# Evaluation of mental health promotion computer –tailoring programs and others computer-based interventions for adolescents. A sistematic review

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# INTRODUCTION

Bio-psycho-social changes in Adolescence

are associated with

Risk behaviour

Substance use, sexual risk, mental disease

Risk and protective factors

**Background: gender, socioeconomic status and others social determinants of health**
**Information, experiences, perceptions, attitudes**
**Social influence and resilience**
**Family climate and function**
**Health services**

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Family

**HEALTH PROMOTION**

Health Enviroment

Schools

Health services

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# HEALTH COMMUNICATION, CIT AND COMPUTER-BASED HEALTH PROMOTION


¿COULD THEY BE EFFECTIVE STRATEGIES TO PROMOTE HEALTH IN ADOLESCENT POPULATION?

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# OBJECTIVE

*To summarize the characteristics and effects of computer tailoring interventions and other computer-based interventions leading to behavioural areas such as substance use prevention, sexual health or mental health in adolescence*

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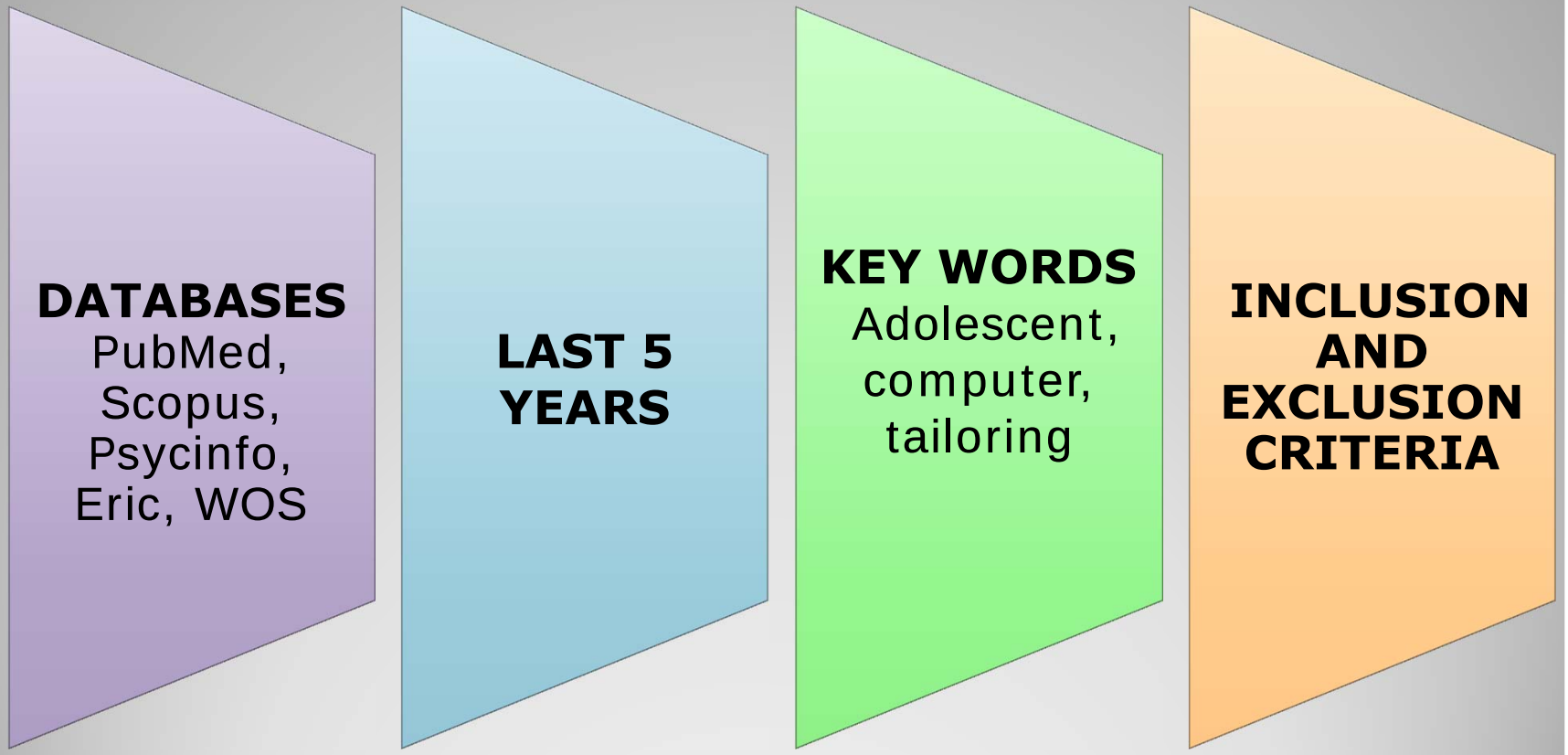
# METHOD

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# METHOD

**METHODOLOGICAL QUALITY**

**Effective Public Health Practice Project tool**

**Quality assessment checklist for observational studies (QATSO Score)**

**INFORMATION EXTRACTION AND SUMMARY**

**Reference**

**Study characteristics**

**Intervention characteristics**

**Main effects**

**EFFECT SIZE**

**Cohen´s d: 0.2 low, 0.5 moderate, and 0.8 large effect**

**Odds ratio: 1.50 low, 3.50 moderate, 9.00 large effect**

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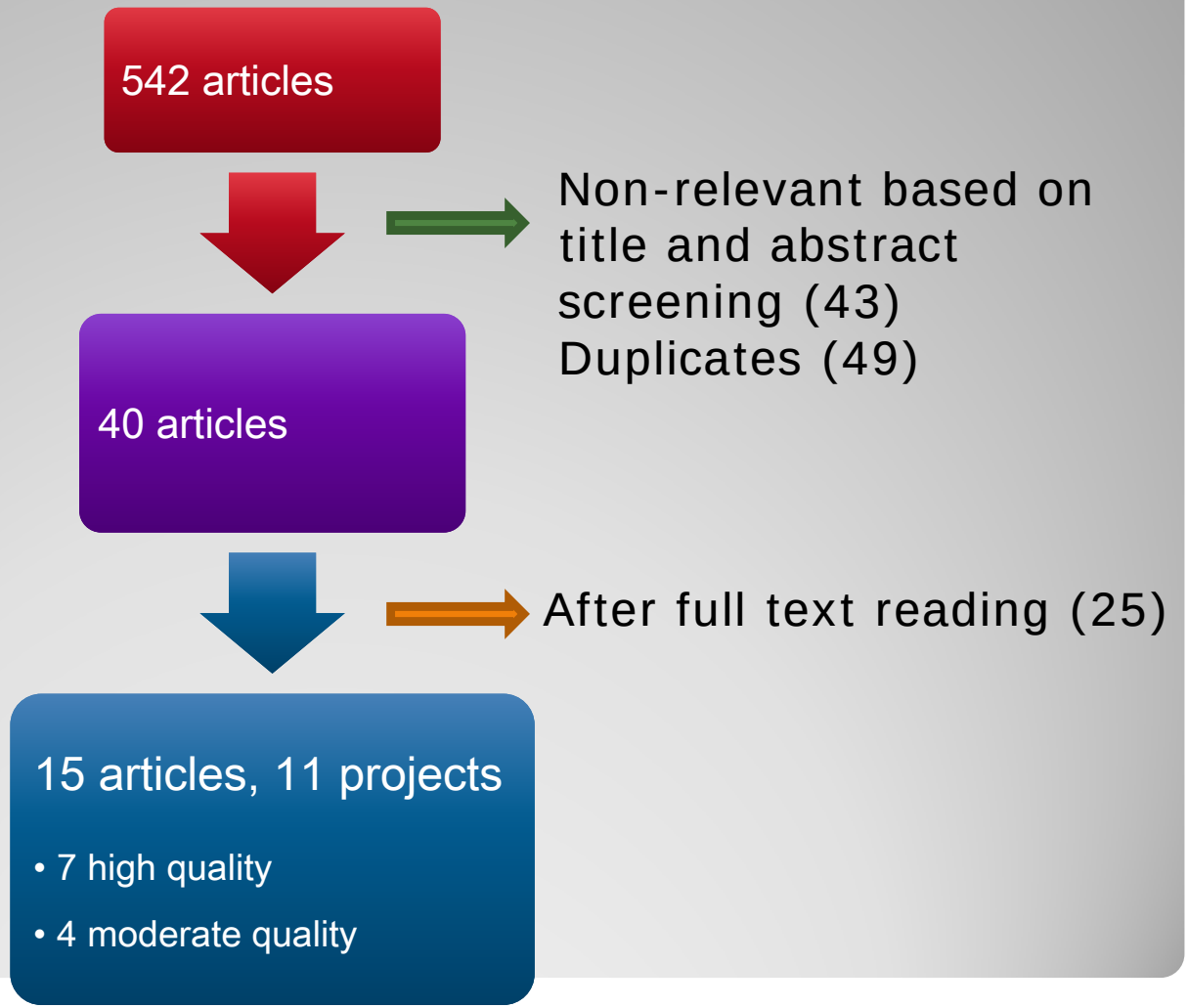
# RESULTS: Literature search, quality rating, and characteristics of studies

| Database | Number of retrieved records (Adolescen* AND Computer tailor*) |
|---|---|
| Pubmed | 142 |
| Psycinfo | 47 |
| Scopus | 198 |
| Eric | 14 |
| Wos | 155 |

# RESULTS

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# RESULTS: Computer tailoring intervention. Description of studies

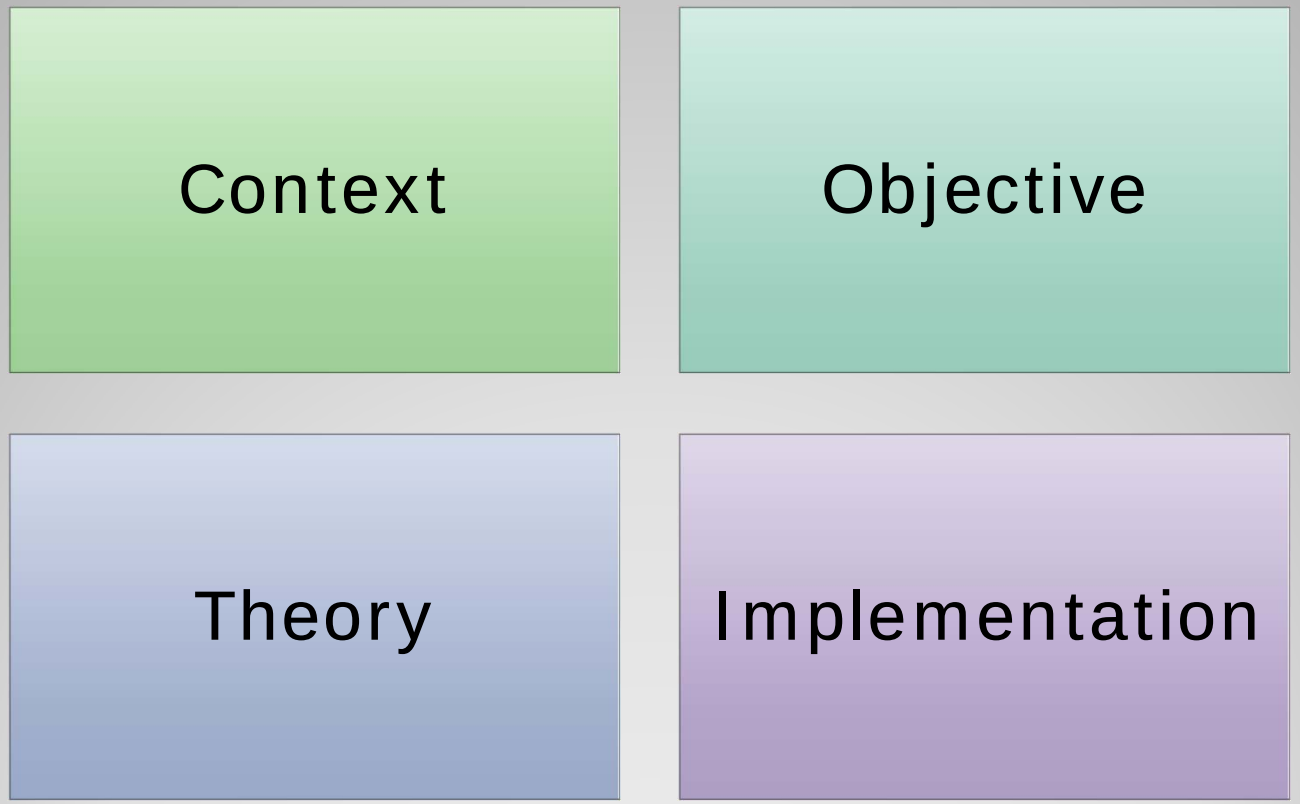
Design

Country

Population

Outcomes measures

# RESULTS: Computer tailoring intervention. Characteristics of interventions



# Computer tailoring intervention. Main findings

| Project | Effects |
|---|---|
| Markham (2008) | Abstinence efficacy (p<0.071, d=0.41).<br>Abstinence importance (p=.067,d=0.46)<br>Condom use efficacy (p<0.008, d=0.29).<br>Abstinence (p<0.006, d=0.46). |
| Cunningham (2009, 2012, 2013) | Alcohol attitude (p<0.05, d=0.39).<br>Violence attitude (p<0.05, d≈0.25).<br>Peer violence (p<0.003, OR=0.74).<br>Alcohol consecuences (p<0.05, OR≈0.57)<br>Violence (p<0.02, OR=0.65). |
| Schinke (2009) | Family funtion variables (p<0.05, d≈0.10-0.56).<br>Mental variables (p<0.05, d≈0.04-0.48).<br>Cognitive variables (p<0.05, d≈0.01-0.38).<br>Substance use (p<.05 d≈0.1-0.2). |
| Cousineau (2010) | Effect on self-esteem in girls (p<0,05 d≈0.25-0.38). |
| Cortese (2012) | Information elaboration (p<0.05, OR=0.030). |

# Computer tailoring intervention. Main findings

| Project | Maing finding |
|---|---|
| Cunningham (2009, 2012, 2013) | Process evaluation: around 80% found that the program was helpful.<br>Role play was found very likable.<br>Computer tailoring-personal counseling: 50% found this very likable, 34% likable and 16% OK.<br>Computer tailoring: 32% found this very likable, 34% likable and 30% OK. ($p<0.01$). |
| Escobar-Chavez (2011) | Cultural adaptation: computer activities and video were found interesting (≈50%).<br>Language difficulties (English)<br>Credibility: correct information 97.2%.<br>Acceptability: work pace 64.4%<br>Comprehension: information 98.6%; Language 91.8%;<br>Motivation: 68.5%<br>Usage ease: Adult help needed 19.2%.<br>Impact perception: information could help me to make healthy choices 94.5%. |

# Others computer-based interventions. Description of studies

| Project | Effects |
|---|---|
| Schiwinn (2010) | Design: RCT (three arms)<br>Country: USA<br>Population: 513 15–17-year adolescents from impoverished neighborhoods<br>Outcome measures: Six-year follow-up |
| Calleja (2010) | Design: RCT (four arms)<br>Country: Mexico<br>Population: 160 students in risk of smoking<br>Outcome measures: baseline, posttest and four-months follow-up |
| Bowen (2012) | Design: Randomized feasibility trial<br>Country: Canada<br>Population: 113 14-16-year American Indian<br>Outcome measures: pretest-posttest |

# Others computer-based interventions. Characteristics of interventions

| Project | Effects |
|---|---|
| Schiwinn (2010) | Context: school<br>Objective: Preventing from alcohol use<br>Theory: social cognitive and problem behavior theories<br>Implementation: CD-ROM+ 10-session intervention with parents; CD-ROM only |
| Calleja (2010) | Context: school<br>Objective: Preventing from smoking<br>Theory: social influence model<br>Implementation: computer games, workshop, workshop+ computer games |
| Bowen (2012) | Context: summer camp<br>Objective: Preventing from smoking<br>Theory: Non-specified<br>Implementation: six-week web-based programme |

# Others computer-based interventions. Main findings

| Project | Effects |
|---|---|
| Schiwinn (2010) | Alcohol consumptrion ($p<0.01$, $d=0.31$).<br>Smoking ($p<0.05$, $d=0.40$).<br>Efficacy ($p<0.05$, $d=0.31$). |
| Calleja (2010) | Tobacco beliefs ($p<0.001$, $d\approx0.30$-$0.82$).<br>Negative attitude towards tobacco shops ( $p<0.007$, $d=0.63$.<br>Identification of illness associated with smoking ($p<0.001$, $d=0.74$).<br>Intervention was more effective in games-workshop intervention. |
| Bowen (2012) | Tried to help someone quit smoking($p<0.5$, $OR=5.57$).<br>Try smoking (ex-smokers) ($p<0.05$, $OR=28.6$).<br>Try smoking (non-smokers) ($p<0.05$, $OR=23.8$).<br>Attitude (giving smoking) ($p<0.23$, $d=0.73$).<br>Smoking and drug effect ($p<0.04$, $d=0.56$.<br>Process evaluation. |

# DISCUSSION

- Theory-based projects
- Variable effects
- Process evaluation: Accessibility, feasibility, ease use, helpful, …
- ¿Cost- effectiveness?

***Limitations***

-Databases used
-Time period
-Language
-Heterogeneity

# CONCLUSION

- **Computer -based interventions are associated with some positive effects.**
- **Evidence to encourage delivering health promotion interventions based on theories.**
- **Computer tailoring and on-line intervention must be combined with other strategies.**

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# SELECTED STUDIES


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# THANK YOU!

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