 2018: 1-17.
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Appendix E. Study and population characteristics for studies with general or clinical populations, by WHO region

| Study | Country | Study Design | Study population description | N | Age (years) <i>M (SD) or M (range)</i> | Gender/Sex (%) <i>(Male/Female/Other)</i> | IGD Reporting Method | IGD Measure/Instrument/Assessment | IGD Num/Den | IGD Prevalence (%) <i>Prevalence (95% CI)</i> | IGD Score <i>M (SD)</i> |
|----------------------------------------------------------|----------------|-----------------|------------------------------------------------|------|-------------------------------------------|----------------------------------------------|----------------------|-----------------------------------|-------------|--------------------------------------------------|----------------------------|
| Eastern Mediterranean Region – General Population | | | | | | | | | | | |
| Hawi 2018 ¹¹ | Lebanon | Cross-sectional | High school students 15-19 years old | 524 | 16.2 (1.0) | NR/48/NR | Self-report | IGD-20 Test | NR | 9.20 (NR) | NR (NR) |
| Wu 2017b ¹⁸ | Iran | Cross-sectional | Adolescent students 12-19 years old | 2363 | 15.6 (1.2) | NR/65/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 24.0 (7.1) |
| European Region – General Population | | | | | | | | | | | |
| Arcelus 2017 ¹⁹ | United Kingdom | Cross-sectional | Transgender gamers | 245 | 27.41 (12.4) | 45/35/11* | Self-report | IGDS-SF9 | 2/245 | 0.70 (NR) | NR (NR) |
| Bouna-Pyrrou 2015 ²⁰ | Germany | Cross-sectional | Male and female volunteers | 2465 | NR (NR) | 62/38/0* | Self-report | DSM-5 questionnaire - German | 27/2465 | 1.10 (NR) | NR (NR) |
| Buiza-Aguado 2018 ²¹ | Spain | Cross-sectional | Students 12-18 years old from Málaga | 708 | 15.6 (2.7) | 44/56/0 | Self-report | IGD Scale - 9 item dichotomous | 59/708 | 8.30 (NR) | 2.1 (1.8) |
| Deleuze 2017 ²² | Belgium | Observational | Adult gamers 18-39 years old | 97 | 22.21 (3.73) | NR/87/NR | Self-report | DSM-5 criteria for IGD | 32/97 | 33.00 (NR) | NR (NR) |
| Evren 2018 ²³ | Turkey | Cross-sectional | University students and gamers 15-48 years old | 1250 | 21.84 (3.42) | 56/44/0 | Self-report | IGDS-SF9 | 12/1250 | 0.96 (NR) | 15.50 (6.89) |
| Jeromin 2016a ²⁴ | Germany | Observational | Adults | 87 | NR (NR) | 0/100/0 | Self-report | IGDQ - German | 29/686 | 5.30 (NR) | NR (NR) |
| Jeromin 2016b ²⁵ | Germany | Cross-sectional | Adult gamers 18-75 years old | 894 | 26.49 (8.46 NR) | 13/87/0 | Self-report | IGDQ - German | 71/894 | 7.94 (1.86π) | 1.70 (1.86π) |

| | | | | | | | | | | | |
|----------------------------|-------------|-----------------|----------------------------------------|------|------------------------|-------------|-------------|--------------------------------|----------|-----------|-------------|
| Király 2017 ²⁶ | Hungary | Cross-sectional | Gamers 14-64 years old | 4887 | 22.2 (6.4) | NR/93/NR | Self-report | IGDT-10 | 138/4887 | 2.90 (NR) | 0.83 (1.36) |
| Lemmens 2016 ²⁷ | Netherlands | Cross-sectional | Adults and adolescents 13-40 years old | 2444 | NR (13 to 40) | 51/NR/NR | Self-report | IGD Scale - 9 item dichotomous | 73/1251 | 5.80 (NR) | 1.17 (1.91) |
| | | | | | | | | IGD Scale - polytomous | NR | NR (NR) | 0.17 (1.03) |
| Lemmens 2015 ²⁸ | Netherlands | Cross-sectional | Adults and adolescents 13-40 years old | 2444 | NR (13 to 40) | 51/NR/NR | Self-report | IGD Scale - 9 item dichotomous | NR | 5.40 (NR) | NR (NR) |
| | | | | | NR (13 to 40) | 51/NR/NR | Self-report | IGD Scale - 9 item dichotomous | 51/1247 | 4.00 (NR) | NR (NR) |
| | | | | | Ages 31-40: 35.9 (2.8) | 51/NR/NR | Self-report | IGD Scale - 9 item dichotomous | NR | 5.50 (NR) | NR (NR) |
| | | | | | Ages 21-30: 25.1 (2.8) | 51/NR/NR | Self-report | IGD Scale - 9 item dichotomous | NR | 6.70 (NR) | NR (NR) |
| | | | | | Ages 13-20: 17.6 (2.2) | 51/NR/NR | Self-report | IGD Scale - 9 item dichotomous | NR | 3.90 (NR) | NR (NR) |
| | | | | | Ages 31-40: 35.9 (2.8) | 51/NR/NR | Self-report | IGD Scale - dichotomous | NR | NR (NR) | 4.48 (5.14) |
| | | | | | Ages 21-30: 25.1 (2.8) | 51/NR/NR | Self-report | IGD Scale - dichotomous | NR | NR (NR) | 4.63 (5.90) |
| | | | | | Ages 13-20: 17.6 (2.2) | 51/NR/NR | Self-report | IGD Scale - dichotomous | NR | NR (NR) | 3.22 (5.07) |
| | | | | | Ages 31-40: 35.9 (2.8) | 51/NR/NR | Self-report | IGD Scale - polytomous | NR | NR (NR) | 1.57 (0.87) |
| | | | | | Ages 21-30: 25.1 (2.8) | 51/NR/NR | Self-report | IGD Scale - polytomous | NR | NR (NR) | 1.61 (0.97) |
| | | | | | Ages 13-20: 17.6 (2.2) | 51/NR/NR | Self-report | IGD Scale - polytomous | NR | NR (NR) | 1.51 (0.91) |
| NR (13 to 40) | 51/NR/NR | Self-report | IGD Scale - 27 item dichotomous | NR | NR (NR) | 4.20 (5.37) | | | | | |

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|---------------------------------|----------------|-----------------|---------------------------------------------------|-------|------------------------|----------|-------------|--------------------------------|-----------|---------------------|---------------|
| | | | | | NR (13 to 40) | 51/NR/NR | Self-report | IGD Scale - 27 item polytomous | NR | NR (NR) | 0.58 (0.91) |
| Monacis 2017 ²⁹ | Italy | Cross-sectional | Students | 712 | 21.63 (3.90) | 46/54/0* | Self-report | IGDS-SF9 - Italian | NR | NR (NR) | 15.79 (8.87) |
| Monacis 2016 ³⁰ | Italy | Cross-sectional | Students 16 years and older | 687 | 21.62 (3.90) | 45/55/0* | Self-report | IGDS-SF9 - Italian | NR | NR (NR) | NR (NR) |
| Monacis 2018 ³¹ | Italy | Cross-sectional | Students and gamers | 455 | NR (NR) | NR/NR/NR | Self-report | IGDS-SF9 - Italian | NR | NR (NR) | 14.49 (7.463) |
| Pontes 2017a ³² | Portugal | Cross-sectional | Students 10-18 years old in grades 6, 7, 8, and 9 | 509 | 13.02 (1.64) | NR/54/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 15.92 (6.99) |
| Pontes 2016 ³³ | Slovenia | Cross-sectional | Students in grade 8 12-16 years old | 1071 | 13.44 (0.59) | NR/50/NR | Self-report | IGDS-SF9 | 26/1071 | 2.60 (1.70 to 3.70) | NR (NR) |
| Pontes 2017b ³⁴ | United Kingdom | Cross-sectional | Adult gamers | 272 | 41.61 (14.03) | NR/51/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 14.04 (5.67) |
| Przybylski 2016a ³⁵ | United Kingdom | Cross-sectional | Adults 18 years and older | 1899 | NR (NR) | 50/50/0* | Self-report | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |
| Przybylski 2017b ³⁶ | United Kingdom | Cross-sectional | Adults | 1899 | NR (NR) | 50/50/0* | Self-report | DSM-5 criteria for IGD | NR | 0.47 (0.23 to 0.93) | NR (NR) |
| Rehbein 2015 ³⁷ | Germany | Cross-sectional | Students 13-18 years old in grade 9 | 11003 | 14.88 (0.74) | 49/51/0* | Self-report | Video Game Dependency Scale | 128/11003 | 1.16 (0.96 to 1.36) | NR (NR) |
| Thomsen 2018 ³⁸ | Denmark | Cross-sectional | People 16-26 years old | 109 | 21.7 (2.7) | NR/69/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 9.7 (9.2) |
| Stavropoulos 2018 ³⁹ | United Kingdom | Cross-sectional | American, British, and Australian gamers | 281 | 29.49 (9.47) | NR/86/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 17.99 (7.02) |
| Vadlin 2018 ⁴⁰ | Sweden | Observational | Adolescents | 1576 | 13, 15, 16, 18 NR (NR) | 58/NR/NR | Self-report | GAIT | NR | NR (NR) | NR (NR) |
| Wartberg 2017a ⁴¹ | Germany | Cross-sectional | Adolescents 12-14 years old | 1095 | 12.99 (0.82) | 49/51/0 | Self-report | IGD Scale - 9 item dichotomous | 260/1095 | 23.74* (NR) | NR (NR) |

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|--------------------------------|---------|-----------------|-----------------------------|------|---------------------|----------|--------------------------|----------------------------------------------------|----------|---------------------|---------------|
| Wartberg 2017b ⁴² | Germany | Cross-sectional | Adolescents 12-14 years old | 1095 | 12.99 (0.82) | 49/51/0 | Self-report | IGD Scale - 9 item dichotomous | 260/1095 | 5.50 (NR) | NR (NR) |
| Wartberg 2017c ⁴³ | Germany | Cross-sectional | People 12-25 years old | 1531 | 18.86 (4.06) | 49/51/0 | Self-report | IGD Scale - 9 item dichotomous | 88/1531 | 5.70 (4.5 to 6.9) | NR (NR) |
| Wartberg 2018 ⁴⁴ | Germany | Observational | Adolescents 12-14 years old | 1095 | Time 1: 12.99(0.82) | 49/51/0 | NR | IGD Scale - 9 item dichotomous | 242/985 | 24.57* (NR) | NR (NR) |
| | | | | | Time 2: 13.89(0.89) | 49/51/0 | NR | IGD Scale - 9 item dichotomous | 257/985 | 26.09* (NR) | NR (NR) |
| Wichstrom 2018 ⁴⁵ | Norway | Observational | Children 10 years old | 740 | 8, 10 NR (NR) | 51/49/0 | Health professional | IGDI | 14/740 | 1.70 (0.70 to 2.70) | NR (NR) |
| De Pasquale 2018 ⁴⁶ | Italy | Cross-sectional | Students 18-25 years old | 221 | 21.56 (1.42) | 58/42/0* | Interview, not specified | IGDS-SF9 | 33/221 | 14.90 (NR) | NR (NR) |
| Evren 2017 ⁴⁷ | Turkey | Cross-sectional | People | 457 | NR (NR) | 62/38/0 | Self-report | Baseline: IGD Scale - 27 item polytomous - Turkish | NR | NR (NR) | 15.61 (22.74) |
| | | | | | | | | Retest: IGD Scale - 27 item polytomous - Turkish | NR | NR (NR) | 16.51 (22.50) |
| | | | | | | | | Baseline: IGD Scale - 9 item polytomous - Turkish | 19/457 | 4.20 (NR) | 5.39 (8.06) |
| | | | | | | | | Retest: IGD Scale - 9 item polytomous - Turkish | 42/457 | 9.20 (NR) | 5.55 (7.69) |
| Fuster 2016 ⁴⁸ | Spain | Cross-sectional | Gamers 12-58 years old | 1074 | 26.14 (6.1) | NR/95/NR | Self-report | IGD-20 Test - Spanish | NR | NR (NR) | 44.08 (13.19) |

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|------------------------------------|----------------|-----------------|------------------------------------------------------------------------|------|----------------|-----------|-------------|--------------------------------|---------|-------------|--------------------------|
| Gunuc 2015 ⁴⁹ | Turkey | Cross-sectional | Adolescents 15-18 years old | 131 | NR (15 to 18) | NR/NR/NR | Self-report | VGAQ | 21/131 | 16.00 (NR) | 21.435 (6.437) |
| Laconi 2017 ⁵⁰ | France | Cross-sectional | Adult gamers 18-30 years old | 418 | 21.9 (3) | 49/51/0 | Self-report | IGDT-10 | 8/418 | 1.90 (NR) | 28.3 (5.3) |
| Lopez-Fernandez 2014 ⁵¹ | Spain | Cross-sectional | Adolescent students 11-18 years old | 1996 | NR (11 to 18) | 41/58/NR* | Self-report | PVP Scale | 81/1047 | 7.74* (NR) | 1.74 (1.70) |
| | Great Britain | Cross-sectional | Adolescent students 11-18 years old | 1996 | NR (NR) | 41/58/NR* | Self-report | PVP Scale | 179/949 | 18.86* (NR) | 2.47 (2.33) |
| Milani 2018 ⁵² | Italy | Cross-sectional | Students 9-19 years old | 612 | 13.94 (2.44) | 53/47/0 | Self-report | VGA questionnaire (revised) | 13/612 | 2.10 (NR) | NR (NR) |
| de Palo 2018 ⁵³ | Albania | Cross-sectional | People 14-70 years old | 1411 | 31.38 (10.97) | 36/NR/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 21.1 (7.08) |
| | United Kingdom | Cross-sectional | People 14-70 years old | 1411 | 29.50 (9.48) | 36/NR/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 17.99 (7.02) |
| | Italy | Cross-sectional | People 14-70 years old | 1411 | 21.62 (3.9) | 36/NR/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 15.93 (8.96) |
| Peeters 2018 ⁵⁴ | Netherlands | Observational | Adolescents 11-15 years old | 544 | 13.9 (0.74) | NR/49/NR | Self-report | IGD Scale - 9 item dichotomous | NR | NR (NR) | Time 1: 0.686 (1.348) |
| | | | | | | | | | | | Time 2: 0.738 (1.453) |
| Taquet 2017 ⁵⁵ | France | Cross-sectional | Adult gamers 18-53 years old | 124 | 25.274 (7.424) | 15/85/0* | Self-report | PVP Scale | NR | NR (NR) | 4.226 (1.878) |
| Tejeiro 2016 ⁵⁶ | Spain | Cross-sectional | Adolescent students 11-17 years old and adult students 20-50 years old | 909 | NR (NR) | 50/50/0 | Self-report | PVP Scale | NR | NR (NR) | Adolescents: 1.67 (1.55) |
| | | | | | | | | | | | Adults: 0.96 (1.31) |
| Triberti 2018 ⁵⁷ | Italy | Cross-sectional | Gamers 12-47 years old | 133 | 24.93 (5.31) | 17/83/0 | Self-report | PVP Scale | NR | NR (NR) | 2.84 (1.96) |

| Region of the Americas – General Population | | | | | | | | | | | |
|---------------------------------------------|-----|-----------------|------------------------------------------|------|---------------|----------|---------------------|--------------------------------|-----------------------------------|-----------------------------|--------------|
| Pontes 2017b ³⁴ | USA | Cross-sectional | Adult gamers | 405 | 32.57 (11.33) | NR/62/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 18.06 (7.36) |
| Przybylski 2017a ⁵⁸ | USA | Cross-sectional | Adults 18–24 years old | 1247 | NR (18 to 24) | 42/58/0* | Self-report | DSM-5 criteria for IGD | NR | 1.04 (0.58 to 1.83) | NR (NR) |
| Przybylski 2017d ⁵⁹ | USA | Cross-sectional | Adults | 5777 | 46.59 (17.80) | 58/42/0* | Self-report | DSM-5 criteria for IGD | NR | 0.32 (0.18 to 0.56) | NR (NR) |
| Snodgrass 2018 ⁶⁰ | USA | Cross-sectional | Gamers | 58 | 23.79 (4.15) | NR/64/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 19.82 (7.57) |
| | | | | | | | | | Scale cut-off of ≥ 28 : 8/56 | 14.29* (NR) | 37 (1.00) |
| | | | | | | | | | Scale cut-off of ≥ 36 : 3/56 | 5.36* (NR) | 33.8 (3.85) |
| Stavropoulos 2018 ³⁹ | USA | Cross-sectional | American, British, and Australian gamers | 463 | 25.23 (2.76) | NR/58/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 20.82 (7.85) |
| Stockdale 2018 ⁶¹ | USA | Cross-sectional | Adult university student gamers | 174 | NR (NR) | NR/NR/NR | Self-report | IGD Scale - 9 item | 87/1205 | 7.22* (NR) | NR (NR) |
| Stubblefield 2017 ⁶² | USA | Cross-sectional | Children 11-17 years old | 454 | 13.7 (1.9) | 53/47/NR | Self-report | Problem gaming instrument | 37/454 | 8.20 (NR) | NR (NR) |
| Weinstein 2017 ⁶³ | USA | Observational | Adults | 2316 | NR (NR) | 62/38/0* | Health professional | Health professional | NR | Time 1: 1.49 (1.11 to 2.00) | 0.56 (1.13) |
| | | | | | | | | | | Time 2: 0.99 (0.65 to 1.51) | 0.47 (0.97) |
| Allen 2018 ⁶⁴ | USA | Cross-sectional | Student gamers 18-40 years old | 315 | 19.34 (2.01) | 19/81/0 | Self-report | IGD Scale - 27 item polytomous | 18/315 | 5.70 (NR) | 0.78 (0.81) |

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|----------------------------------------------------|-------------|-----------------|-----------------------------------------------|------|------------------|-----------|---------------------|--------------------------------|----------|-------------|--------------|
| Bargeron 2017 ⁶⁵ | USA | Cross-sectional | Adults | 257 | 21.81 (6.80) | NR/NR/NR | Self-report | DSM-5 criteria for IGD | 21/257 | 8.70 (NR) | 1.92 (1.77) |
| Carlisle 2018 ⁶⁶ | USA | Cross-sectional | Adult gamers 18-95 years old | 1881 | 28.27 (18 to 95) | 39/59/2 | Self-report | IGDT-10 | 79/1881 | 4.20 (NR) | 1.16 (1.54) |
| de Palo 2018 ⁵³ | USA | Cross-sectional | People 14-70 years old | 1411 | 29.09 (10.72) | 36/NR/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 17.5 (6.01) |
| Li 2017a ¹⁶ | USA | RCT | Adults | 30 | 25.0 (5.4) | 17/80/3.3 | Self-report | DSM-5 criteria for IGD | 61/159 | 38.90 (NR) | NR (NR) |
| Sioni 2017 ⁶⁷ | USA | Cross-sectional | Adult gamers 18-77 years old | 394 | 34.3 (11.6) | NR/50/NR | Self-report | IGD Scale - 9 item dichotomous | 102/394 | 25.90 (NR) | 11.8 (2.7) |
| South-East Asia Region – General Population | | | | | | | | | | | |
| Pontes 2017b ³⁴ | India | Cross-sectional | Adult gamers | 336 | 30.37 (8.90) | NR/68/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 25.57 (7.64) |
| Western Pacific Region – General Population | | | | | | | | | | | |
| Jeong 2018 ⁶⁸ | South Korea | Cross-sectional | Adolescents from the 3rd, 4th, and 7th grades | 273 | NR (NR) | 45/55/0* | Health professional | Health professional | 45/273 | 16.48* (NR) | NR (NR) |
| | | | | | | | Self-report | DSM-5 criteria for IGD | 47/273 | 17.22* (NR) | NR (NR) |
| | | | | | | | Health professional | Health professional | 43/834 | 5.16* (NR) | NR (NR) |
| Jo 2018 ⁶⁹ | South Korea | Cross-sectional | Adolescent gamers 10-19 years old | 121 | 14.1 (10 to 19) | 26/74/0 | Health professional | Health professional | 46/121 | 38.00 (NR) | NR (NR) |
| Kim 2016b ⁷⁰ | South Korea | Cross-sectional | Adult gamers 20-49 years old | 3041 | NR (20 to 49) | 40.0/60/0 | Self-report | DSM-5 criteria for IGD | 419/3041 | 13.80 (NR) | NR (NR) |
| | | | | | NR (20 to 29) | 40.0/60/0 | Self-report | DSM-5 criteria for IGD | 160/1221 | 13.10* (NR) | NR (NR) |
| | | | | | NR (30 to 39) | 40.0/60/0 | Self-report | DSM-5 criteria for IGD | 175/1215 | 14.40* (NR) | NR (NR) |
| | | | | | NR (40 to 49) | 40.0/60/0 | Self-report | DSM-5 criteria for IGD | 84/605 | 13.88* (NR) | NR (NR) |

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|---------------------------|-------------|-----------------|----------------------------------------------|------|---------------|-----------|---------------------|------------------------|---------------------------------------------|-------------|---------|
| King 2016 ⁷¹ | Australia | Cross-sectional | Secondary school students 12 years and older | 824 | 14.1 (1.5) | 51/49/0* | Self-report | IGD Checklist - 9 item | 26/824 | 3.10 (NR) | NR (NR) |
| King 2017a ⁷² | Australia | Cross-sectional | Adult gamers 18-56 years old | 630 | 25.8 (7.1) | NR/76/NR* | Self-report | IGD Checklist - 9 item | 20/630 | 3.17* (NR) | NR (NR) |
| Lee 2017b ⁷³ | South Korea | Cross-sectional | First year middle school students | 330 | NR (NR) | 51/49/0 | Health professional | Health professional | 16/330 | 4.90 (NR) | NR (NR) |
| | | | | | | | | | <i>Author-defined severe cut-off: 4/330</i> | 1.21* (NR) | NR (NR) |
| Na 2017a ⁷⁴ | South Korea | Cross-sectional | Gamers 20-49 years old | 2923 | NR (20 to 49) | 29/71/0* | Self-report | DSM-5 criteria for IGD | 494/2923 | 16.90* (NR) | NR (NR) |
| | | | | | NR (20 to 29) | 29/71/0* | Self-report | DSM-5 criteria for IGD | 180/1147 | 15.69* (NR) | NR (NR) |
| | | | | | NR (30 to 39) | 29/71/0* | Self-report | DSM-5 criteria for IGD | 222/1233 | 18.00* (NR) | NR (NR) |
| | | | | | NR (40 to 49) | 29/71/0* | Self-report | DSM-5 criteria for IGD | 92/543 | 16.94* (NR) | NR (NR) |
| Na 2017b ⁷⁵ | South Korea | Cross-sectional | Adults 20-49 years old | 1819 | NR (20 to 49) | 47/53/0 | Self-report | DSM-5 criteria for IGD | 257/1819 | 14.13* (NR) | NR (NR) |
| | | | | | NR (20 to 29) | 47/53/0 | Self-report | DSM-5 criteria for IGD | 89/669 | 13.30* (NR) | NR (NR) |
| | | | | | NR (30 to 39) | 47/53/0 | Self-report | DSM-5 criteria for IGD | 120/804 | 14.93* (NR) | NR (NR) |
| | | | | | NR (40 to 39) | 47/53/0 | Self-report | DSM-5 criteria for IGD | 48/346 | 13.87* (NR) | NR (NR) |
| Paik 2017a ⁷⁶ | South Korea | Cross-sectional | Adult gamers 20-39 years old | 3058 | 26.95 (5.859) | NR/NR/NR | Self-report | DSM-5 criteria for IGD | 396/3058 | 12.90 (NR) | NR (NR) |
| Pearcy 2017 ⁷⁷ | Australia | Cross-sectional | Gamers 16-60 years old | 404 | 23.8 (7.2) | 30/70/0 | Self-report | PIE-9 | 34/404 | 8.42* (NR) | NR (NR) |

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|---------------------------------|---------------|-----------------|------------------------------------------|------|---------------|-----------|-------------|------------------------|----------|---------------------|-------------|
| Pearcy 2016 ⁷⁸ | Australia | Cross-sectional | Gamers older than 16 years | 408 | NR (NR) | 31/69/NR | Self-report | PIE-9 | 34/404 | 8.42* (NR) | NR (NR) |
| Rao 2017 ⁷⁹ | China | Cross-sectional | Students in grades 7, 8, 9, and 10 | 2590 | 14.1 (NR) | 40/60/NR* | Self-report | IGDS-SF9 | NR | NR (NR) | NR (NR) |
| Rho 2017 ⁸⁰ | South Korea | Cross-sectional | Adult gamers 20-49 years old | 3568 | NR (20 to 49) | 43/57/0 | Self-report | DSM-5 criteria for IGD | 481/3568 | 13.50 (NR) | NR (NR) |
| | | | | | NR (20 to 29) | 43/57/0 | Self-report | DSM-5 criteria for IGD | 170/1259 | 13.50* (NR) | NR (NR) |
| | | | | | NR (30 to 39) | 43/57/0 | Self-report | DSM-5 criteria for IGD | 215/1559 | 13.79* (NR) | NR (NR) |
| | | | | | NR (40 to 49) | 43/57/0 | Self-report | DSM-5 criteria for IGD | 96/750 | 12.80* (NR) | NR (NR) |
| Sigerson 2017 ⁸¹ | China | Cross-sectional | Adult gamers 18-60 years old | 502 | 37.1 (13.3) | 50/50/0* | Self-report | C-IGDS | NR | NR (NR) | 1.29 (1.73) |
| Stavropoulos 2018 ³⁹ | Australia | Cross-sectional | American, British, and Australian gamers | 171 | 25.72 (5.52) | NR/77/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 18.9 (7.63) |
| Subramaniam 2016 ⁸² | Singapore | Cross-sectional | Internet users 13-20 years old | 1236 | 23.7 (5.3) | 45/55/0 | Self-report | DSM-5 criteria for IGD | 172/972 | 17.71 (NR) | NR (NR) |
| Wang 2018a ⁸³ | South Korea | Cross-sectional | People 14-39 years old | 7200 | NR (14 to 39) | 56/44/0 | Self-report | IGD-9 Scale | 774/7200 | 10.80 (NR) | 6.24 (1.21) |
| Wu 2017a ⁸⁴ | China, Taiwan | Cross-sectional | Adult online gamers 18-82 years old | 383 | 23.7 (6.7) | 45/55/0 | Self-report | DSM-5 criteria for IGD | 64/383 | 16.71* (NR) | NR (NR) |
| Wu 2018a ⁸⁵ | China | Cross-sectional | Adults 18-97 years old | 1000 | 40.0 (15.3) | 56/44/0 | Self-report | DSM-5 criteria for IGD | 20/1000 | 2.00 (1.10 to 2.90) | NR (NR) |
| Yu 2016 ⁸⁶ | South Korea | Cross-sectional | Middle school students 13-15 years old | 2014 | 14.5 (0.50) | 50/51/NR* | Self-report | DSM-5 criteria for IGD | 119/2014 | 5.90 (NR) | 16.63 (7.6) |

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|------------------------------|-----------|-----------------|------------------------------|-----|---------------|-----------|-------------|---------------------------------|--------|-----------|-------------------------|
| Yu 2018 ⁸⁷ | China | Cross-sectional | Adult gamers 18-67 years old | 327 | 31.93 (9.04) | NR/79/NR | Self-report | DSM-5 criteria for IGD | NR | 2.30 (NR) | NR (NR) |
| Adams 2018 ⁸⁸ | Australia | Observational | Adult gamers 18-29 years old | 125 | 23.34 (3.39) | 25/75/0 | Self-report | IGDS-SF9 | NR | NR (NR) | Time 1: 19.48 (7.07) |
| | | | | | | | | | | | Time 2: 18.67 (6.86) |
| | | | | | | | | | | | Time 3: 17.78 (5.80) |
| Burleigh 2018 ⁸⁹ | Australia | Observational | Adult gamers 18-29 years old | 125 | 23.02 (3.43) | 25/75/0 | Self-report | IGDS-SF9 | NR | NR (NR) | Time 1: 19.48 (7.06) |
| | | | | | | | | | | | Time 2: 18.67 (6.86) |
| | | | | | | | | | | | Time 3: 17.78 (SD 5.80) |
| Fu 2015 ⁹⁰ | China | Cross-sectional | Students 14-23 years old | 700 | 17.0 (1.25) | 52/48/0 | Self-report | Internet Gaming Addiction Scale | NR | NR (NR) | NR (NR) |
| King 2017c ⁹¹ | Australia | Cross-sectional | Students 12-17 years old | 824 | 14.1 (1.5) | 51/49/NR* | Self-report | IGD Checklist - 12 item | 25/799 | 3.10 (NR) | NR (NR) |
| Liew 2018 ⁹² | Australia | Observational | Adult gamers 18-29 years old | 125 | NR (18 to 29) | 25/75/0 | Self-report | IGDS-SF9 | NR | NR (NR) | Time 1: 19.44 (7.07) |
| | | | | | | | | | | | Time 2: 18.8 (6.91) |
| | | | | | | | | | | | Time 3: 17.95 (5.93) |
| Schneider 2018 ⁹³ | Australia | Cross-sectional | Adolescents 12-19 years old | 823 | 14.2 (1.4) | 51/49/0* | Self-report | IGD Checklist - 12 item | 26/823 | 3.20 (NR) | NR (NR) |

| International – General Population | | | | | | | | | | | |
|----------------------------------------------|-----------------------------------------------------------------------------------------|-----------------|------------------------|-------|---------------|-----------|-------------|------------------------------------------|---------|---------------------|---------------|
| Pontes 2014 ⁹⁴ | Canada, Finland, Germany, the Netherlands, Sweden, United Kingdom, USA, Other countries | Cross-sectional | Gamers 16-58 years old | 1003 | 26.5 (0.26) | NR/85/NR | Self-report | DSM-5 criteria for IGD | 53/1003 | 5.28* (NR) | NR (NR) |
| Przybylski 2016b ⁹⁵ | Canada, Germany, United Kingdom, USA | Cross-sectional | Adults 18–24 years | 10009 | NR (18 to 24) | 50/50/0* | Self-report | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |
| Przybylski 2017c ⁹⁶ | Canada, Germany, United Kingdom, USA | Cross-sectional | Adults 18–24 years old | 10099 | NR (18 to 24) | 49/50/NR* | Self-report | DSM-5 criteria for IGD | NR | 0.68 (0.53 to 0.87) | NR (NR) |
| Pontes 2015 ¹⁰ | Germany, Netherland, Sweden, United Kingdom, USA, Other countries | Cross-sectional | Gamers 16-70 years old | 1060 | 27.3 (9.02) | NR/85/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 18 (6.63) |
| European Region – Clinical Population | | | | | | | | | | | |
| Evren 2017 ⁴⁷ | Turkey | Cross-sectional | People | 457 | NR (NR) | 62/38/0 | Self-report | IGD Scale - 27 item polytomous - Turkish | NR | NR (NR) | 91.74 (10.34) |
| | | | | | | | | IGD Scale - 9 item polytomous - Turkish | NR | NR (NR) | 33.32 (3.25) |

| | | | | | | | | | | | |
|-----------------------------------------------------|-------------|---------------------------|-----------------------------------------------------------------------------------------------|------|------------|-----------|---------------------|------------------------|---------|------------|--------------|
| Krossbakken 2018 ⁹⁷ | Norway | RCT | Guardians of children 8–12 years old | 1657 | 10.1 (NR) | 46/53/NR* | Parent report | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |
| Mallorquí-Bagué 2017 ⁹⁸ | Spain | Cross-sectional | Adults with IGD or online gambling disorder | 288 | NR (NR) | 5/95/0* | Health professional | Health professional | 27/288 | 9.38* (NR) | NR (NR) |
| Region of the Americas – Clinical Population | | | | | | | | | | | |
| Sanders 2017 ¹² | Canada | Cross-sectional | Adults | 542 | π | 39/61/7 | Self-report | DSM-5 criteria for IGD | 39/1238 | 3.20 (NR) | NR (NR) |
| Western Pacific Region – Clinical Population | | | | | | | | | | | |
| Cai 2016 ⁹⁹ | China | Observational | Adult gamers with IGD | 57 | NR (NR) | NR/79/NR* | Self-report | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |
| Dong 2017c ¹⁰⁰ | China | Observational | University student gamers from Shanghai with IGD or RGU; normal or corrected-to-normal vision | 70 | NR (NR) | 0/100/0 | NR | DSM-5 criteria for IGD | NR | NR (NR) | 5.89 (1.12) |
| Dong 2018a ¹⁰¹ | China | Cross-sectional | University student gamers with IGD or recreational Internet game use | 86 | NR (NR) | NR/NR/NR | NR | DSM-5 criteria for IGD | NR | NR (NR) | 5.92 (1.14) |
| Kaptsis 2016 ¹⁰² | Australia | Uncontrolled before-after | Adult gamers 18–25 years old | 24 | 24.6 (5.1) | 17/83/0* | Self-report | IGD Checklist - 9 item | NR | NR (NR) | 5.89π (0.86) |
| Kim 2017a ¹⁰³ | South Korea | Observational | Participants with IGD or OCD | 77 | NR (NR) | 21/79/0* | Health professional | Health professional | NR | NR (NR) | NR (NR) |

| | | | | | | | | | | | |
|---------------------------|-------------|---------------------------|------------------------------------------------------|-----|---------------|----------|---------------------|-----------------------------------------------------------|----------|-------------|----------------------|
| Kim 2017c ¹⁰⁴ | South Korea | Observational | Participants with IGD, AUD, or OCD | 225 | NR (NR) | 10/90/0* | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| King 2018a ¹⁰⁵ | Australia | Quasi-experimental | Adult gamers 18-48 years old with gaming problems | 186 | 23.4 (5.2) | NR/95/NR | Self-report | IGD Checklist - 9 item | NR | NR (NR) | NR (NR) |
| King 2017b ¹⁰⁶ | Australia | Uncontrolled before-after | Adult gamers 18-36 years old | 24 | 24.6 (5.1) | 17/83/0* | Self-report | IGD Checklist - 9 item | 9/24 | 37.50* (NR) | NR (NR) |
| Ko 2017 ¹⁰⁷ | Taiwan | Observational | Gamers 20-30 years old with IGD | 174 | NR (20 to 30) | NR/NR/NR | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Ko 2014 ¹⁰⁸ | Taiwan | Cross-sectional | Gamers 20-30 years old with IGD or in IGD remission | 225 | NR (NR) | 16/84/0 | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Koo 2017 ¹⁰⁹ | South Korea | Cross-sectional | Adolescents (middle school students) | 236 | 13.61 (0.87) | 29/71/0 | Health professional | SCI-IGD | 27/236 | 11.44* (NR) | NR (NR) |
| Lee 2016 ¹¹⁰ | South Korea | Observational | Adult gamers with IGD | 48 | NR (NR) | NR/NR/NR | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Lee 2018c ¹¹¹ | South Korea | Case-control | Adolescents 12-18 years old with IGD | 87 | NR (12 to 18) | NR/NR/NR | Self-report | DSM-5 criteria for IGD | 251/3166 | 7.93* (NR) | NR (NR) |
| Li 2018a ¹¹² | China | Observational | Primary and secondary school students 8-15 years old | 241 | 12.09 (1.41) | 43/NR/NR | Self-report | K-scale - Korean Internet Addiction Scale for Adolescents | NR | NR (NR) | Time 1: 31.33 (6.38) |
| | | | | | | | | | | | Time 2: 30.92 (6.87) |
| Paik 2017b ¹¹³ | South Korea | Case-control | Adults 19-47 years old with IGD | 150 | 30.09 (6.343) | NR/77/NR | NR | DSM-5 criteria for IGD | 63/150 | 42.00* (NR) | NR (NR) |
| Park 2016b ¹¹³ | South Korea | Observational | Gamers with IGD | 49 | NR (NR) | 18/82/0* | Health professional | Health professional | NR | NR (NR) | NR (NR) |

| | | | | | | | | | | | |
|---------------------------|-------------|-----------------|---------------------------------------------------|------|---------------|-----------|---------------------|------------------------|----------|-------------|-------------|
| Rho 2016 ¹¹⁴ | South Korea | Cross-sectional | Adult gamers 20-49 years old | 1022 | NR (20 to 49) | 40/60/0 | Self-report | DSM-5 criteria for IGD | 511/3881 | 13.17* (NR) | NR (NR) |
| Ryu 2018 ¹¹⁵ | South Korea | Cross-sectional | Young adults with IGD | 123 | 24.92 (4.71) | NR/79/NR | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Wang 2017a ¹¹⁶ | Taiwan | Cross-sectional | Adult gamers 20-30 years old with IGD | 383 | NR (20 to 30) | 45/55/0 | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Wang 2017b ¹¹⁷ | China | Observational | Gamers with IGD or recreational Internet game use | 70 | NR (NR) | 10/NR/NR | NR | DSM-5 criteria for IGD | NR | NR (NR) | 5.8 (1.10) |
| Wang 2018c ¹¹⁸ | China | Cross-sectional | University student gamers with IGD or RGU | 104 | NR (NR) | NR/62/NR* | NR | DSM-5 criteria for IGD | NR | NR (NR) | 5.86 (1.04) |
| Yeh 2017 ¹¹⁹ | Taiwan | Cross-sectional | Gamers 20-30 years old with IGD | 174 | NR (20 to 30) | 20/80/0* | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Yen 2017a ¹²⁰ | Taiwan | Cross-sectional | Gamers 20-30 years old with IGD | 174 | NR (20 to 30) | 20/80/0* | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Yen 2017b ¹²¹ | Taiwan | Cross-sectional | Gamers 20-30 years old with IGD | 174 | NR (20 to 30) | 20/80/0* | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Yuan 2017 ¹²² | China | Observational | Student gamers with IGD | 87 | NR (NR) | 24/76/0* | Self-report | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |

| | | | | | | | | | | | |
|---------------------------|-----------|-----------------|------------------------------|-----|---------|-----------|---------------------|------------------------|--------|-----------|---------|
| Zhai 2017 ¹²³ | China | Observational | Gamers with IGD | 32 | NR (NR) | NR/69/NR* | NR | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |
| King 2018b ¹²⁴ | Australia | Cross-sectional | Adult gamers 18-56 years old | 630 | NR (NR) | NR/76/NR* | Self-report | IGD Scale - 9 item | 20/630 | 4.00 (NR) | NR (NR) |
| Tian 2018 ¹²⁵ | China | Observational | Adolescents with IGD | 88 | NR (NR) | 45/49/NR* | Health professional | Health professional | NR | NR (NR) | NR (NR) |

Note: No data found for African region; IGD prevalence values were charted to two decimal places. All other values are as reported by authors.

* Estimates were calculated using raw data provided in the study; ‡ Median; π Unclear

CI: Confidence Interval; DSM-5: Diagnostic and Statistical Manual of Mental Disorders, fifth edition; IGD: Internet Gaming Disorder; M Mean; N Sample size;

Num/Den: Prevalence numerator/Prevalence Denominator; NR Data not reported in the study; SD Standard Deviation

Ranges for measures used: C-IGDS: 0-9*; DSM-5 criteria for IGD: 0-9; IGD Checklist - 9 item: No lower or upper limit reported; IGD Scale - 27 item dichotomous: 0-27; IGD Scale - 27 item polytomous: 0-135*; IGD Scale - 27 item polytomous – Turkish: 0-135*; IGD Scale - 9 item dichotomous: 0-9; IGD Scale - 9 item polytomous – Turkish: 0-45*; IGD Scale – dichotomous: No lower or upper limit reported; IGD Scale – polytomous: No lower or upper limit reported; IGD-20 Test – Spanish: 20-100*; IGD-9 Scale: 0-9; IGDQ – German: 0-9*; IGDS-SF9: 9-45; IGDS-SF9 – Italian: 9-45*; IGDT-10: 0-9; K-scale - Korean Internet Addiction Scale for Adolescents: 20-80; PVP Scale: 0-9; VQAQ: 9-45*

Appendix F. Study and population characteristics for studies with general or clinical populations, by gender/sex

| Study | Country | Study Design | Study population description | N | Age (years) <i>M (SD) or M (range)</i> | IGD Reporting Method | IGD Measure/ Instrument/ Assessment | IGD Num/Den | IGD Prevalence (%) <i>Prevalence (95% CI)</i> | IGD Score <i>M (SD)</i> |
|-----------------------------------|-------------|-----------------|------------------------------------------------|------|-------------------------------------------|----------------------|-------------------------------------|-------------|--------------------------------------------------|----------------------------|
| Males – General Population | | | | | | | | | | |
| Bouna-Pyrrou 2015 ²⁰ | Germany | Cross-sectional | Male and female volunteers | 2465 | 30± (24 to 43) ^a | Self-report | DSM-5 questionnaire - German | 17/941 | 1.80 (NR) | NR (NR) |
| Buiza-Aguado 2018 ²¹ | Spain | Cross-sectional | Students 12-18 years old from Málaga | 708 | NR (NR) | Self-report | IGD Scale - 9 item dichotomous | 51/394 | 12.90 (NR) | 2.5 (1.9) |
| Evren 2018 ²³ | Turkey | Cross-sectional | University students and gamers 15-48 years old | 1250 | NR (NR) | Self-report | IGDS-SF9 | NR | NR (NR) | 18.6 (NR 7.43) |
| Jeromin 2016b ²⁵ | Germany | Cross-sectional | Adult gamers 18-75 years old | 894 | NR (NR) | Self-report | IGDQ - German | NR | NR (NR) | 1.7 (1.9π) |
| Király 2017 ²⁶ | Hungary | Cross-sectional | Gamers 14-64 years old | 4887 | NR (NR) | Self-report | IGDT-10 | 124/4517 | 2.75* (NR) | NR (NR) |
| Lemmens 2015 ²⁸ | Netherlands | Cross-sectional | Adults and adolescents 13-40 years old | 2444 | NR (NR) | Self-report | IGD Scale - 9 item dichotomous | NR | 6.80 (NR) | NR (NR) |
| | | | | | | | IGD Scale - dichotomous | NR | NR (NR) | 4.87 (5.88) |
| | | | | | | | IGD Scale - polytomous | NR | NR (NR) | 0.74 (1.02) |
| Monacis 2017 ²⁹ | Italy | Cross-sectional | Students | 712 | NR (NR) | Self-report | IGDS-SF9 - Italian | NR | NR (NR) | 18.67 (9.77) |

| | | | | | | | | | | |
|------------------------------------|---------------|-----------------|---------------------------------------------------|-------|---------------|--------------------------|--------------------------------|-------|---------------------|--------------|
| Monacis 2016 ³⁰ | Italy | Cross-sectional | Students 16 years and older | 687 | NR (NR) | Self-report | IGDS-SF9 - Italian | NR | NR (NR) | 18.75 (9.80) |
| Monacis 2018 ³¹ | Italy | Cross-sectional | Students and gamers | 455 | NR (NR) | Self-report | IGDS-SF9 - Italian | NR | NR (NR) | 16.31 (8.22) |
| Pontes 2017a ³² | Portugal | Cross-sectional | Students 10-18 years old in grades 6, 7, 8, and 9 | 509 | NR (NR) | Self-report | IGDS-SF9 | NR | NR (NR) | 18.6 (5.32) |
| Rehbein 2015 ³⁷ | Germany | Cross-sectional | Students 13-18 years old in grade 9 | 11003 | 14.94 (0.75) | Self-report | Video Game Dependency Scale | NR | 2.02 (1.65 to 2.38) | NR (NR) |
| Vadlin 2018 ⁴⁰ | Sweden | Observational | Adolescents | 1576 | NR (NR) | Self-report | GAIT | NR | NR (NR) | NR (NR) |
| Wartberg 2017c ⁴³ | Germany | Cross-sectional | People 12-25 years old | 1531 | NR (NR) | Self-report | IGD Scale - 9 item dichotomous | NR | 8.40 (6.40 to 10.4) | NR (NR) |
| Wichstrom 2018 ⁴⁵ | Norway | Observational | Children 10 years old | 740 | NR (NR) | Health professional | IGDI | NR | 3.00 (1.00 to 5.00) | NR (NR) |
| De Pasquale 2018 ⁴⁶ | Italy | Cross-sectional | Students 18-25 years old | 221 | NR (NR) | Interview, not specified | IGDS-SF9 | 31/93 | 33.33* (NR) | 28.03 (2.21) |
| Laconi 2017 ⁵⁰ | France | Cross-sectional | Adult gamers 18-30 years old | 418 | NR (NR) | Self-report | IGDT-10 | 7/212 | 3.30* (NR) | 3.6 (3.7) |
| Lopez-Fernandez 2014 ⁵¹ | Spain | Cross-sectional | Adolescent students 11-18 years old | 1996 | NR (11 to 12) | Self-report | PVP Scale | NR | NR (NR) | 2.65 (2.06) |
| | | | | | NR (13 to 15) | Self-report | PVP Scale | NR | NR (NR) | 2.17 (1.82) |
| | | | | | NR (16 to 18) | Self-report | PVP Scale | NR | NR (NR) | 1.81 (1.70) |
| Lopez-Fernandez 2014 ⁵¹ | Great Britain | Cross-sectional | Adolescent students 11-18 years old | 1996 | NR (11 to 12) | Self-report | PVP Scale | NR | NR (NR) | 3.25 (2.18) |
| | | | | | NR (13 to 15) | Self-report | PVP Scale | NR | NR (NR) | 2.8 (2.44) |
| | | | | | NR (16 to 18) | Self-report | PVP Scale | NR | NR (NR) | 2.34 (2.74) |

| | | | | | | | | | | |
|---------------------------------|--------------------------------------|-----------------|------------------------------------------------------------------------|-------|---------------|---------------------|---------------------------|-----------------------------------|---------------------|-------------------------------------------------|
| Tejeiro 2016 ⁵⁶ | Spain | Cross-sectional | Adolescent students 11-17 years old and adult students 20-50 years old | 909 | NR (NR) | Self-report | PVP Scale | NR | NR (NR) | Adolescents: 2.15 (1.70) Adults: 1.39 (1.58) |
| Triberti 2018 ⁵⁷ | Italy | Cross-sectional | Gamers 12-47 years old | 133 | NR (NR) | Self-report | PVP Scale | 22/110 | 20.00* (NR) | NR (NR) |
| Przybylski 2017b ⁵⁶ | United Kingdom | Cross-sectional | Adults | 1899 | NR (NR) | Self-report | DSM-5 criteria for IGD | NR | 0.21 (0.03 to 0.84) | NR (NR) |
| Przybylski 2017c ⁹⁶ | Canada, Germany, United Kingdom, USA | Cross-sectional | Adults 18-24 years old | 10099 | NR (NR) | Self-report | DSM-5 criteria for IGD | NR | 0.80 (0.58 to 1.10) | NR (NR) |
| Snodgrass 2018 ⁸⁰ | USA | Cross-sectional | Gamers | 58 | NR (NR) | Self-report | IGDS-SF9 | Scale cut-off of ≥ 28 : 6/36 | 16.67* (NR) | NR (NR) |
| | | | | | | | | Scale cut-off of ≥ 36 : 2/36 | 5.56* (NR) | NR (NR) |
| Stubblefield 2017 ⁶² | USA | Cross-sectional | Children 11-17 years old | 454 | NR (NR) | Self-report | Problem gaming instrument | 27/213 | 12.70 (NR) | NR (NR) |
| Przybylski 2017a ⁵⁸ | USA | Cross-sectional | Adults 18-24 years old | 1247 | NR (NR) | Self-report | DSM-5 criteria for IGD | NR | 0.97 (0.43 to 2.09) | NR (NR) |
| Przybylski 2017d ⁵⁹ | USA | Cross-sectional | Adults | 5777 | NR (NR) | Self-report | DSM-5 criteria for IGD | NR | 0.38 (0.17 to 0.85) | NR (NR) |
| Cho 2017 ¹²⁶ | South Korea | Cross-sectional | Male adult gamers | 52 | 23.7 (2.3 NR) | Health professional | Health professional | 29/52 | 55.77* (NR) | NR (NR) |
| Kim 2016b ⁷⁰ | South Korea | Cross-sectional | Adult gamers 20-49 years old | 3041 | NR (NR) | Self-report | DSM-5 criteria for IGD | 238/1824 | 13.05* (NR) | NR (NR) |
| Lee 2018a ¹²⁷ | South Korea | Observational | Males 16-27 years old | 41 | 23.1 (2.6 NR) | Health professional | Health professional | 23/40 | 57.50* (NR) | NR (NR) |

| | | | | | | | | | | |
|-------------------------------------|-------------|-----------------|------------------------------------------------|------|-----------------------------|-------------|--------------------------------|----------|-------------|-----------------|
| Na 2017a ⁷⁴ | South Korea | Cross-sectional | Gamers 20-49 years old | 2923 | NR (NR) | Self-report | DSM-5 criteria for IGD | 358/2086 | 17.16* (NR) | NR (NR) |
| Na 2017b ⁷⁵ | South Korea | Cross-sectional | Adults 20-49 years old | 1819 | NR (NR) | Self-report | DSM-5 criteria for IGD | 150/959 | 15.64* (NR) | NR (NR) |
| Paik 2017a ⁷⁶ | South Korea | Cross-sectional | Adult gamers 20-39 years old | 3058 | NR (NR) | Self-report | DSM-5 criteria for IGD | 220/1548 | 14.20 (NR) | NR (NR) |
| Rho 2017 ⁸⁰ | South Korea | Cross-sectional | Adult gamers 20-49 years old | 3568 | NR (NR) | Self-report | DSM-5 criteria for IGD | 290/2036 | 14.24* (NR) | NR (NR) |
| Subramaniam 2016 ⁸² | Singapore | Cross-sectional | Internet users 13-20 years old | 1236 | NR (NR) | Self-report | DSM-5 criteria for IGD | 114/614 | 18.57* (NR) | NR (NR) |
| Yu 2016 ⁸⁶ | South Korea | Cross-sectional | Middle school students 13-15 years old | 2014 | NR (NR) | Self-report | DSM-5 criteria for IGD | 107/1025 | 10.40 (NR) | NR (NR) |
| Females – General Population | | | | | | | | | | |
| Bouna-Pyrrou 2015 ²⁰ | Germany | Cross-sectional | Male and female volunteers | 2465 | 27‡ (23 to 29) ^a | Self-report | DSM-5 questionnaire - German | 10/1524 | 0.70 (NR) | NR (NR) |
| Buiza-Aguado 2018 ²¹ | Spain | Cross-sectional | Students 12-18 years old from Málaga | 708 | NR (NR) | Self-report | IGD Scale - 9 item dichotomous | 8/313 | 2.50 (NR) | 1.1 (1.4) |
| Evren 2018 ²³ | Turkey | Cross-sectional | University students and gamers 15-48 years old | 1250 | NR (NR) | Self-report | IGDS-SF9 | NR | NR (NR) | 13.07 (NR 5.29) |
| Jeromin 2016b ²⁵ | Germany | Cross-sectional | Adult gamers 18-75 years old | 894 | NR (NR) | Self-report | IGDQ - German | NR | NR (NR) | 1.4 (1.8π) |

| | | | | | | | | | | |
|--------------------------------|-------------|-----------------|---------------------------------------------------|-------|--------------|--------------------------|--------------------------------|-------|---------------------|--------------|
| Lemmens 2015 ²⁸ | Netherlands | Cross-sectional | Adults and adolescents 13–40 years old | 2444 | NR (NR) | Self-report | IGD Scale - 9 item dichotomous | NR | 4.00 (NR) | NR (NR) |
| | | | | | | | IGD Scale - dichotomous | NR | NR (NR) | 3.4 (4.60) |
| | | | | | | | IGD Scale - polytomous | NR | NR (NR) | 0.39 (0.72) |
| Monacis 2017 ²⁹ | Italy | Cross-sectional | Students | 712 | NR (NR) | Self-report | IGDS-SF9 - Italian | NR | NR (NR) | 12.46 (6.24) |
| Monacis 2016 ³⁰ | Italy | Cross-sectional | Students 16 years and older | 687 | NR (NR) | Self-report | IGDS-SF9 - Italian | NR | NR (NR) | 12.53 (6.40) |
| Monacis 2018 ³¹ | Italy | Cross-sectional | Students and gamers | 455 | NR (NR) | Self-report | IGDS-SF9 - Italian | NR | NR (NR) | 12.32 (5.75) |
| Pontes 2017a ³² | Portugal | Cross-sectional | Students 10-18 years old in grades 6, 7, 8, and 9 | 509 | NR (NR) | Self-report | IGDS-SF9 | NR | NR (NR) | 12.83 (7.17) |
| Rehbein 2015 ³⁷ | Germany | Cross-sectional | Students 13-18 years old in grade 9 | 11003 | 14.81 (0.71) | Self-report | Video Game Dependency Scale | NR | 0.26 (0.12 to 0.40) | NR (NR) |
| Vadlin 2018 ⁴⁰ | Sweden | Observational | Adolescents | 1576 | NR (NR) | Self-report | GAIT | NR | NR (NR) | NR (NR) |
| Wartberg 2017c ⁴³ | Germany | Cross-sectional | People 12-25 years old | 1531 | NR (NR) | Self-report | IGD Scale - 9 item dichotomous | NR | 2.90 (1.70 to 4.10) | NR (NR) |
| Wichstrom 2018 ⁴⁵ | Norway | Observational | Children 10 years old | 740 | NR (NR) | Health professional | IGDI | NR | 0.50 (0.00 to 1.20) | NR (NR) |
| De Pasquale 2018 ⁴⁶ | Italy | Cross-sectional | Students 18-25 years old | 221 | NR (NR) | Interview, not specified | IGDS-SF9 | 2/128 | 1.56* (NR) | 27.29 (0.76) |
| Laconi 2017 ⁵⁰ | France | Cross-sectional | Adult gamers 18-30 years old | 418 | NR (NR) | Self-report | IGDT-10 | 1/206 | 0.49* (NR) | 2.4 (2.8) |

| | | | | | | | | | | |
|------------------------------------|--------------------------------------|-----------------|------------------------------------------------------------------------|-------|---------------|-------------|---------------------------|--------|---------------------|---------------------------------------------------------------|
| Lopez-Fernandez 2014 ⁵¹ | Spain | Cross-sectional | Adolescent students 11-18 years old | 1996 | NR (11 to 12) | Self-report | PVP Scale | NR | NR (NR) | 1.49 (1.37) |
| | | | | | NR (13 to 15) | Self-report | PVP Scale | NR | NR (NR) | 1.44 (1.52) |
| | | | | | NR (16 to 18) | Self-report | PVP Scale | NR | NR (NR) | 1.02 (1.87) |
| Lopez-Fernandez 2014 ⁵¹ | Great Britain | Cross-sectional | Adolescent students 11-18 years old | 1996 | NR (11 to 12) | Self-report | PVP Scale | NR | NR (NR) | 2.09 (2.22) |
| | | | | | NR (13 to 15) | Self-report | PVP Scale | NR | NR (NR) | 1.76 (1.90) |
| | | | | | NR (16 to 18) | Self-report | PVP Scale | NR | NR (NR) | 1.04 (1.86) |
| Tejeiro 2016 ⁵⁶ | Spain | Cross-sectional | Adolescent students 11-17 years old and adult students 20-50 years old | 909 | NR (NR) | Self-report | PVP Scale | NR | NR (NR) | <i>Adolescents: 1.17 (1.19)</i> <i>Adults: 0.73 (1.07)</i> |
| Triberti 2018 ⁵⁷ | Italy | Cross-sectional | Gamers 12-47 years old | 133 | NR (NR) | Self-report | PVP Scale | 6/23 | 26.09* (NR) | NR (NR) |
| Przybylski 2017b ³⁶ | United Kingdom | Cross-sectional | Adults | 1899 | NR (NR) | Self-report | DSM-5 criteria for IGD | NR | 0.74 (0.32 to 1.60) | NR (NR) |
| Przybylski 2017c ³⁶ | Canada, Germany, United Kingdom, USA | Cross-sectional | Adults 18-24 years old | 10099 | NR (NR) | Self-report | DSM-5 criteria for IGD | NR | 0.56 (0.38 to 0.82) | NR (NR) |
| Stubblefield 2017 ⁶² | USA | Cross-sectional | Children 11-17 years old | 454 | NR (NR) | Self-report | Problem gaming instrument | 10/240 | 4.20 (NR) | NR (NR) |
| Przybylski 2017a ⁵⁸ | USA | Cross-sectional | Adults 18-24 years old | 1247 | NR (NR) | Self-report | DSM-5 criteria for IGD | NR | 1.14 (0.46 to 2.59) | NR (NR) |
| Przybylski 2017d ⁵⁹ | USA | Cross-sectional | Adults | 5777 | NR (NR) | Self-report | DSM-5 criteria for IGD | NR | 0.25 (0.12 to 0.53) | NR (NR) |

| | | | | | | | | | | |
|------------------------------------|-------------|-----------------|------------------------------------------------------|------|------------|---------------------|------------------------|----------|-------------|--------------|
| Kim 2016b ⁷⁰ | South Korea | Cross-sectional | Adult gamers 20-49 years old | 3041 | NR (NR) | Self-report | DSM-5 criteria for IGD | 181/1217 | 14.87* (NR) | NR (NR) |
| Na 2017a ⁷⁴ | South Korea | Cross-sectional | Gamers 20-49 years old | 2923 | NR (NR) | Self-report | DSM-5 criteria for IGD | 136/837 | 16.25* (NR) | NR (NR) |
| Na 2017b ⁷⁵ | South Korea | Cross-sectional | Adults 20-49 years old | 1819 | NR (NR) | Self-report | DSM-5 criteria for IGD | 107/860 | 12.44* (NR) | NR (NR) |
| Paik 2017a ⁷⁶ | South Korea | Cross-sectional | Adult gamers 20-39 years old | 3058 | NR (NR) | Self-report | DSM-5 criteria for IGD | 176/1510 | 11.70 (NR) | NR (NR) |
| Rho 2017 ⁸⁰ | South Korea | Cross-sectional | Adult gamers 20-49 years old | 3568 | NR (NR) | Self-report | DSM-5 criteria for IGD | 191/1532 | 12.47* (NR) | NR (NR) |
| Subramaniam 2016 ⁸² | Singapore | Cross-sectional | Internet users 13-20 years old | 1236 | NR (NR) | Self-report | DSM-5 criteria for IGD | 58/358 | 16.20* (NR) | NR (NR) |
| Yu 2016 ⁸⁶ | South Korea | Cross-sectional | Middle school students 13-15 years old | 2014 | NR (NR) | Self-report | DSM-5 criteria for IGD | 12/999 | 1.20 (NR) | NR (NR) |
| Males – Clinical Population | | | | | | | | | | |
| Kaess 2017 ¹²⁸ | Germany | Observational | Males 13-25 years old with IGD | 49 | NR (NR) | Health professional | Health professional | NR | NR (NR) | 6.88π (1.42) |
| van Rooij 2017 ¹²⁹ | Netherlands | Cross-sectional | Male gamers 12-23 years old who were 'game addicted' | 32 | 17.6 (2.5) | Health professional | C-VAT 2.0 | 29/32 | 91.00 (NR) | NR (NR) |
| | | | | | | Self-report | VAT | NR | NR (NR) | 2.48 (0.6) |
| Bae 2017 ¹³⁰ | South Korea | Cross-sectional | Male adult gamers with IGD, or male adults with ibGD | 44 | NR (NR) | NR | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |
| Choi 2017 ¹³¹ | South Korea | Cross-sectional | Male adult gamers | 71 | NR (NR) | Self-report | IGD Checklist - 9 item | NR | NR (NR) | 6.27 (1.55) |

| | | | | | | | | | | |
|---------------------------|-------------|-----------------|--------------------------------------------------------------------------------------|-----|------------------|---------------------|------------------------|----|---------|------------|
| Choi 2014 ¹³² | South Korea | Observational | Males with IGD, GD, or AUD | 60 | NR (NR) | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Dong 2017a ¹³³ | China | Observational | Male university students with IGD, RGU, or NLFUGU; normal/corrected to normal vision | 58 | NR (NR) | NR | DSM-5 criteria for IGD | NR | NR (NR) | 7.5 (0.71) |
| Dong 2017b ¹³⁴ | China | Cross-sectional | Male university students | 108 | 20.2 NR (1.7 NR) | NR | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |
| Dong 2018b ¹³⁵ | China | Observational | University student gamers with IGD or RGU | 119 | 21.14 (2.43) | NR | DSM-5 criteria for IGD | NR | NR (NR) | 5.8 (1.68) |
| Han 2015 ¹³⁶ | South Korea | Cross-sectional | Male gamers in their thirties with IGD, or males in their thirties with AD | 31 | NR (NR) | NR | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |
| Jeong 2017 ¹³⁷ | South Korea | Case-control | Male adults with IGD | 60 | NR (NR) | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Kim 2015 ¹³⁸ | South Korea | Cross-sectional | Male gamers with IGD | 45 | NR (NR) | NR | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |
| Kim 2016a ¹³⁹ | South Korea | Case-control | Males with IGD | 60 | NR (NR) | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Lee 2017a ¹⁴⁰ | South Korea | Cross-sectional | Male gamers 18-28 years old with IGD | 61 | 23.5 (2.7 NR) | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Lee 2018b ¹⁴¹ | South Korea | Cross-sectional | Males 19-29 years old with IGD, or IGD and ADHD | 60 | 23.7 (2.5) | Health professional | Health professional | NR | NR (NR) | NR (NR) |

| | | | | | | | | | | |
|----------------------------|-------------|---------------------------|------------------------------------------------------------------|-----|---------------|---------------------|------------------------|--------|-------------|---------|
| Lee 2015 ¹⁴² | South Korea | Observational | Male adolescent gamers with IGD | 36 | NR (NR) | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Paik 2017b ¹³ | South Korea | Case-control | Adults 19-47 years old with IGD | 150 | NR (NR) | NR | DSM-5 criteria for IGD | 39/115 | 33.91* (NR) | NR (NR) |
| Park 2017a ¹⁴³ | South Korea | Cross-sectional | Children and adolescent males with ADHD, or with ADHD and IGD | 46 | NR (NR) | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Park 2017b ¹⁴⁴ | South Korea | Observational | Male gamers with IGD or AUD | 77 | NR (NR) | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Park 2018 ¹⁴⁵ | South Korea | Controlled before-after | Male gamers 18-38 years old with IGD | 62 | NR (18 to 38) | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Park 2017d ¹⁴⁶ | South Korea | Cross-sectional | Adult males 18-60 years old who were gamers with IGD, or had AUD | 92 | NR (18 to 60) | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Sakuma 2017 ¹⁴⁷ | Japan | Uncontrolled before-after | Males with IGD | 10 | 16.2 (2.15) | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Seok 2018 ¹⁴⁸ | South Korea | Cross-sectional | Males 20-26 years old with IGD | 40 | NR (NR) | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Shin 2018 ¹⁴⁹ | South Korea | Controlled after | Male adolescents and young adults 12-25 years old with IGD | 64 | NR (NR) | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Son 2015 ¹⁵⁰ | South Korea | Cross-sectional | Male gamers with IGD, or males with AUD | 76 | NR (NR) | Health professional | Health professional | 34/76 | 44.74* (NR) | NR (NR) |

| | | | | | | | | | | |
|---------------------------|-------------|-----------------|----------------------------------------------------|----|---------------|---------------------|------------------------|----|---------|-------------|
| Wang 2016a ¹⁵¹ | China | Observational | Males | 72 | NR (NR) | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Wang 2016b ¹⁵² | China | Observational | Males | 40 | NR (NR) | NR | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |
| Wang 2017c ¹⁵³ | China | Observational | Male university students | 37 | NR (NR) | NR | DSM-5 criteria for IGD | NR | NR (NR) | 6.61 (0.92) |
| Wang 2018b ¹⁵⁴ | China | Cross-sectional | Males | 80 | NR (NR) | Self-report | DSM-5 criteria for IGD | NR | NR (NR) | 5.96 (1.01) |
| Wang 2017d ¹⁵⁵ | China | Observational | Males | 39 | NR (NR) | NR | DSM-5 criteria for IGD | NR | NR (NR) | 5.2 (0.8) |
| Wang 2017f ¹⁵⁶ | China | Observational | Male students | 63 | NR (NR) | NR | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |
| Wang 2017e ¹⁵⁷ | China | Observational | Male university students | 39 | NR (NR) | NR | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |
| Wu 2018b ¹⁵⁸ | China | Observational | Male gamers with IGD | 44 | NR (NR) | Health professional | Health professional | NR | NR (NR) | 5.73 (0.94) |
| Yip 2018 ¹⁵⁹ | China | Observational | Male adult gamers 18-26 years old with IGD | 47 | NR (18 to 26) | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Youh 2017 ¹⁶⁰ | South Korea | Cross-sectional | Males 13-30 years old with MDD and IGD or with MDD | 29 | NR (13 to 30) | π | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |
| Zhang 2016 ¹⁶¹ | China | Observational | Male student gamers | 40 | NR (NR) | NR | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |

| Females – Clinical Population | | | | | | | | | | |
|--------------------------------------|-------------|---------------|-------------------------------------------|-----|--------------|----|------------------------|-------|-------------|-------------|
| Dong 2018b ¹³⁵ | China | Observational | University student gamers with IGD or RGU | 119 | 21.17 (2.10) | NR | DSM-5 criteria for IGD | NR | NR (NR) | 5.72 (1.07) |
| Paik 2017b ¹³ | South Korea | Case-control | Adults 19-47 years old with IGD | 150 | NR (NR) | NR | DSM-5 criteria for IGD | 24/35 | 69.00* (NR) | NR (NR) |

Note: IGD prevalence values were charted to two decimal places. All other values are as reported by authors.

* Estimates were calculated using raw data provided in the study; ‡ Median; ^ Inter-Quartile Range; π Unclear

CI: Confidence Interval; **DSM-5:** Diagnostic and Statistical Manual of Mental Disorders, fifth edition; **IGD:** Internet Gaming Disorder; **M:** Mean; **N:** Sample size;

Num/Den: Prevalence Numerator/Prevalence Denominator; **NR:** Data not reported in the study; **SD:** Standard Deviation

Ranges for measures used: **DSM-5 criteria for IGD:** 0-9; **IGD Checklist - 9 item:** No lower or upper limit reported; **IGD Scale - 9 item dichotomous:** 0-9;

IGD Scale – dichotomous: No lower or upper limit reported; **IGD Scale – polytomous:** No lower or upper limit reported; **IGDQ – German:** 0-9*;

IGDS-SF9: 9-45; **IGDS-SF9 – Italian:** 9-45*; **IGDT-10:** 0-9; **PVP Scale:** 0-9; **VAT:** 0-56*

Appendix G. Study and population characteristics for studies with general or clinical populations, by age groups

| Study | Country | Study Design | Study population description | N | Age (years) <i>M (SD) or M (range)</i> | Gender/ Sex (%) <i>(Male/ Female/ Other)</i> | IGD Reporting Method | IGD Measure/ Instrument/ Assessment | IGD Num/Den | IGD Prevalence (%) <i>Prevalence (95% CI)</i> | IGD Score <i>M (SD)</i> |
|---------------------------------------------------------|-------------|-----------------|-----------------------------------------------|------|-------------------------------------------|------------------------------------------------------------|----------------------|-------------------------------------------|-------------|--------------------------------------------------|----------------------------|
| Children 0-19 years old† – General Population | | | | | | | | | | | |
| Wichstrom 2018 ⁴⁵ | Norway | Observational | Children 10 years old | 740 | 8, 10 NR (NR) | 51/49/0 | Health professional | IGDI | 14/740 | 1.70 (0.70 to 2.70) | NR (NR) |
| Milani 2018 ⁵² | Italy | Cross-sectional | Students 9-19 years old | 612 | 13.94 (2.44) | 53/47/0 | Self-report | VGA questionnaire (revised) | 13/612 | 2.10 (NR) | NR (NR) |
| Jeong 2018 ⁶⁸ | South Korea | Cross-sectional | Adolescents from the 3rd, 4th, and 7th grades | 273 | NR (NR) | 45/55/0* | Health professional | Health professional | 45/273 | 16.48* (NR) | NR (NR) |
| Jeong 2018 ⁶⁸ | South Korea | Cross-sectional | Adolescents from the 3rd, 4th, and 7th grades | 273 | NR (NR) | 45/55/0* | Self-report | DSM-5 criteria for IGD | 47/273 | 17.22* (NR) | NR (NR) |
| Jeong 2018 ⁶⁸ | South Korea | Cross-sectional | Adolescents from the 3rd, 4th, and 7th grades | 273 | NR (NR) | 45/55/0* | Health professional | Health professional | 43/834 | 5.16* (NR) | NR (NR) |
| Adolescents 10-19 years old – General Population | | | | | | | | | | | |
| Hawi 2018 ¹¹ | Lebanon | Cross-sectional | High school students 15–19 years old | 524 | 16.2 (1.0) | NR/48/NR | Self-report | IGD-20 Test | NR | 9.20 (NR) | NR (NR) |
| Wu 2017b ¹⁸ | Iran | Cross-sectional | Adolescent students 12-19 years old | 2363 | 15.6 (1.2) | NR/65/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 24.0 (7.1) |
| Buiza-Aguado 2018 ²¹ | Spain | Cross-sectional | Students 12-18 years old from Málaga | 708 | 15.6 (2.7) | 44/56/0 | Self-report | IGD Scale - 9 item dichotomous | 59/708 | 8.30 (NR) | 2.1 (1.8) |

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|------------------------------------|---------------|-----------------|---------------------------------------------------|-------|------------------------|-----------|-------------|--------------------------------|-----------|---------------------|----------------|
| Lemmens 2015 ²⁸ | Netherlands | Cross-sectional | Adults and adolescents 13–40 years old | 2444 | 17.6 (2.2) | 51/NR/NR | Self-report | IGD Scale - 9 item dichotomous | NR | 3.90 (NR) | NR (NR) |
| | | | | | | | | IGD Scale - dichotomous | NR | NR (NR) | 3.22 (5.07) |
| | | | | | | | | IGD Scale - polytomous | NR | NR (NR) | 1.51 (0.91) |
| Pontes 2017a ³² | Portugal | Cross-sectional | Students 10-18 years old in grades 6, 7, 8, and 9 | 509 | 13.02 (1.64) | NR/54/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 15.92 (6.99) |
| Pontes 2016 ³³ | Slovenia | Cross-sectional | Students in grade 8 12-16 years old | 1071 | 13.44 (0.59) | NR/50/NR | Self-report | IGDS-SF9 | 26/1071 | 2.60 (1.70 to 3.70) | NR (NR) |
| Rehbein 2015 ³⁷ | Germany | Cross-sectional | Students 13-18 years old in grade 9 | 11003 | 14.88 (0.74) | 49/51/0* | Self-report | Video Game Dependency Scale | 128/11003 | 1.16 (0.96 to 1.36) | NR (NR) |
| Vadlin 2018 ⁴⁰ | Sweden | Observational | Adolescents | 1576 | 13, 15, 16, 18 NR (NR) | 58/NR/NR | Self-report | GAIT | NR | NR (NR) | NR (NR) |
| Wartberg 2017a ⁴¹ | Germany | Cross-sectional | Adolescents 12-14 years old | 1095 | 12.99 (0.82) | 49/51/0 | Self-report | IGD Scale - 9 item dichotomous | 260/1095 | 23.74* (NR) | NR (NR) |
| Wartberg 2017b ⁴² | Germany | Cross-sectional | Adolescents 12-14 years old | 1095 | 12.99 (0.82) | 49/51/0 | Self-report | IGD Scale - 9 item dichotomous | 260/1095 | 5.50 (NR) | NR (NR) |
| Wartberg 2018 ⁴⁴ | Germany | Observational | Adolescents 12-14 years old | 1095 | Time 1: 12.99 (0.82) | 49/51/0 | NR | IGD Scale - 9 item dichotomous | 242/985 | 24.57* (NR) | NR (NR) |
| | | | | | Time 2: 13.89 (0.89) | 49/51/0 | NR | IGD Scale - 9 item dichotomous | 257/985 | 26.09* (NR) | NR (NR) |
| Gunuc 2015 ⁴⁹ | Turkey | Cross-sectional | Adolescents 15-18 years old | 131 | NR (15 to 18) | NR/NR/NR | Self-report | VGAQ | 21/131 | 16.00 (NR) | 21.435 (6.437) |
| Lopez-Fernandez 2014 ⁵¹ | Spain | Cross-sectional | Adolescent students 11-18 years old | 1996 | NR (11 to 18) | 41/58/NR* | Self-report | PVP Scale | 81/1047 | 7.74* (NR) | 1.74 (1.70) |
| Lopez-Fernandez 2014 ⁵¹ | Great Britain | Cross-sectional | Adolescent students 11-18 years old | 1996 | NR (11 to 18) | 41/58/NR* | Self-report | PVP Scale | 179/949 | 18.86* (NR) | 2.47 (2.33) |

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|---------------------------------|-------------|-----------------|------------------------------------------------------------------------|------|-----------------|-----------|---------------------|--------------------------------|----------|------------|--------------------------------------|
| Peeters 2018 ⁵⁴ | Netherlands | Observational | Adolescents 11-15 years old | 544 | 13.9 (0.74) | NR/49/NR | Self-report | IGD Scale - 9 item dichotomous | NR | NR (NR) | Time 1: 0.686 (1.348) |
| | | | | | | | | | | | Time 2: 0.738 (1.453) |
| Tejeiro 2016 ⁵⁶ | Spain | Cross-sectional | Adolescent students 11-17 years old and adult students 20-50 years old | 909 | NR (NR) | 50/50/0 | Self-report | PVP Scale | NR | NR (NR) | 1.67 (1.55) |
| Stubblefield 2017 ⁶² | USA | Cross-sectional | Children 11-17 years old | 454 | 13.7 (1.9) | 53/47/NR | Self-report | Problem gaming instrument | 37/454 | 8.20 (NR) | NR (NR) |
| Jo 2018 ⁶⁹ | South Korea | Cross-sectional | Adolescent gamers 10-19 years old | 121 | 14.1 (10 to 19) | 26/74/0 | Health professional | Health professional | 46/121 | 38.00 (NR) | NR (NR) |
| King 2016 ⁷¹ | Australia | Cross-sectional | Secondary school students 12 years and older | 824 | 14.1 (1.5) | 51/49/0* | Self-report | IGD Checklist - 12 item | 26/824 | 3.10 (NR) | NR (NR) |
| Lee 2017b ⁷³ | South Korea | Cross-sectional | First year middle school students | 330 | NR (NR) | 51/49/0 | Health professional | Health professional | 16/330 | 4.90 (NR) | NR (NR) |
| | | | | | | | | | | | Author-defined severe cut-off: 4/330 |
| Rao 2017 ⁷⁹ | China | Cross-sectional | Students in grades 7, 8, 9, and 10 | 2590 | 14.1 (NR) | 40/60/NR* | Self-report | IGDS-SF9 | NR | NR (NR) | NR (NR) |
| Yu 2016 ⁸⁶ | South Korea | Cross-sectional | Middle school students 13-15 years old | 2014 | 14.5 (0.50) | 50/51/NR* | Self-report | DSM-5 criteria for IGD | 119/2014 | 5.90 (NR) | 16.63 (7.6) |
| King 2017c ⁹¹ | Australia | Cross-sectional | Students 12-17 years old | 824 | 14.1 (1.5) | 51/49/NR* | Self-report | IGD Checklist - 12 item | 25/799 | 3.10 (NR) | NR (NR) |
| Schneider 2018 ⁹³ | Australia | Cross-sectional | Adolescents 12-19 years old | 823 | 14.2 (1.4) | 51/49/0* | Self-report | IGD Checklist - 12 item | 26/823 | 3.20 (NR) | NR (NR) |

| Adults 18 years and older – General Population | | | | | | | | | | | |
|------------------------------------------------|----------------|-----------------|------------------------------------------------------------------------|------|------------------------|----------|--------------------------|--------------------------------|--------|--------------|---------------|
| Deleuze 2017 ²² | Belgium | Observational | Adult gamers 18-39 years old | 97 | 22.21 (3.73) | NR/87/NR | Self-report | DSM-5 criteria for IGD | 32/97 | 33.00 (NR) | NR (NR) |
| Jeromin 2016a ²⁴ | Germany | Observational | Adults | 87 | NR (NR) | 0/100/0 | Self-report | IGDQ - German | 29/686 | 5.30 (NR) | NR (NR) |
| Jeromin 2016b ²⁵ | Germany | Cross-sectional | Adult gamers 18-75 years old | 894 | 26.49 (8.46 NR) | 13/87/0 | Self-report | IGDQ - German | 71/894 | 7.94 (1.86π) | 1.70 (1.86π) |
| Lemmens 2015 ²⁸ | Netherlands | Cross-sectional | Adults and adolescents 13–40 years old | 2444 | Ages 31-40: 35.9 (2.8) | 51/NR/NR | Self-report | IGD Scale - 9 item dichotomous | NR | 5.50 (NR) | NR (NR) |
| | | | | | Ages 21-30: 25.1 (2.8) | 51/NR/NR | Self-report | IGD Scale - 9 item dichotomous | NR | 6.70 (NR) | NR (NR) |
| | | | | | Ages 31-40: 35.9 (2.8) | 51/NR/NR | Self-report | IGD Scale - dichotomous | NR | NR (NR) | 4.48 (5.14) |
| | | | | | Ages 21-30: 25.1 (2.8) | 51/NR/NR | Self-report | IGD Scale - dichotomous | NR | NR (NR) | 4.63 (5.90) |
| | | | | | Ages 31-40: 35.9 (2.8) | 51/NR/NR | Self-report | IGD Scale - polytomous | NR | NR (NR) | 1.57 (0.87) |
| | | | | | Ages 21-30: 25.1 (2.8) | 51/NR/NR | Self-report | IGD Scale - polytomous | NR | NR (NR) | 1.61 (0.97) |
| Pontes 2017b ³⁴ | United Kingdom | Cross-sectional | Adult gamers | 272 | 41.61 (14.03) | NR/51/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 14.04 (5.67) |
| De Pasquale 2018 ⁴⁶ | Italy | Cross-sectional | Students 18-25 years old | 221 | 21.56 (1.42) | 58/42/0* | Interview, not specified | IGDS-SF9 | 33/221 | 14.90 (NR) | NR (NR) |
| Laconi 2017 ⁵⁰ | France | Cross-sectional | Adult gamers 18-30 years old | 418 | 21.9 (3) | 49/51/0 | Self-report | IGDT-10 | 8/418 | 1.90 (NR) | 28.3 (5.3) |
| Taquet 2017 ⁵⁵ | France | Cross-sectional | Adult gamers 18-53 years old | 124 | 25.274 (7.424) | 15/85/0* | Self-report | PVP Scale | NR | NR (NR) | 4.226 (1.878) |
| Tejeiro 2016 ⁵⁶ | Spain | Cross-sectional | Adolescent students 11-17 years old and adult students 20-50 years old | 909 | NR (NR) | 50/50/0 | Self-report | PVP Scale | NR | NR (NR) | 0.96 (1.31) |

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|--------------------------------|--------------------------------------|-----------------|---------------------------------|-------|------------------|-----------|---------------------|--------------------------------|---------|-----------------------------|--------------|
| Przybylski 2016a ³⁵ | United Kingdom | Cross-sectional | Adults 18 years and older | 1899 | NR (NR) | 50/50/0* | Self-report | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |
| Przybylski 2017b ³⁶ | United Kingdom | Cross-sectional | Adults | 1899 | NR (NR) | 50/50/0* | Self-report | DSM-5 criteria for IGD | NR | 0.47 (0.23 to 0.93) | NR (NR) |
| Przybylski 2016b ³⁵ | Canada, Germany, United Kingdom, USA | Cross-sectional | Adults 18–24 years | 10009 | NR (18 to 24) | 50/50/0* | Self-report | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |
| Przybylski 2017c ³⁶ | Canada, Germany, United Kingdom, USA | Cross-sectional | Adults 18–24 years old | 10099 | NR (18 to 24) | 49/50/NR* | Self-report | DSM-5 criteria for IGD | NR | 0.68 (0.53 to 0.87) | NR (NR) |
| Pontes 2017b ³⁴ | USA | Cross-sectional | Adult gamers | 405 | 32.57 (11.33) | NR/62/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 18.06 (7.36) |
| Stockdale 2018 ⁶¹ | USA | Cross-sectional | Adult university student gamers | 174 | NR (NR) | NR/NR/NR | Self-report | IGD Scale - 9 item | 87/1205 | 7.22* (NR) | NR (NR) |
| Weinstein 2017 ⁶³ | USA | Observational | Adults | 2316 | NR (NR) | 62/38/0* | Health professional | Health professional | NR | Time 1: 1.49 (1.11 to 2.00) | 0.56 (1.13) |
| | | | | | | | | | | Time 2: 0.99 (0.65 to 1.51) | 0.47 (0.97) |
| Allen 2018 ⁶⁴ | USA | Cross-sectional | Student gamers 18-40 years old | 315 | 19.34 (2.01) | 19/81/0 | Self-report | IGD Scale - 27 item polytomous | 18/315 | 5.70 (NR) | 0.78 (0.81) |
| Bargerion 2017 ⁶⁵ | USA | Cross-sectional | Adults | 257 | 21.81 (6.80) | NR/NR/NR | Self-report | DSM-5 criteria for IGD | 21/257 | 8.70 (NR) | 1.92 (1.77) |
| Carlisle 2018 ⁶⁶ | USA | Cross-sectional | Adult gamers 18-95 years old | 1881 | 28.27 (18 to 95) | 39/59/2 | Self-report | IGDT-10 | 79/1881 | 4.20 (NR) | 1.16 (1.54) |
| Sioni 2017 ⁶⁷ | USA | Cross-sectional | Adult gamers 18-77 years old | 394 | 34.3 (11.6) | NR/50/NR | Self-report | IGD Scale - 9 item dichotomous | 102/394 | 25.90 (NR) | 11.8 (2.7) |

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|--------------------------------|-------------|-----------------|------------------------------|------|---------------|-----------|-------------|------------------------|----------|---------------------|--------------|
| Przybylski 2017a ⁵⁸ | USA | Cross-sectional | Adults 18–24 years old | 1247 | NR (18 to 24) | 42/58/0* | Self-report | DSM-5 criteria for IGD | NR | 1.04 (0.58 to 1.83) | NR (NR) |
| Przybylski 2017d ⁵⁹ | USA | Cross-sectional | Adults | 5777 | 46.59 (17.80) | 58/42/0* | Self-report | DSM-5 criteria for IGD | NR | 0.32 (0.18 to 0.56) | NR (NR) |
| Pontes 2017b ³⁴ | India | Cross-sectional | Adult gamers | 336 | 30.37 (8.90) | NR/68/NR | Self-report | IGDS-SF9 | NR | NR (NR) | 25.57 (7.64) |
| Kim 2016b ⁷⁰ | South Korea | Cross-sectional | Adult gamers 20-49 years old | 3041 | NR (NR) | 40.0/60/0 | Self-report | DSM-5 criteria for IGD | 419/3041 | 13.80 (NR) | NR (NR) |
| | | | | | NR (20 to 29) | 40.0/60/0 | Self-report | DSM-5 criteria for IGD | 160/1221 | 13.10* (NR) | NR (NR) |
| | | | | | NR (30 to 39) | 40.0/60/0 | Self-report | DSM-5 criteria for IGD | 175/1215 | 14.40* (NR) | NR (NR) |
| | | | | | NR (40 to 49) | 40.0/60/0 | Self-report | DSM-5 criteria for IGD | 84/605 | 13.88* (NR) | NR (NR) |
| King 2017a ⁷² | Australia | Cross-sectional | Adult gamers 18-56 years old | 630 | 25.8 (7.1) | NR/76/NR* | Self-report | IGD Checklist - 9 item | 20/630 | 3.17* (NR) | NR (NR) |
| Na 2017a ⁷⁴ | South Korea | Cross-sectional | Gamers 20-49 years old | 2923 | NR (20 to 49) | 29/71/0* | Self-report | DSM-5 criteria for IGD | 494/2923 | 16.90* (NR) | NR (NR) |
| | | | | | NR (20 to 29) | 29/71/0* | Self-report | DSM-5 criteria for IGD | 180/1147 | 15.69* (NR) | NR (NR) |
| | | | | | NR (30 to 39) | 29/71/0* | Self-report | DSM-5 criteria for IGD | 222/1233 | 18.00* (NR) | NR (NR) |
| | | | | | NR (40 to 49) | 29/71/0* | Self-report | DSM-5 criteria for IGD | 92/543 | 16.94* (NR) | NR (NR) |

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|-----------------------------|---------------|-----------------|-------------------------------------|------|---------------|----------|-------------|------------------------|----------|---------------------|-------------|
| Na 2017b ⁷⁵ | South Korea | Cross-sectional | Adults 20-49 years old | 1819 | NR (20 to 49) | 47/53/0 | Self-report | DSM-5 criteria for IGD | 257/1819 | 14.13* (NR) | NR (NR) |
| | | | | | NR (20 to 29) | 47/53/0 | Self-report | DSM-5 criteria for IGD | 89/669 | 13.30* (NR) | NR (NR) |
| | | | | | NR (30 to 39) | 47/53/0 | Self-report | DSM-5 criteria for IGD | 120/804 | 14.93* (NR) | NR (NR) |
| | | | | | NR (40 to 39) | 47/53/0 | Self-report | DSM-5 criteria for IGD | 48/346 | 13.87* (NR) | NR (NR) |
| Paik 2017a ⁷⁶ | South Korea | Cross-sectional | Adult gamers 20-39 years old | 3058 | 26.95 (5.859) | NR/NR/NR | Self-report | | 396/3058 | 12.90 (NR) | NR (NR) |
| Rho 2017 ⁸⁰ | South Korea | Cross-sectional | Adult gamers 20-49 years old | 3568 | NR (20 to 49) | 43/57/0 | Self-report | DSM-5 criteria for IGD | 481/3568 | 13.50 (NR) | NR (NR) |
| | | | | | NR(20 to 29) | 43/57/0 | Self-report | DSM-5 criteria for IGD | 170/1259 | 13.50* (NR) | NR (NR) |
| | | | | | NR(30 to 39) | 43/57/0 | Self-report | DSM-5 criteria for IGD | 215/1559 | 13.79* (NR) | NR (NR) |
| | | | | | NR(40 to 49) | 43/57/0 | Self-report | DSM-5 criteria for IGD | 96/750 | 12.80* (NR) | NR (NR) |
| Sigerson 2017 ⁸¹ | China | Cross-sectional | Adult gamers 18-60 years old | 502 | 37.1 (13.3) | 50/50/0* | Self-report | C-IGDS | NR | NR (NR) | 1.29 (1.73) |
| Wu 2017a ⁸⁴ | China, Taiwan | Cross-sectional | Adult online gamers 18-82 years old | 383 | 23.7 (6.7) | 45/55/0 | Self-report | DSM-5 criteria for IGD | 64/383 | 16.71* (NR) | NR (NR) |
| Wu 2018a ⁸⁵ | China | Cross-sectional | Adults 18-97 years old | 1000 | 40.0 (15.3) | 56/44/0 | Self-report | DSM-5 criteria for IGD | 20/1000 | 2.00 (1.10 to 2.90) | NR (NR) |
| Yu 2018 ⁸⁷ | China | Cross-sectional | Adult gamers 18-67 years old | 327 | 31.93 (9.04) | NR/79/NR | Self-report | DSM-5 criteria for IGD | NR | 2.30 (NR) | NR (NR) |

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|----------------------------------------------------------|-------------|-----------------|------------------------------------------------------|------|---------------|-----------|---------------------|-----------------------------------------------------------|--------|-------------|-------------------------|
| Adams 2018 ⁸⁸ | Australia | Observational | Adult gamers 18-29 years old | 125 | 23.34 (3.39) | 25/75/0 | Self-report | IGDS-SF9 | NR | NR (NR) | Time 1: 19.48 (7.07) |
| | | | | | | | | | | | Time 2: 18.67 (SD 6.86) |
| | | | | | | | | | | | Time 3: 17.78 (SD 5.80) |
| Burleigh 2018 ⁸⁹ | Australia | Observational | Adult gamers 18-29 years old | 125 | 23.02 (3.43) | 25/75/0 | Self-report | IGDS-SF9 | NR | NR (NR) | Time 1: 19.48 (7.06) |
| | | | | | | | | | | | Time 2: 18.67 (6.86) |
| | | | | | | | | | | | Time 3: 17.78 (5.80) |
| Liew 2018 ⁹² | Australia | Observational | Adult gamers 18-29 years old | 125 | NR (18 to 29) | 25/75/0 | Self-report | IGDS-SF9 | NR | NR (NR) | Time 1: 19.44 (7.07) |
| | | | | | | | | | | | Time 2: 18.8 (6.91) |
| | | | | | | | | | | | Time 3: 17.95 (5.93) |
| Children 0-19 years old† – Clinical Population | | | | | | | | | | | |
| Krossbakken 2018 ⁹⁷ | Norway | RCT | Guardians of children 8–12 years old | 1657 | 10.1 (NR) | 46/53/NR* | Parent report | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |
| Li 2018a ¹¹² | China | Observational | Primary and secondary school students 8-15 years old | 241 | 12.09 (1.41) | 43/NR/NR | Self-report | K-scale - Korean Internet Addiction Scale for Adolescents | NR | NR (NR) | Time 1: 31.33 (6.38) |
| | | | | | | | | | | | Time 2: 30.92 (6.87) |
| Adolescents 10-19 years old – Clinical Population | | | | | | | | | | | |
| Koo 2017 ¹⁰⁹ | South Korea | Cross-sectional | Adolescents (middle school students) | 236 | 13.61 (0.87) | 29/71/0 | Health professional | SCI-IGD | 27/236 | 11.44* (NR) | NR (NR) |

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|--------------------------------------------------------|-------------|---------------------------|-----------------------------------------------------|-----|---------------|-----------|---------------------|------------------------|----------|-------------|--------------|
| Lee 2018c ¹¹¹ | South Korea | Case-control | Adolescents 12-18 years old with IGD | 87 | NR (12 to 18) | NR/NR/NR | Self-report | DSM-5 criteria for IGD | 251/3166 | 7.93* (NR) | NR (NR) |
| Tian 2018 ¹²⁵ | China | Observational | Adolescents with IGD | 88 | NR (NR) | 45/49/NR* | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Adults 18 years and older – Clinical Population | | | | | | | | | | | |
| Mallorquí-Bagué 2017 ⁹⁸ | Spain | Cross-sectional | Adults with IGD or online gambling disorder | 288 | NR (NR) | 5/95/0* | Health professional | Health professional | 27/288 | 9.38* (NR) | NR (NR) |
| Sanders 2017 ¹² | Canada | Cross-sectional | Adults | 542 | π | 39/61/7 | Self-report | DSM-5 criteria for IGD | 39/1238 | 3.20 (NR) | NR (NR) |
| Cai 2016 ⁹⁹ | China | Observational | Adult gamers with IGD | 57 | NR (NR) | NR/79/NR* | Self-report | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |
| Kaptsis 2016 ¹⁰² | Australia | Uncontrolled before-after | Adult gamers 18–25 years old | 24 | 24.6 (5.1) | 17/83/0* | Self-report | IGD Checklist - 9 item | NR | NR (NR) | 5.89π (0.86) |
| King 2018a ¹⁰⁵ | Australia | Quasi-experimental | Adult gamers 18-48 years old with gaming problems | 186 | 23.4 (5.2) | NR/95/NR | Self-report | IGD Checklist - 9 item | NR | NR (NR) | NR (NR) |
| King 2017b ¹⁰⁶ | Australia | Uncontrolled before-after | Adult gamers 18-36 years old | 24 | 24.6 (5.1) | 17/83/0* | Self-report | IGD Checklist - 9 item | 9/24 | 37.50* (NR) | NR (NR) |
| Ko 2017 ¹⁰⁷ | Taiwan | Observational | Gamers 20-30 years old with IGD | 174 | NR (20 to 30) | NR/NR/NR | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Ko 2014 ¹⁰⁸ | Taiwan | Cross-sectional | Gamers 20-30 years old with IGD or in IGD remission | 225 | NR (NR) | 16/84/0 | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Lee 2016 ¹¹⁰ | South Korea | Observational | Adult gamers with IGD | 48 | NR (NR) | NR/NR/NR | Health professional | Health professional | NR | NR (NR) | NR (NR) |

| | | | | | | | | | | | |
|---------------------------|-------------|-----------------|---------------------------------------|------|---------------|-----------|---------------------|------------------------|----------|-------------|---------|
| Paik 2017b ¹³ | South Korea | Case-control | Adults 19-47 years old with IGD | 150 | 30.09 (6.343) | NR/77/NR | NR | DSM-5 criteria for IGD | 63/150 | 42.00* (NR) | NR (NR) |
| Rho 2016 ¹¹⁴ | South Korea | Cross-sectional | Adult gamers 20-49 years old | 1022 | NR (20 to 49) | 40/60/0 | Self-report | DSM-5 criteria for IGD | 511/3881 | 13.17* (NR) | NR (NR) |
| Ryu 2018 ¹¹⁵ | South Korea | Cross-sectional | Young adults with IGD | 123 | 24.92 (4.71) | NR/79/NR | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Wang 2017a ¹¹⁶ | Taiwan | Cross-sectional | Adult gamers 20-30 years old with IGD | 383 | NR (20 to 30) | 45/55/0 | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Yeh 2017 ¹¹⁹ | Taiwan | Cross-sectional | Gamers 20-30 years old with IGD | 174 | NR (20 to 30) | 20/80/0* | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Yen 2017a ¹²⁰ | Taiwan | Cross-sectional | Gamers 20-30 years old with IGD | 174 | NR (20 to 30) | 20/80/0* | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Yen 2017b ¹²¹ | Taiwan | Cross-sectional | Gamers 20-30 years old with IGD | 174 | NR (20 to 30) | 20/80/0* | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| King 2018b ¹²⁴ | Australia | Cross-sectional | Adult gamers 18-56 years old | 630 | NR (NR) | NR/76/NR* | Self-report | IGD Scale - 9 item | 20/630 | 4.00 (NR) | NR (NR) |

Note: IGD prevalence values were charted to two decimal places. All other values are as reported by authors.

* Estimates were calculated using raw data provided in the study; † Does not include adolescent-only populations; ‡ Median; π Unclear

CI: Confidence Interval; **DSM-5:** Diagnostic and Statistical Manual of Mental Disorders, fifth edition; **IGD:** Internet Gaming Disorder; **M:** Mean; **N:** Sample size;

Num/Den: Prevalence Numerator/Prevalence Denominator; **NR:** Data not reported in the study; **SD:** Standard Deviation

Ranges for measures used: **C-IGDS:** 0-9*; **DSM-5 criteria for IGD:** 0-9; **IGD Checklist - 9 item:** No lower or upper limit reported; **IGD Scale - 27 item polytomous:** 0-135*;

IGD Scale - 9 item dichotomous: 0-9; **IGD Scale – dichotomous:** No lower or upper limit reported; **IGD Scale – polytomous:** No lower or upper limit reported;

IGDQ – German: 0-9*; **IGDS-SF9:** 9-45; **IGDT-10:** 0-9; **K-scale - Korean Internet Addiction Scale for Adolescents:** 20-80; **PVP Scale:** 0-9; **VGAQ:** 9-45*

Appendix H. Study and population characteristics for studies with populations undergoing an intervention (severe)

| Study | Country | Study Design | Study population description | N | Age (years) <i>M (SD) or M (range)</i> | Gender/ Sex (%) <i>(Male/ Female/ Other)</i> | IGD Reporting Method | IGD Measure/ Instrument/ Assessment | IGD Num/Den | IGD Prevalence (%) <i>Prevalence (95% CI)</i> | IGD Score <i>M (SD)</i> |
|-------------------------------------|-------------|---------------------------|--------------------------------------------------------------------|----|-------------------------------------------|------------------------------------------------------------|-------------------------------------|-------------------------------------------|-------------|--------------------------------------------------|----------------------------|
| European Region | | | | | | | | | | | |
| González-Bueso 2018 ¹⁶² | Spain | Controlled before-after | Males 12-21 years old with IGD | 60 | NR (NR) | 0/100/0 | Self-report and health professional | DQVMIA | NR | NR (NR) | NR (NR) |
| Martín-Fernández 2017 ¹⁷ | Spain | Uncontrolled before-after | Children and adolescents 12-17 years old with IGD | 59 | 14.83 (1.45) | NR/97/NR | Health professional | Health professional | 59/86 | 68.60* (NR) | NR (NR) |
| Region of the Americas | | | | | | | | | | | |
| Li 2018b ¹⁵ | USA | RCT | Adult gamers 18-35 years old who met 3 or more DSM-5 IGD criteria | 30 | 25 (5.4) | 17/80/3 | Health professional | Health professional | 23/30 | 76.60 (NR) | 6.0 (1.9) |
| Li 2017b ¹⁴ | USA | RCT | Adults gamers 18-35 years old who met 3 or more DSM-5 IGD criteria | 30 | 25.0 (5.4) | 17/80/3 | Health professional | Health professional | 23/30 | 76.60 (NR) | 6.0 (1.9) |
| Li 2017a ¹⁶ | USA | RCT | Adults | 30 | 25.0 (5.4) | 17/80/3.3 | Self-report | DSM-5 criteria for IGD | 23/30 | 76.60 (NR) | 5.7 (1.9) |
| Western Pacific Region | | | | | | | | | | | |
| Bae 2018 ¹⁶³ | South Korea | Uncontrolled before-after | Male adults with IGD or ibGD | 47 | NR (NR) | 0/100/0 | NR | DSM-5 criteria for IGD | NR | NR (NR) | NR (NR) |
| Kim 2017b ¹⁶⁴ | South Korea | Controlled before-after | Male gamers with IGD | 49 | NR (NR) | 0/100/0 | Health professional | Health professional | NR | NR (NR) | NR (NR) |

| | | | | | | | | | | | |
|---------------------------|-------------|-------------------------|--------------------------------------------------------------------|-----|---------------|----------|---------------------|---------------------|---------|-------------|---------|
| Lim 2016 ¹⁶⁵ | South Korea | Controlled before-after | Male gamers with IGD | 84 | NR (NR) | 0/100/0 | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Park 2016a ¹⁶⁶ | South Korea | RCT | Adolescent males 13-18 years old with ADHD and IGD | 84 | NR (13 to 18) | 0/100/0 | Health professional | Health professional | 84/106 | 79.25* (NR) | NR (NR) |
| Park 2017c ¹⁶⁷ | South Korea | Controlled before-after | Males with IGD | 47 | NR (NR) | 0/100/0 | Health professional | Health professional | NR | NR (NR) | NR (NR) |
| Song 2016 ¹⁶⁸ | South Korea | RCT | Adolescent and adult males 13-45 years old with problematic gaming | 119 | NR (13 to 45) | 0/100/0 | Health professional | Health professional | 119/236 | 50.42* (NR) | NR (NR) |
| Yao 2017 ¹⁶⁹ | China | Controlled before-after | Adult gamers 18-26 years old with IGD | 46 | NR (18 to 26) | NR/NR/NR | Health professional | Health professional | NR | NR (NR) | NR (NR) |

Note: No data found for African region, Eastern Mediterranean region, and South East Asia region; IGD prevalence values were charted to two decimal places. All other values are as reported by authors.

* Estimates were calculated using raw data provided in the study; **CI:** Confidence Interval; **DSM-5:** Diagnostic and Statistical Manual of Mental Disorders, fifth edition;

IGD: Internet Gaming Disorder; **M:** Mean; **N:** Sample size; **Num/Den:** Prevalence Numerator/Prevalence Denominator; **NR:** Data not reported in the study; **SD:** Standard Deviation

Ranges for measures used: DSM-5 criteria for IGD: 0-9