

Table S1 – Descriptive information about cohort studies (n = 49)

| Authors (year) - country | Target population (n) | Structure - Baseline age, cohort years, #waves | Tobacco measure | Psychological measure/s | Relationship/s examined | Result | Covariates | Quality Score % | Limitations |
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| Ajdacic-Gross et al. [24] (2009) - Switzerland | Stratified sample of participants with psychological disorders (N = 591) | 21 years of age; 20-year follow-up; 6-waves | Smoking onset (never vs adolescent; never vs adult) | SPIKE | Tobacco>bipolar | For heavy smokers, adolescent onset of smoking predicted later bipolar compared to never smokers (OR = 7.1, CI = 1.9-25.9); but for other smokers this relationship was non-significant (OR = 0.9, CI = 0.3-2.7) | Education; gender; smoking parents; conduct problems; school problems; family problems; extraversion; neuroticism; masculinity; regular tobacco use | 63.6 | Adolescent onset of smoking retrospective; temporal sequencing unclear; high attrition; small bipolar subgroup; CIs unavailable |
| Ames et al. [25] (2018) - Canada | Youth (n = 662) | 12-18 years of age; 10-year follow-up; 6-waves | Smoking status (smoker vs non-smoker) | BCFPI | Tobacco>depression | Adolescent smoking predicted membership in persistent high depression trajectory group versus low stable group (Est. = 1.18, SE = 0.55, P < .05, OR = 3.26, CIs unavailable) | Gender; age; SES; earlier levels of smoking and depression; physical health; health-promoting behaviour; heavy drinking; marijuana use; number of sexual partners; BMI | 72.7 | CIs unavailable |
| Berk et al. [26] (2010) - Australia | Youth with schizophrenia (n = 193) | 21.9 (SD = 3.6) years of age; 7.5-year follow-up; 3-waves | Smoking status (smoker vs non-smoker) | BPRS-PS | Tobacco>psychosis | Baseline smoking did not predict future psychosis (B = 0.20, p = .871) | Gender; problem illicit drug use; problem alcohol use; duration of untreated psychosis | 72.7 | Change in smoking status not assessed |
| Bierhoff et al. [27] (2019) - USA | University students (n = 2397) | 20.5 (SD = 1.93) years of age; 2-year follow-up; 6-waves | Prior 30-day tobacco quantity (cigarettes, cigarillos) | PHQ-9; ZSRAS | Depression>tobacco; anxiety>tobacco | Depression (OR = 1.05, CI = 1.02-1.09) and anxiety (OR = 1.02, CI = 1.00-1.04) predicted cigarette quantity; depression (OR = 1.05, CI = 1.02-1.09) and anxiety (OR = 1.03, CI = 1.00-1.06) predicted cigarillo quantity; but depression and anxiety did not predict smokeless tobacco use, e-cigarette use, or hookah use (ORs ranged from 0.95-1.06) | Age; gender; sexual orientation; ethnicity; parental education; school type; ADHD; | 36.4 | Anxiety only measured at W5; only W6 smoking included in analyses; temporal ordering unclear |
| Borges et al. [28] (2018) - Mexico | Youth (n = 1071) | 12-17 years of age; 8-year follow-up; 2-waves | Tobacco use (never vs use before age 15 vs use at age 15 or older); nicotine dependence | WMH-CIDI | Tobacco>depression; tobacco>anxiety; depression>tobacco; anxiety>tobacco | Early tobacco use predicted future mood disorder (RR = 1.42, CIs = 1.02-1.98); other results with tobacco use were non-significant but data not shown; nicotine dependence predicted future mood disorder (RR = 3.30, CI = 1.66-6.55); mood disorder did not predict future nicotine dependence (RR = 1.50, CI* = 0.55-3.90); anxiety did not predict future nicotine dependence (RR = 1.78, CI* = | Alcohol use; drug use; gender; age; living with parents; enrolled in school; parents' education; parents' income; number of childhood adversities | 72.7 | Individual disorders not examined as outcomes; only 2-waves |

| 0.95-3.60); data unavailable for nicotine dependence predicting anxiety | | | | | | | | | |
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| Buchy et al. [29] (2014) - USA and Canada | Youth at high clinical risk of psychosis (n = 170) | 19.8 (SD = 4.5) years of age; 4-year follow-up; 2-waves | Tobacco use (abstinent vs any use vs severe dependence) | SIPS | Tobacco>psychosis | Tobacco use did not predict transition to psychosis (U = 1752.5, p = .13) | Alcohol use; cannabis use; other illicit drug use | 63.6 | Small sub-group sample sizes; smoking only measured at W1; only 2-waves |
| Buchy et al. [30] (2015) - USA and Canada | Youth at clinical high risk of psychosis (N = 735) and healthy controls (N = 278) | 18.5 (SD = 4.2) years of age for clinical high risk; 19.6 (4.7) years of age for controls; 2-year follow-up; 3-waves | Tobacco use (abstinent vs use without impairment vs abuse vs dependence) | SIPS; SOPS | Tobacco>psychosis | Smoking severity (U = 11495.5, p = .24) and frequency (U = 11638.0, p = .35) did not predict transition to psychosis | Alcohol use; cannabis use; other illicit drug use | 54.5 | Small sub-group sample sizes; all participants were help-seekers which may limit external validity |
| Bulhões et al. [31] (2020) - Portugal | Youth (n = 2010) | 13-years of age; 8-year follow-up; 3-waves | Smoking status (never vs former; never vs current) | BDI-II | Tobacco>depression | Current smoking (vs never) predicted moderate (OR = 1.61, CI = 1.22-2.13) and high (OR = 1.89, CI = 1.18-3.01) depression trajectory groups (vs low). Former smoking (vs never) did not predict moderate (OR = 1.15, CI = 0.87-1.52) or high (OR = 1.08, CI = 0.65-1.78) depression trajectory groups (vs low) | Parents' education | 54.5 | Minimal covariates; temporal ordering unclear |
| Chen et al. [32] (2017) - USA | Youth with early-onset schizophrenia (n = 117) | 13.9 (SD = 2.34) years of age; 3-year follow-up; 7-waves | Prior 6-month cigarette use (yes or no) | RADS; RCMAS | Tobacco>depression; tobacco>anxiety | Both depression (B = -13.70, SE = 5.03, p < .01) and anxiety (B = -14.41, SE = 5.90, p < .05) interacted with time to predict smoking | Age; gender; race; comorbidity; diagnosis; trauma; ; poverty | 45.5 | Small sample size; high attrition |
| Crane et al. [33] (2021) - USA | Youth (n = 1263) | 15.6 (SD = 0.6) years of age; 7-year follow-up; 7-waves | Cigarette frequency (#days used in past month) | CESD-20 | Depression>tobacco | Depression and time did not interact to predict future cigarette frequency (Est. = 0.00, SE = 0.00, p = .35) | Gender; race; ethnicity | 72.7 | Minimal covariates |
| Davies et al. [34] (2018) - UK | Youth (n = 6796) | 12 years of age; 8-year follow-up; 4-waves | Smoking frequency (regularly [at least weekly] vs not) | SMFQ; PLIKSi | Psychosis>tobacco; depression>tobacco | Psychosis (OR = 1.11, CI = 0.79-1.56) and depression (OR = 1.23, CI = 0.78-1.95) at age 12 did not predict smoking at age 18 | Gender; SES; housing; mother's education; IQ at age 8; SDQ at age 8; baseline levels of psychosis and depression | 72.7 | Smoking only measured at W3; high attrition |
| Ferdinand et al. [35] (2004) - Netherlands | Children and youth (n = 2600) | 4-16 years of age; 14-year follow-up; 6-waves | Tobacco use (yes or no) | CBCL; YSR; YASR | Psychosis>tobacco | Auditory hallucinations at W2-5 predicted tobacco use at W6 (ORs ranging from 2.0-3.3); visual hallucinations were non-significant predictors (results not shown) | Gender; age; SES | 54.5 | Tobacco use not measured at W1 |
| Fonseca et al. [36] (2021) - Brazil | University students without depression (n = 1034) | 16-25 years of age; 3-year follow-up; 4-waves | Smoking status (yes if smoked at least 1 cigarette in previous 30-days) | PHQ-9 | Tobacco>depression | Smoking did not predict depression for males (unadjusted IRR = 1.04, CI = 0.61-1.76) or females (unadjusted IRR = 1.49, CI = 0.97-2.27) | Age; SES; living situation; stress; alcohol use; sedentary behaviour; physical activity; sleep duration | 54.5 | Temporal ordering unclear; no overall statistics combining genders |

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| Gage et al. [37] (2014) - UK | Youth without psychotic experiences at age 16 (n = 1573) | 16 years of age; 2-year follow-up; 2-waves | Cigarette quantity (non-smoker vs experimenter vs weekly smoker vs daily smoker) | PLIKSi | Tobacco>psychosis | W1 cigarette use predicted psychotic symptoms at W2 (OR = 1.77, CI = 1.18-2.66) | Psychotic experience at 18 by categorical frequency of cigarette use at 18; family history of depression; mother's education; borderline personality; IQ at age 8; depression at age 12; conduct disorder; peer problems; bullied; cannabis use; illicit drug use; alcohol use | 72.7 | Tobacco use not measured at W2; psychosis not measured at W1; only 2-waves |
| Gårdvik et al. [38] (2020) - Norway | Youth (n = 717) | 13-18 years of age; 3-year follow-up; 2-waves | Smoking status (yes or no) | K-SADS; DAWBA | Tobacco>depression; tobacco>anxiety | Smoking did not predict mood disorders (RD% = -0.5, CI = -3.0-2.6) but did predict anxiety disorders (RD% = 4.5, CI = 2.0-9.2) | Chronic pain; any somatic disorder; alcohol use; drug use; age; SES | 72.7 | Only 2-waves; temporal ordering unclear |
| Goodwin et al. [39] (2004) - New Zealand | Youth (n = 1000) | 18-years of age; 2-year follow-up; 2-waves | Nicotine dependence (survey constructed based on DSM-IV criteria) | WMH-CIDI | Anxiety>tobacco | Anxiety disorders were not associated with nicotine dependence (OR = 1.46, CI = 0.93-2.29) | Parental change; interparental violence; sexual abuse; physical abuse; parental history of criminality, alcohol problems, illicit drug use and depression/anxiety; low self-esteem; neuroticism; quality of parental attachment; family stress; early shyness; early conduct problems; early attention problems; gender; prior substance dependence; concurrent major depression; affiliation with deviant peers | 72.7 | Only 2-waves; temporal ordering unclear; specific anxiety disorders not specified |
| Goodwin et al. [40] (2013) - Germany | Youth (n = 3021) | 14-24 years of age; 10-year follow-up; 4-waves | Nicotine use (yes or no) and smoking trajectory (non-user vs increasing use vs decreasing use vs persistent use; MCIDI/DIA-X) | MCIDI/DIA-X | Bipolar>tobacco; depression>tobacco; anxiety>tobacco | Any depressive disorder, any fear disorder, GAD, and specific phobia were associated with nicotine use (ORs ranged from 1.1-5.7); any depressive disorder predicted subsequent decreasing smoking trajectory (OR = 1.7, CI = 1.1-2.8); panic disorder negatively predicted increasing smoking trajectory (OR = 0.1; CI = 0.0-0.9); all other results non-significant (ORs ranged from 0.7-2.2) | Gender; age; | 54.5 | Difficult to interpret results (e.g., depression predicted binary nicotine use but also predicted decreasing trajectory). |
| Griesler et al. [41] (2008) - USA | Youth (n = 1039) | 15.7 (SD = 1.4) years of age; 2- | Nicotine dependence (CIDI); lifetime | DISC | Anxiety>tobacco; tobacco>anxiety; | Anxiety (OR = 1.0, CI = 0.3-3.4) and mood (OR = 1.7, CI = 0.8-3.7) disorder did not predict nicotine dependence; | Age; gender; ethnicity; disruptive disorder; novelty seeking; age of | 72.7 | Individual disorders not examined as predictors/outcomes; |

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| | | year follow-up; 5-waves | cigarettes smoked (0; 1; 2-5; 6-15; 16-25; 26-99; 100+); other lifetime tobacco use | | depression>tobacco; tobacco>depression | nicotine dependence did not predict anxiety (OR = 0.8, CI = 0.3-2.0) and mood (OR = 2.4, CI = 0.5-10.7) disorder; lifetime cigarettes smoked did not predict anxiety (OR = 1.0, CI = 0.9-1.0) and mood (OR = 1.0, CI = 0.9-1.0) disorder; other lifetime tobacco use did not predict anxiety (OR = 0.4, CI = 0.2-1.0) and mood (OR = 0.6, CI = 0.1-2.7) disorder | onset of smoking; initial sensitivity to tobacco; number of lifetime cigarettes smoked; other lifetime tobacco use; drug use; peer smoking; sibling smoking; parent smoking; parent depression; parent delinquency; any psychiatric disorder | short follow-up period; variables not measured at all waves |
| | | | | | | No specific psychological disorders predicted one dependence criterion (statistics now shown) and only panic disorder predicted full (i.e., three) dependence criteria (HR = 2.2, CI = 1.2-3.9); nicotine dependence did not predict any specific psychological disorders (statistics not shown); anxiety disorder did not predict first nicotine dependence criterion (HR = 1.10, CI = 0.78-1.55), but did predict full nicotine dependence (HR = 1.68, CI = 1.12-2.52); mood disorder did not predict first nicotine dependence criterion (HR = 1.16, CI = 0.86-1.55) or full nicotine dependence (HR = 0.93, CI = 0.63-1.38); one dependence criterion did not predict anxiety (HR = 1.12, CI = 0.52-2.39) or mood (HR = 1.10, CI = 0.54-2.26) disorder; full dependence criteria did not predict anxiety (HR = 0.76, CI = 0.23-2.49) or mood (HR = 1.82, CI = 0.67-4.96) disorder | Gender; ethnicity; age of onset of tobacco use; initial sensitivity to tobacco; alcohol and other illicit drug use; parent education; parent smoking; parent depression; parent delinquency; ever tobacco dependent | Individual disorders not examined as predictors/outcomes; short follow-up period; variables not measured at all waves |
| Griesler et al. [42] (2011) - USA | Stratified sample of smoking youth (n = 814) | 15.7 (SD = 1.4) years of age; 2-year follow-up; 5-waves | Nicotine dependence (zero dependence criterion vs one dependence criterion vs three criteria; CIDI) | DISC | Tobacco>depression; | | | 72.7 |
| Hu et al. [43] (2012) - USA | Stratified sample of lifetime youth smokers (n = 877) | 14.1 (SD = 1.4) years of age; 7-year follow-up; 6-waves | Nicotine dependence (no dependence criteria vs early onset/chronic course vs early onset/remission vs late onset) | DISC | Anxiety>tobacco | Anxiety disorder predicted chronic course, early remission, and late onset nicotine dependence (compared with none, ORs ranged from 3.65-4.55); anxiety disorder did not predict chronic course vs early remission, chronic course vs late onset, or early remission vs late onset (ORs ranged from 1.04-1.09) | Gender; ethnicity; onset age of smoking; smoked 5+ packs per month; maximum number of drinks per month; marijuana use; onset age of marijuana; pleasant initial sensitivity to tobacco; parental nicotine dependence; disruptive/mood/anxiety disorder by W5 | Anxiety only measured at W3 and W5; temporal ordering unclear |

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| Hui et al. [44] (2013) - China | Youth with psychosis (n = 1400) | 21.2 (SD = 3.4) years of age; 3-year follow-up; 3-waves | Smoking status (non-smoker vs current smoker vs ex-smoker) | CGI-S | Tobacco>psychosis | Smoking predicted relapse of psychosis (HR = 1.42, CI = 1.15-1.76) | Age; schizophrenia diagnosis; length of baseline hospitalisation; adherence at clinical stabilisation | 63.6 | Difficulty defining relapse; confounder of stressful life events not included |
| Isensee et al. [45] (2003) - Germany | Youth (n = 3021) | 14-24 years of age; 3.5-year follow-up; 3-waves | Smoking quantity (never vs occasional vs non-dependent regular vs dependent regular) | MCIDI/DIA-X | Tobacco>anxiety; anxiety>tobacco | Smoking predicted future agoraphobia, SAD, specific phobia, panic attacks without disorder, and unspecified phobia (ORs ranged from 2.4-3.7), but did not predict panic disorder (ORs ranged from 0.1-3.6); no psychological disorders or symptoms predicted smoking (ORs ranged from 0.3-2.6) | Gender; age; PTSD; alcohol and illicit drug disorders; eating disorders | 72.7 | Small sample sizes for certain disorders |
| Johnson et al. [46] (2000) - USA | Youth (n = 688) | ~16 years of age; 6-year follow-up; 2-waves | Smoking quantity (less than 1-pack per day vs more than 1-pack per day) | DISC | Tobacco>anxiety; anxiety>tobacco | Smoking predicted future agoraphobia, GAD, and panic disorder (ORs ranged from 5.53-15.58) but not SAD (OR = 0.44, CI = 0.04-4.62); anxiety disorders did not predict future smoking (statistics unavailable) | Gender; age; difficult childhood temperament; parental education; parental smoking; parental psychopathology; adolescent alcohol and drug use; adolescent anxiety and depressive disorders | 72.7 | Only 2-waves; small sample sizes for certain disorders |
| Jones et al. [47] (2018) - UK | Youth (n = 3328) | 13.9 (SD = 2.7) years of age; 5-year follow-up; 6-waves | Cigarette use (yes or no) | PLIKSi | Psychosis>tobacco; tobacco>psychosis | Cigarette use did not predict subsequent psychosis (ORs ranged from 0.73-1.78); psychosis did not predict subsequent cigarette use (ORs ranged from 0.86-1.60) | Gender; mother's education; emotional and behavioural problems at 9 years of age; mother's smoking during pregnancy | 63.6 | High attrition |
| Kalan et al. [48] (2020) - Lebanon | Youth waterpipe (N = 228) and cigarette smokers (N = 139) | 14.3 (SD = 1.2) years of age; 6-year follow-up; 8-waves | Nicotine dependence initial symptoms; nicotine dependence full diagnosis | DSS | Depression>tobacco | For waterpipe smokers, depression did not predict initial nicotine dependence symptoms (unadjusted HR = 1.03, CI = 0.98-1.09) but did predict full nicotine dependence diagnosis (HR = 1.13, CI = 1.02-1.25). For cigarette smokers, depression did not predict initial dependence symptoms (unadjusted HR = 1.00, CI = 0.94-1.06) or full nicotine dependence diagnosis (unadjusted HR = 0.96, CI = 0.85-1.09) | Gender; BMI; SES; age | 54.5 | Small sample size |
| Kendler et al. [49] (2015) - Sweden | Males from conscript registry (n = 233,879) | 18.5 (SD = 8.4) years of age; 8-year follow-up; 5-waves | Smoking quantity (none vs light vs heavy) | Registry diagnosis (assessment tool unclear) | Tobacco>psychosis | W1 and W2 light (vs no) smoking did not predict subsequent schizophrenia (ORs ranged from 1.60-1.62) but W3 did (OR = 1.77, CI = 1.02-3.05); W1 and W3 heavy (vs no) smoking did predict subsequent schizophrenia (ORs ranged from 2.21- | Family SES; community SES; drug abuse | 45.5 | Only male youth; psychological disorder assessment method unclear |

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| | | | | | | | 2.39), but W2 did not (OR = 1.96, CI = 0.95-4.06) | | | |
| King et al. [50] (2004) - USA | Youth twins (n = 1364) | 11 years of age; 3-year follow-up; 2-waves | Nicotine onset; regular cigarette use; daily nicotine use | DICA-R | Anxiety>tobacco; tobacco>anxiety | | Using adjusted analyses, W1 MDD predicted W2 nicotine onset (OR = 1.98, CI = 1.15-3.41), but using unadjusted analyses did not predict regular cigarette use or daily nicotine use (ORs ranged from 0.83-1.94); using unadjusted analyses, W1 separation anxiety disorder and overanxious disorder did not predict any of the outcomes (ORs ranged from 0.84-1.25) | Conduct disorder; oppositional defiant disorder; ADHD; gender | 72.7 | Only 2-waves; anxiety disorders assessed for females only; variables only measured at one time point each; only some analyses adjusted |
| MacKie et al. [51] (2011) - UK | Youth (n = 409) with elevated hopelessness, anxiety-sensitivity, impulsivity and sensation-seeking | 14.5 years of age; 1.5-year follow-up; 4-waves | Cigarette use (yes or no) | DIS | Tobacco>psychosis | | W1 cigarette use did not predict persistent psychotic trajectory (OR = 1.3, 0.3-5.1) but did predict increasing psychotic trajectory (OR = 5.4, CI = 1.5-20.1) | Gender; ethnicity; anxiety sensitivity; hopelessness; impulsivity; sensation seeking | 54.5 | Short follow-up; small sample sizes in sub-groups |
| Marmorstein et al. [52] (2010) - USA | Male youth (n = 503) | ~6.2 years of age; 14-year follow-up; 15-waves | Age at first tobacco use | CBCL; TRF; YSR | Anxiety>tobacco | | Both generalised (OR = 0.06, CI = .02-.17) and social anxiety (OR = 0.06, CI = .02-.17) interacted with time to predict earlier onset of tobacco use | Age at first alcohol and substance use; delinquency | 63.6 | Statistics unclear; only male sample |
| Marsden et al. [53] (2019) - USA | University students (n = 5236) | 21.0 (SD = 2.3) years of age; 3-year follow-up; 6-waves | Past 30-day use and frequency of use of cigarettes, refillable e-cigarettes, disposable e-cigarettes, hookah, cigars (including cigarillos and little cigars), and smokeless tobacco | CESD-10 | Tobacco>depression | | For past 30-day use, significant predictors of depression were cigarettes, refillable e-cigarettes, and hookah (rate ratios ranged from 1.01-1.03), but disposable e-cigarettes, cigars, and smokeless tobacco were non-significant (rate ratios ranged from 1.00-1.10); for frequency of use, significant predictors of depression were cigarettes, refillable e-cigarettes, and smokeless tobacco (rate ratios ranged from 1.10-1.04), but disposable e-cigarettes, cigars, and hookah were non-significant (rate ratios ranged from 1.01-1.05) | Gender; ethnicity; age; father's education; college duration; survey wave; other tobacco products | 54.5 | University student sample |
| Moylan et al. [54] (2013) - Norway | Youth (n = 456) | 14-15 years of age; 4-year follow-up; 3-waves | Smoking status (active vs non-active) | GADS | Tobacco>anxiety; anxiety>tobacco | | Active smoking in adolescence predicted later anxiety (B = 0.17, p < .05); adolescent anxiety did not predict later smoking (statistics not presented) | Mother's education | 72.7 | Very small cell sizes; relatively high SES of participants; minimal covariates |
| Mustonen et al. [55] (2018) - Finland | Youth (n = 6081) | 15-16 years of age; 15-year follow-up; | Cigarette quantity (non-smokers vs moderate [1-9 cigarettes a day] vs | Registry diagnoses based on ICD-10 criteria | Tobacco>psychosis | | Heavy smoking (HR = 2.00, CI = 1.13-3.54) and number of daily cigarettes (OR = 1.05, CI = 1.01-1.08) predicted later psychosis; but moderate smoking did not | Baseline psychotic experiences; cannabis use; alcohol use; other substance use; parental | 72.7 | Number of waves unclear; psychosis diagnosis method unclear |

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| | | number of waves unclear | heavy [greater than 10 cigarettes a day]); number of daily cigarettes smoked; age of smoking onset | | | (HR = 0.42, CI = 0.13-1.34); early onset predicted subsequent psychosis compared to late onset (HR = 2.84, CI = 1.12-7.18) | substance abuse; parental psychosis | | |
| Okeke et al. [56] (2013) - USA | Mexican American youth (N = 1328) | 11-13 years of age; 5-year follow-up; 3-waves | Smoking status (never vs puffer [tried but not completed single cigarette] vs experimenter [have consumed one cigarette or more]) | STAS | Anxiety>tobacco | Anxiety predicted experimenter status (OR = 1.04, CI = 1.02-1.07) but not puffer status (OR = 1.01, CI = 0.99-1.03) | Gender; age; birth country; parental education; BMI; body image | 54.5 | Temporal ordering unclear; variables not measured at each time point |
| Pedersen et al. [57] (2009) - Norway | Youth (n = 1501) | 13 years of age; 13-year follow-up; 4-waves | Smoking status (not smoking vs smoking but not dependent vs nicotine dependent) | (SCL-90) | Tobacco>anxiety; anxiety>tobacco | Nicotine dependent status predicted later anxiety (B = 0.09, p < .01) but non-dependent smoking status did not (B = 0.05, p > .05); anxiety did not predict later smoking status (OR = 1.06, CI = 0.97-1.17) | Gender; age; depression and parasuicide at age 20; and at ages 15 and 20; SES, parental care and monitoring, parental divorce, education, conduct problems, cannabis | 54.5 | Infrequent assessments |
| Purborini et al. [58] (2021) - Indonesia | Youth (n = 1960) | 17.0 (SD = 1.4) years of age; 7-year follow-up; 2-waves | Lifetime tobacco status (ever vs never); current tobacco status (never vs current vs former) | CESD-10 | Tobacco>depression | All tobacco use statuses predicted depression including ever smoked (B = 0.92, CI = 0.73-1.12), current smoker (B = 0.88, CI = 0.68-1.08), and former smoker (B = 1.52, CI = 0.95-2.08) | Marital status; region; SES | 81.8 | Only 2-waves; temporal ordering unclear |
| Raffetti et al. [59] (2019) - Sweden | High school students (n = 3959) | 13 years of age; 1-year follow-up; 2-waves | Cigarette smoking; snus use; current; tobacco use; tobacco dependence (all variables yes or no) | CES-DC; SDQ | Tobacco>depression | Cigarette smoking (b = 3.4, p = .006) and tobacco dependence (b = 3.4, p = .008) predicted later depression, but snus (b = -0.1, p = .934) and tobacco (b = 1.9, p = .073) use did not; using depression onset as outcome, only tobacco dependence was a significant predictor (OR = 4.8, CI = 1.7-14.0), but cigarette smoking, tobacco use, and snus use were not (ORs ranged from 0.8-2.0) | Baseline depression; alcohol use; parental education; parental birthplace; gender | 72.7 | Minimal waves; short follow-up; |
| Ranjit et al. [60] (2019) - Finland | Youth twins (n = 4152) | 14 years of age; 3-year follow-up; 2-waves | Lifetime cigarettes smoked (zero vs 1-50; zero vs 50+); smoking status (never vs experimenter; never vs quitter; never vs regular) | GBI | Tobacco>depression | Lifetime cigarettes smoked and smoking status predicted later depression (IRR 1.17, 1.19); depression did not predict later smoking (results not shown) | Gender; school grades; alcohol use to intoxication; health status, pre-existing depressiveness; shared familial and genetic factors between twins | 72.7 | Minimal waves; variables only measured at one wave |

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| Ranjit et al. [61] (2019b*) - Finland | Youth twins (n = 4236) | 17.5 years of age; 5-year follow-up; 2-waves | Smoking status (never vs ever; never vs experimenters; never vs quitters or trying to quit; never vs non-daily; never vs daily) | GBI | Tobacco>depression; depression>tobacco | Smoking predicted later depression (IRR 1.17, 95% CI: 1.03-1.33); depression predicted later smoking (RR = 1.05, 95% CI: 1.00-1.10) (based on the individual level findings) | Gender; age; baseline depression; shared familial and genetic factors between twins | 54.5 | Minimal waves |
| Savage et al. [62] (2016) - Finland | Youth twins (n = 1906) | 12 years of age; 10-year follow-up; 4-waves | Nicotine dependence symptoms | MPNI | Anxiety>tobacco | Peer/teacher/parent-rated social anxiety did not predict future nicotine dependence (Bs ranged from -.15 to -.01) | Nicotine dependence at W2 and W3; gender | 45.5 | Social anxiety only measured at W1; statistics unclear; low internal reliability of parent-rated social anxiety |
| Shete et al. [23] (2017) - USA | Mexican American youth (n = 1328) | 11.8 (SD = 0.8) years of age; 5-year follow-up; 2-waves | Smoking escalation (yes or no) | STAS | Anxiety>tobacco | Anxiety predicted smoking escalation (OR = 1.03, CI = 1.02-1.05) | Gender; age; subjective social status; intention to try cigarette; peer smoking; parental smoking | 36.4 | Minimal waves |
| Smith et al. [63] (2014) - USA | Sub-sample of young adults (precise N unclear, but approximately 14,000) | 18-29 years of age; 1-year follow-up; 2-waves | Smoking cessation (yes or no) | AUDADIS-IV | Depression>tobacco; anxiety>tobacco; bipolar>tobacco | Compared to the longitudinal smoking cessation rate of no-diagnosis (28.7), all longitudinal smoking cessation rates of those with past-year diagnoses were significantly lower (ps < .001): SAD (13.8), agoraphobia (12.0), panic disorder (14.5), specific phobia (20.3), GAD (13.4), mania or hypomania (18.6), MDD (17.6) | Age; gender; education | 81.8 | Minimal waves; short follow-up; change in psychological diagnosis unclear; symptom severity not measured |
| Swendsen et al. [64] (2010) - USA | Youth (n = 5001) | 15-24 years of age; 10-year follow-up; 2-waves | Daily tobacco use (yes or no); nicotine dependence (yes or no) | CIDI | Depression>tobacco; anxiety>tobacco; bipolar>tobacco | Among W1 non-daily tobacco users, significant predictors of W2 onset of daily use included any mood disorder, panic disorder, SAD, specific phobia, GAD, and any anxiety disorder (ORs ranged from 1.6-3.0), whereas MDD, bipolar, agoraphobia, and separation anxiety were non-significant (ORs ranged from 0.8-1.8); among daily tobacco users, significant predictors of W2 onset of nicotine dependence included bipolar, any mood disorder, agoraphobia, and separation anxiety (ORs ranged from 1.9-3.9), whereas MDD, panic disorder, SAD, GAD, and any anxiety disorder were non-significant (ORs ranged from 0.8-1.4) | Age; gender; ethnicity; education; marital status; number of children; region; urbanicity; employment status | 72.7 | Minimal waves |

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| Tomita et al. [65] (2020) - South Africa | Subsample of youth without depression (N = 4207) | 15-19 years of age; 7-year follow-up; 4-waves | Smoking cigarette status (yes or no) | CESD-10 | Tobacco>depression | Smoking predicted depression for both males (RR = 1.84, CI = 1.18-2.88) and females (RR = 2.47, CI = 1.15-5.29) | Ethnicity; marital status; education; employment status; household income; urban vs rural residence | 63.6 | None noted |
| Trotta et al. [66] (2020) - UK | Youth twins (n = 2232) | 12 years of age; 6-year follow-up; 2-waves | Tobacco dependence | Structured interview created by authors | Psychosis>tobacco | Psychosis did not predict later tobacco dependence (RR = 1.00, CI = 0.57-1.75) | Shared familial and genetic factors between twins; gender; age-5 IQ; family SES status; age-12 depression, anxiety, self-harm/suicidality, ADHD, conduct disorder, family psychological history; mother's psychotic symptoms | 63.6 | Only 2-waves; |
| Ward et al. [67] (2019) - USA and Canada | Youth at clinical high risk of psychosis (N = 587) and healthy controls (N = 274) | 18.5 (4.3) years of age for clinical high risk; 19.7 (4.7) years of age for controls; 2-year follow-up; waves unclear but approximately 3-4 | Smoking level (none vs light vs heavy); smoking status (never vs ever) | SIPS | Tobacco>psychosis | Light smoking (OR = 0.90, CI = 0.4-2.2), heavy smoking (OR = 0.3, CI = 0.05-2.3), and status as 'ever smoked' (HR = 1.16, CI = 0.82-1.65) did not predict transition to psychosis | Tobacco use; marijuana use; alcohol use; age; ethnicity; academic performance; academic adjustment; depression; anxiety; social anxiety; daily stressors; life events; perceived discrimination | 72.7 | Some small cell counts; number of waves unclear |
| Weiser et al. [68] (2004) - Israel | Youth male military recruits (n = 14, 248) | 18 years of age; 10.2 (SD = 3.6) year follow-up; number of waves unclear | Smoking status (yes or no); daily smoking quantity (zero vs 1-9 vs 10+) | Registry diagnoses based on ICD-10 criteria | Tobacco>psychosis | Baseline binary smoking (RR = 1.94, CI = 1.05-3.58) and daily smoking 10+ cigarettes (RR = 2.28, CI = 1.19-4.34) predicted later schizophrenia, but daily smoking 1-9 cigarettes (RR = 1.38, CI = 0.48-4.00) did not | Non-psychotic psychological disorders; adolescent social and intellectual functioning; SES | 72.7 | Inconsistent follow-up periods; number of waves unclear; schizophrenia diagnosis method unclear; smoking only assessed at baseline; only male sample |
| Wilens et al. [69] (2016) - USA | Youth with bipolar (N = 105) and youth without bipolar (N = 98) | 13.6 (SD = 2.5) years of age for bipolar, 13.7 (SD = 2.1) years of age for controls; 5-year follow-up; 3-waves (but unclear) | Cigarette smoking (levels unclear) | KSADS-E; SCID | Tobacco>bipolar | Maintenance of smoking predicted bipolar status at final follow-up (HR = 3.2, CI = 1.6-6.7); but smoking did not predict persistence of bipolar (HR = 1.5, CI = 0.7-3.2) | SES; parental history of substance use disorder; probands with bipolar; | 63.6 | Temporal ordering unclear; small sample size; number of waves unclear; levels of predictor unclear; results unclear |
| Zammit et al. [70] (2003) - Sweden | Youth military recruits (n = 50,087) | 18-20 years of age; 27-year follow-up; number of waves unclear | Smoking quantity (non-smokers vs light smokers vs medium smokers vs heavy smokers) | Registry diagnoses based on ICD-8 | Tobacco>psychosis | Smoking quantity negatively predicted schizophrenia by final follow-up (HR = 0.8, CI = 0.7-0.9), but did not predict schizophrenia between 0-5 years from baseline (HR = 0.9, CI = 0.7-1.1) | Diagnosis at conscription; poor social integration; IQ; drug use; disturbed behaviour; father's occupation; place of | 81.8 | Psychological disorder diagnosis method unclear; number of waves unclear; |

| | | 21.0 (SD = 1.73) years of age; | | | | | | upbringing: family SES; family psychiatric history; alcohol problems | | smoking only measured at baseline | |
|--|----------------------------|-----------------------------------|-------------------------------|---------|--------------------|--|--|--|------|--|--|
| Zhang et al. [71] (2018) - Germany | Female youth (n = 3065) | 1.5-year follow- up; 2-waves | Smoking status (yes or no) | DIMD-RV | Tobacco>depression | Smoking did not predict incremental variance in MDD (OR = 1.55, CI = 0.90- 2.66) | | BMI; alcohol use; alcohol-related problems; physical activity; good physical health | 72.7 | Only females; minimal waves; short follow-up; MDD and smoking measured as binary variables | |

Note: All CIs (confidence intervals) were 95%.

*Testing the reciprocal association between smoking and depressive symptoms from adolescence to adulthood: A longitudinal twin study.

BMI = Body Mass Index; CI = 95% confidence interval; Est. = Estimate; GAD = Generalised Anxiety Disorder; IRR = Incidence Rate Ratio; OR = odds ratio; SAD = Social Anxiety Disorder; SES = socioeconomic status; U = Mann Whitney U Test.

AUDADIS-IV = Alcohol Use Disorder and Associated Disabilities Interview Schedule; BCFPI = Brief Child and Family Phone Interview; BDI-II = Beck Depression Inventory-II; BPRS-PS = Brief Psychiatric Rating Scale; CBCL = Child Behavior Checklist; CES-DC = Center for Epidemiologic Studies Depressive symptoms Scale for Children; CESD = Center for Epidemiologic Studies Depression Scale; CGI-S = Clinical Global Impressions – Severity Scale; DAWBA = Development and Wellbeing Assessment; DICA-R = Diagnostic Interview for Children and Adolescents; DIMD-RV = Diagnostic Interview for Mental Disorders—Research Version; DIS = Diagnostic Interview Schedule; DISC = Diagnostic Interview Schedule for Children; DSS = Depressive Symptoms Scale; FTND = Fagerström Test for Nicotine Dependence; GADS = Generalized Anxiety Disorder Scale; GBI = General Behavior Inventory; KSADS-E = Kiddie Schedule for Affective Disorders-Epidemiologic Version; MCIDI/DIA-X = Munich-Composite International Diagnostic Interview ; MPNI = Multidimensional Peer Nomination Inventory; MSI = Minnesota Smoking Index; PHQ-9 = Patient Health Questionnaire; PLIKSi = Psychosis-Like Symptoms Interview; PLIKSi = Psychosis-like Symptoms interview; RADS = Reynolds Adolescent Depression Scale; RCMAS = Revised Children’s Manifest Anxiety Scale; SCID = Scheduled Clinical Interview Diagnosis; SCL-90 = Hopkins Symptom Checklist; SDQ = Strengths and Difficulties Questionnaire; SIPS = Structured Interview for Prodromal Syndromes; SMFQ = Short Mood and Feelings Questionnaire; SOPS = Scale for Assessment of Prodromal Symptoms; SPIKE = Structured Psychopathological Interview and Rating of the Social Consequences of Psychological Disturbances for Epidemiology; STAS = Spielberg’s Trait Anxiety Scale; TFR = Teacher Report Form; WMH-CIDI = World Mental Health Composite International Diagnostic Interview; YASR = Young Adult Self-Report; YSR = Youth Self-Report; ZSRAS = Zung Self-Rating Anxiety Scale.