Biopsychosocial Factors of Gaming Disorder: A Systematic Review

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Background/Significance

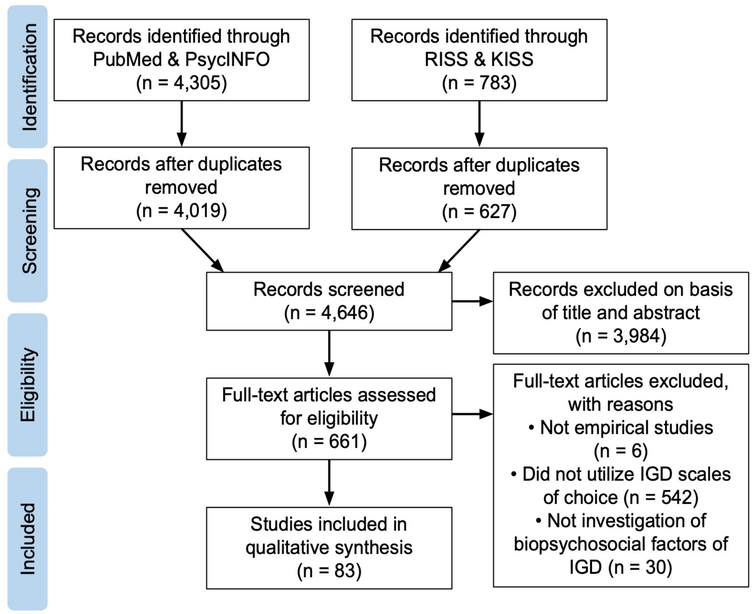
- The number of video gamers has marked 2.69 billion by the end of 2020 and is expected to grow (Fernandes, 2020).
- While healthy usage of gaming brings certain benefits, problematic gaming has been associated with negative consequences (Sublette & Mullan, 2012; Granic, Lobel, & Engels, 2014).
- There has been an ongoing debate on the issue of internet gaming disorder (IGD) being recognized as a disorder (Petry et al., 2014).
- Existing systematic reviews on IGD
  - Mihara & Higuchi (2017): cross-sectional and longitudinal studies of IGD (published ~May 2016)
  - Paulus et al. (2018): literature (published ~August 2016) that investigated factors of IGD in adolescents / children
  - Sugaya et al. (2019): literature (published ~February 2018) that investigated biopsychosocial factors of IGD in adolescents / children
- **Limitations of prior reviews & gap in the field**
  - 40+ diagnostic tools are being used; hard to compare the findings
  - Updated literature search is needed considering the increased attention IGD has received within the last years
- **Significance of the present review**
  - Systematically identified & summarized up-to-date findings of studies that used diagnostic tools of choice to investigate biopsychosocial factors of IGD
    - Advanced psychometric properties: AICA-Sgaming, GAS-7, IGDT-10, IGDS9-SF, Lemmens IGD-9 (King et al., 2020)

Method

- **Databases**: PsycINFO, PubMed, RISS, KISS
- **Search terms** (title or abstract):
  - ("pathology*" OR "problem*" OR "compulsive" OR "overuse" OR "abuse" OR "dependen*" OR "disorder*" OR "excess*" OR "addict*") AND ("video" OR "computer" OR "internet" OR "online" OR "offline") AND ("gaming" OR "game")
- **Inclusion criteria**
  - (1) Published up to May 2021
  - (2) Published in peer-reviewed journals
  - (3) Written in English or Korean
  - (4) Empirical studies with primary data
  - (5) Full text availability
  - (6) Investigated biopsychosocial factors of IGD
  - (7) Used Lemmens IGD-9, GAS-7, IGDS9-SF, AICA-Sgaming, or IGDT10 to assess IGD

Figure

*** PRISMA Flowchart**



Results

- **Classifications** ***11 studies included in both biological & psychological*
  1) Biological factors (n=8)
     - Reward, self-concept, brain structure, functional connectivity
  2) Psychological factors (n=57)
     - Psychiatric symptoms, psychological health, emotion regulation, personality traits, stress, flow, cognition, reward/discounting/impulsivity, self-concept, sleep problems, psychological needs, COVID-19
  3) Social factors (n=29)
     - Family, social interaction, culture, friends/school, social support
- **Characteristics**
  - 69% published within the last 3 years (2019-2021)
  - Studies carried out in Europe (n=35), Asia (n=22), Middle East (n=13), North America (n=3), South America (n=1), and worldwide (n=9)
  - Only males included (n=6)
  - Young adults/adult population (n=45), adolescents/children (n=28), all age ranges (n=10)
  - IGDS9-SF (n=35), GAS-7 (n=21), Lemmens IGD-9 (n=16), AICA-Sgaming (n=7), IGDT10 (n=4)
- For detailed results for each paper, please refer to this link to the shared google document:
  - https://rb.gy/bsjtzv

Conclusions and Future Directions

- The present review included specific diagnostic tools as an inclusion criterion to provide a more accurate, comprehensive, and up-to-date overview on IGD.
- Various biological, psychological, and social factors found in the context of IGD
  - Consistent findings: impaired self-concept, associations with ADHD/depression/anxiety, emotion dysregulation, and poor academic performance
  - Inconsistent findings: reward activity, social relations, family relationships, and personality traits
- Conclusion: further steps needed before suggesting IGD as a clinically relevant/valid syndrome
  - More longitudinal and long-term follow-up studies are needed to uncover the etiology and pathways to IGD
  - A unification of IGD diagnostic tools as well as a unified usage of the scores cut-off
  - More neuroimaging studies to investigate underlying biological mechanisms of individuals with IGD and compare the results with those with other behavioral addictions or substance use disorders
  - Gender effects, gaming genres, and the difference between intense playing and problematic playing taken into consideration when conducting experimental studies

Contact

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