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Psychological Impact of ACL Injury in Gender-Disaggregated Data

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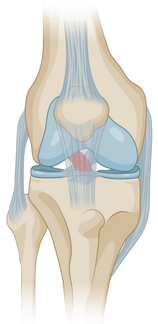
Introduction



- The incidence of both ACL injuries and mental health disorders in adolescents is increasing[1,2].
- ACL injury is known to be associated with a negative psychological impact.
- The manifestations of mental health disorders differ between genders.
- ? Are studies reporting psychological impact of ACL injury in adolescents disaggregating their data by gender?

Methods

1) **Search & Screening**
   - **Databases: PubMed, Ovid MEDLINE(R), Cochrane**
   - **Key search terms: "ACL," "depression," "anxiety," and "adolescent," expanded using medical subject headings (MeSH).**
   - **Manual searches of references supplemented the search.**

2) **Exclusion criteria**
   - **Studies were excluded if they did not include adolescent participants or focused exclusively on one sex.**

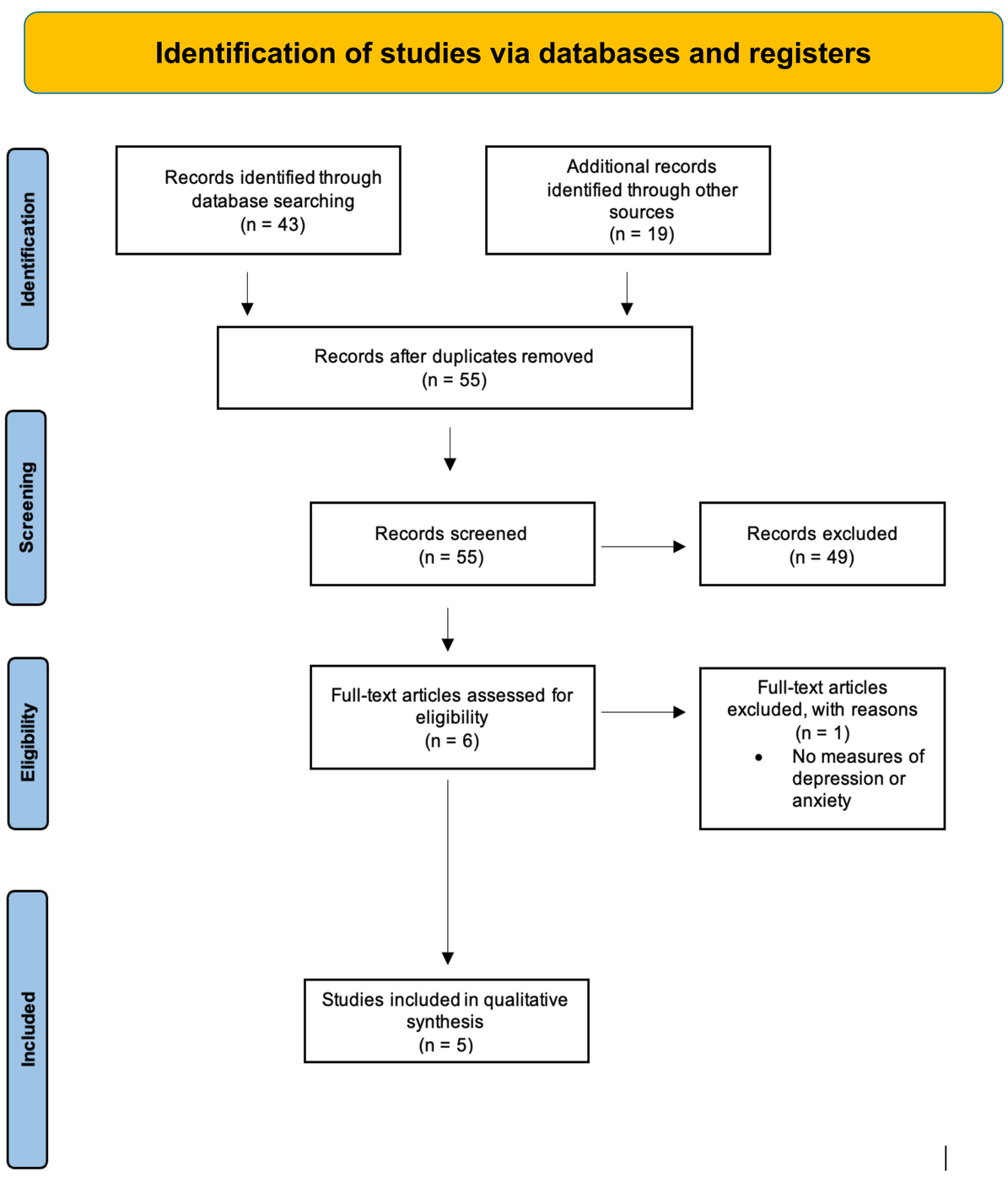


Figure 1: PRISMA flow chart showing search strategy for selection of 5 included studies.

Results

Socioeconomic disadvantage correlated with increased depressive and anxiety scores post injury

Significant increases in depression scores from pre- to post- ACL injury compared to uninjured controls

4 studies reported on symptoms of depression, 3 reported symptoms of anxiety

Lead Author (Year)	Population	Gender Split	Outcome Variable	Findings at Baseline, Type of patient, Outcome values: Mean ± SD	Findings at Follow-up	Gender Regression or Disaggregation	Age Regression or Disaggregation
Tripp et al., 2003 (20)	30 patients (20 adults, 10 adolescent)	Adolescent: 5 female/ 5 male Adult: 4 female/ 6 male	BDI	Adults: 7 ± 6.4 Adolescents: 10 ± 4.3 No significant difference between adolescent/ adult groups for anxiety or depressive symptoms	NA	No	Yes
Baranoff et al., 2015 (21)	44 patients	17 female/ 27 male	DASS 21	Baseline: 8.6 (7.4) No correlation of age/ gender with depressive symptoms.	6 months: 11 (11.6)	Regression	Regression
Mainwaring et al., 2010 (22)	51 participants (16 concussion, 7 ACL injury, 28 uninjured)	30 female/ 21 male	POMS	ACL: 0.71 ± 0.95 Concussion: 1.31 ± 2.55 Control: 1.54 ± 3.13 No significant difference between groups at baseline	First post injury check: ACL: 5.00 ± 4.40 Concussion: 3.75 ± 4.55 Control: 1.54 ± 2.41 ACL group significantly different to control (p = 0.005) Significant main effect of time post injury on depressive symptoms in ACL injury group	No	No
Kiani et al., 2023 (23)	413 patients	223 female/ 190 male	PROMIS	No significant correlation of depressive symptoms with socioeconomic disadvantage at baseline	Depressive symptoms correlated with socioeconomic disadvantage at multiple postoperative timepoints	No	No

Table 1: Results of studies reporting measures of depression

Lead Author (Year)	Population	Gender Split	Outcome variable	Findings at Baseline, Type of patient, Outcome values: Mean ± SD	Findings at follow-up	Gender regression or disaggregation	Age regression or disaggregation
Tripp et al., 2003 (20)	30 patients (20 adults, 10 adolescent)	Adolescent: 5 female/ 5 male. Adult: 4 female/ 6 male	STAI-S	Adults: 33.80 ± 8.78 Adolescents: 44.40 ± 12.43. No significant difference between groups for anxiety symptoms	NA	No	Yes
Maddison et al., 2006 (24)	58 patients. (30 modelling group, 28 control group)	32% female, 68% male	STAI-S	Intervention: 36.93 ± 8.85 Control: 34.25 ± 7.80 No significant difference between groups	Intervention: 38.17 ± 10.19 Control: 37.52 ± 6.52 No significant difference between groups General increase in anxiety symptoms from baseline to preoperative assessment in both groups	No	No
Kiani et al., 2023 (23)	413 patients	54% female/ 46% male	PROMIS	No significant correlation of anxiety symptoms with socioeconomic disadvantage at baseline	Anxiety symptoms correlated with socioeconomic disadvantage at multiple postoperative timepoints	No	No

Table 2: Results of studies reporting measures of anxiety.

0 studies provided gender disaggregated data

Conclusion

Unclear whether the **psychological impact of ACL** injury differs between genders.

Significant **gap** in **studies disaggregating** their data **by gender.**

Improved evidence base in this area could have positive impacts on **return to sport** and **quality of life**.

Future studies of high methodological quality are needed to address this gap in the literature.

References

[1] Peat G, Bergknut C, Frobell R et al. Population-wide incidence estimates for soft tissue knee injuries presenting to healthcare in southern Sweden: data from the Skåne Healthcare Register. Arthritis Res Ther 2014; 16: R162.

[2] National Health Service England. Mental Health of Children and Young People in England 2023 - wave 4 follow up to the 2017 survey: Data tables 2023. https://digital.nhs.uk/data-and-information/publications/statistical/mental-health-of-children-and-young-people-in-england/2023-wave-4-follow-up/data-sets (cited April 2024).