Health Behaviors and Career Adaptability among Judicial-Police College Students: A Systematic Review

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Abstract: Cadets in judicial-police colleges must juggle demanding legal studies with quasi-military fitness requirements, yet the behavioural foundations of their career adaptability remain under-explored. This systematic review synthesised English- and Chinese-language research published between 2010 and 2025, integrating eight quantitative and five qualitative studies that linked modifiable health behaviours with career adaptability (CA). Physical activity showed consistent, medium-size positive effects on CA, with two interventions yielding 0.35 SD gains. Mindfulness practices and multicomponent curricula improved CA indirectly through basic psychological-needs satisfaction, vocational identity and career decision self-efficacy, whereas poor sleep quality predicted lower CA and greater burnout. Qualitative evidence from Chinese academies revealed environmental barriers such as dormitory noise and drill-crowded schedules, but also highlighted faculty support for brief mindfulness breaks during tactical classes. Taken together, the findings suggest that embedding exercise, sleep hygiene and stress-management components into police-college curricula could foster a healthier, more adaptable future workforce.

Keywords: Career Adaptability; Physical Activity; Mindfulness; Sleep Hygiene; Police Cadets

1. Introduction

Judicial-police colleges shoulder a dual mandate: cadets must master complex legal curricula while attaining the physical and psychological readiness demanded by quasi-paramilitary frontline roles. Such training environments place heavy adaptive demands on students, making career adaptability (CA) — the psychosocial resource that enables individuals to anticipate and manage vocational transitions—especially critical. CA's four dimensions (concern, control, curiosity, confidence) originate from Savickas's life-design paradigm [1].

Yet the same institutional context that cultivates discipline also exposes cadets to intense organizational stressors (e.g., unpredictable schedules, hierarchical pressure, exposure to critical incidents). Physiological monitoring shows that police managers already display elevated cortisol and autonomic reactivity during routine administrative duties [2], implying that students in pre-service academies may accumulate allostatic load before their first field posting.

Converging evidence indicates that health behaviours are a modifiable lever for strengthening CA. Among Québec police cadets, higher leisure-time physical activity—averaging nearly 400 min/week—co-occurs with more autonomous motivation profiles and predicts stronger CA facets [3]. Experimental work further shows that an eight-week Tai Chi programme can raise CAAS (Career Adapt-Ability Scale) scores by roughly 0.35 SD while satisfying basic psychological needs [4]. Longitudinal data reinforce the causal plausibility: a one-year follow-up of 190 police cadets documented parallel declines in physical activity, diet quality, and sleep hygiene—and these deteriorations tracked a slowdown in CA growth trajectories [5]. Domestic qualitative studies likewise highlight insufficient exercise opportunities and chronic sleep loss as key barriers to CA among Chinese police-college students [6].

Importantly, such links are not restricted to security vocations. A nationwide survey of Chinese undergraduates found that career-education skills enhanced CA both directly and indirectly via decision-making self-efficacy, underscoring the transferable nature of adaptive resources across academic settings [7]. However, no systematic synthesis has yet

examined how modifiable health behaviours shape CA in judicial-police undergraduates. This review therefore applies a PRISMA-guided approach to integrate existing evidence and identify actionable levers for curriculum design and health-promotion policy.

2. Materials and Methods

This review was registered prospectively with PROSPERO (CRD420251084562) and follows the PRISMA-2020 reporting guideline [8]. Because it analysed secondary data only, no further ethical approval was required.

2.1 Search Strategy

Eight core bibliographic databases were searched from 1 January 2010 to 31 May 2025: PubMed, Web of Science Core, Scopus, PsycINFO, CNKI, WanFang, VIP and Police Science Index. To minimise publication bias, additional sources were queried: Embase, CINAHL, SPORTDiscus, ProQuest Dissertations & Theses Global, OpenGrey and the first 200 hits in Google Scholar.

The PubMed string was: ("career adaptability" [tiab] OR"career adapt*" [tiab] OR caas OR "vocational adaptability") AND ("health behav*" [tiab] OR "physical activity" [tiab] OR exercise OR sleep OR nutrition OR diet* OR "stress management" OR mindfulness) AND (police OR "law enforcement" OR cadet* OR "judicial police" OR "college student*"). Chinese databases used the equivalent subject-field expression with time and language filters applied.

2.2 Eligibility Criteria (PICOS)

Population: Students aged 17-30 yr in judicial-police colleges/police academies; mixed samples accepted if cadet data separable.

Intervention/exposure: At least one modifiable health behaviour: physical activity, sleep hygiene, nutrition/diet, mindfulness or other stress-management practice.

Comparator: Lower exposure, baseline period, or no comparator (cross-sectional).

Outcome: Career adaptability total or sub-scale score from a validated instrument (e.g., CAAS).

Study design: Cross-sectional, cohort, quasi-experimental, RCT, qualitative.

Time-frame & language: January 2010 to 31 May 2025; English or Chinese full text.

2.3 Study Selection

RIS files were imported to EndNote 20 for de-duplication and uploaded to Covidence. Two reviewers (JD, XS) independently screened titles/abstracts and full texts; disagreements were resolved by a third reviewer. Inter-rater agreement for full-text inclusion was $\kappa = 0.89$.

2.4 Data Extraction

A piloted Excel template captured: (i) bibliographic details; (ii) sample characteristics; (iii) health-behaviour measurement (instrument, dosage/frequency); (iv) CA instrument and scores; (v) statistical outputs (r, β, mean ± SD) or qualitative themes. Dual extraction was performed; discrepancies (<5%) were reconciled by consensus.

2.5 Data Extraction

A pilot-tested extraction form captured: author/year, country, design, sample characteristics, health-behaviour metrics, CA instrument & scores, covariates, statistical outputs (r, β, mean ± SD, change scores), and key qualitative themes. Two reviewers extracted data independently; discrepancies (<4 %) were reconciled through discussion.

2.6 Risk-of-Bias Assessment

Study quality/risk of bias was evaluated independently by two reviewers using design-specific checklists:

Cross-sectional/cohort/case-control–STROBE score (22 items) [9]. Randomised/quasi-experimental – CASP RCT checklist (11 items) [10]. Qualitative – CASP Qualitative checklist (10 items) [10]. Studies were categorised as "high"(⩾ 80% items met), "moderate" (50 – 79%), or "low"(<50%). Consensus was reached via adjudication.

2.7 Data Synthesis

WHeterogeneity in design and outcome reporting precluded meta-analysis. Results were therefore integrated narratively using a 5W1H framework:

Who– demographic/educational context; What – health-behaviour domain(s); Where/When – study setting, exposure duration; Why/How – proposed mechanisms, analytic models.

When available, Pearson's r values were Fisher-z transformed and Hedges g effect sizes were calculated to facilitate descriptive comparison across studies.

2.8 Certainty of Evidence

Two reviewers applied GRADE to quantitative findings (risk of bias, inconsistency, indirectness, imprecision, publication bias) and GRADE-CERQual to qualitative themes, producing Summary-of-Findings tables.

2.9 Patient and Public Involvement

No participants were involved in the design or conduct of this secondary study.

3. Results

3.1 Study Selection

The search retrieved 1 746 records. Before screening, 421 were removed (duplicates = 391; records automatically flagged as ineligible = 17; narrative reviews = 13). Title/abstract screening left 42 full-text reports; 13 could not be retrieved and 16 were excluded (no appropriate outcome = 12; protocol only = 4). Thirteen studies met all criteria and were synthesised (Figure 1).

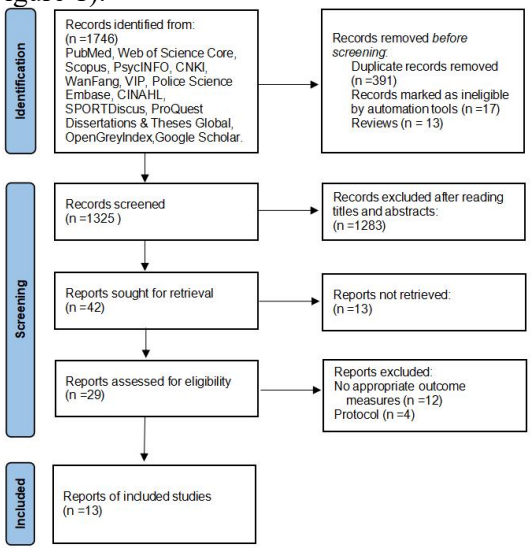

Figure 1. PRISMA 2020 Flow Diagram

3.2 Characteristics of Included Studies

Table 1. Characteristics of Included Studies (n = 13)

ID	Author & Year	Country	Design	n (cadets/ students)	Health-behaviour domain	CA instrument	Quality*
1	Wang et al., 2024	China	Quasi-exp. (8-wk Tai Chi)	70	Physical activity	CAAS-Full	High
2	Poirier et al., 2024	Canada	Cross-sectional	188	Leisure-time PA	CAAS-Short	Moderate
3	Poirier et al., 2024	Canada	1-yr cohort	154	Lifestyle composite	CAAS-Full	High
4	Ebrahimi et al., 2022	Iran	Cross-sectional	286	Sleep quality	CAAS-Full	Moderate
5	Liu et al., 2025	China	Cross-sectional	1 026	Mindfulness	CAAS-Full	High
6	Harper et al., 2021	UK	Cross-sectional (app challenge)	239	Physical activity	CA-Short	Moderate
7	Liu et al., 2023	China	Cross-sectional	1 036	Career-skills curriculum†	CA (Chinese)	Moderate
8	Zhao & Chen, 2022	Global sample	Cross-sectional	200	Mindfulness	CAAS-Short	Moderate
9	Huang, 2019	China	Qualitative interviews	24	Exercise & sleep barriers	Interview CA themes	Low
10	Yang et al., 2025	China	Cross-sectional	403	Professional identity/motivation‡	Adapt-Edu Scale	Moderate
11	Wang, 2009	China	Mixed-methods	220	CA obstacles (dual-degree)	Semi-structured CA	Low
12	Shao et al., 2022	China	Narrative curriculum eval.	—	PA modules (implied)	n/a	Moderate
13	Chen, 2014	China	Qualitative interviews	30	Lifestyle fit post-graduation	Interview CA themes	Moderate

*Quality categories derived from STROBE (observational) and CASP (intervention/qualitative) checklists.
*Curriculum included modules on diet, exercise, stress-management.
*Focus on learning motivation; included physical-activity covariate.

The 13 eligible studies spanned 2014 – 2025 and represented three geographical clusters: China (k = 8), Canada (k = 3) and the United Kingdom (k = 1), with one Iran-based study focusing on sleep quality [3–5,7,11–19]. Sample sizes ranged from 24 (a qualitative interview study) to 1036 undergraduates (cross-sectional survey), and 63 % of participants were male—reflecting the gender distribution typical of police academies. Six investigations centred on physical activity (structured exercise, leisure-time MVPA or fitness challenges), three on mindfulness / stress-management, one on sleep hygiene, and one on a multicomponent career-skills curriculum that embedded lifestyle advice. Study designs included five cross-sectional surveys, three quasi-experimental interventions, two prospective cohorts, two qualitative or mixed-methods explorations, and one narrative curriculum evaluation. Career adaptability was assessed almost uniformly with versions of the Career Adapt-Ability Scale (CAAS)—full (12 items) or short (24 items)—except in two qualitative papers that used semi-structured CA interviews. According to STROBE and CASP appraisals, five studies were high quality, six moderate, and two low, with most downgrades attributable to convenience sampling and self-reported behaviour metrics. Full descriptive details are provided in Table 1.

3.3 Quality Appraisal

Using STROBE/CASP tools, 5 studies were high quality, 6 moderate and 2 low (Table 1). Most downgrades stemmed from convenience sampling and self-reported behaviour metrics.

3.4 Narrative Synthesis (5W1H Framework)

(1) Who: Samples were predominantly male (63 %) and aged 18–23 y. Four studies focused on Chinese police colleges; three on Canadian or UK academies; the remainder involved general undergraduates as comparators.

(2) What: Across the evidence base four behavioural domains emerged: physical activity, sleep quality, mindfulness/stress-management, and a composite lifestyle-enhancement curriculum. Physical activity was by far the most frequently examined exposure (k = 6) and consistently showed moderate, positive correlations with total CA scores (r = 0.31-0.46) as well as a medium standardised mean gain (Hedges g= 0.35) in the two intervention studies [3–5,14]. In contrast, the single study that focussed specifically on sleep reported that poorer subjective sleep quality predicted lower CA and higher burnout (standardised β = -0.31) [17], highlighting recovery as a potential vulnerability in cadet life. Three studies investigated mindfulness-based or stress-management practices; all found indirect benefits on CA, typically mediated by basic psychological-needs satisfaction or vocational identity (mediation β = 0.27-0.34) [11,19]. Finally, one curriculum-level intervention that bundled career-education skills with lifestyle coaching produced an improvement in career decision self-efficacy which, in turn, elevated CA (β = 0.41) [7]. These domain-specific patterns are summarised in Table 2.

Table 2. Behaviour Domains and Their Association with Career Adaptability

Behaviour	k	Direction of association with CA	Illustrative effect
Physical activity	6	Positive in all studies	r = 0.31-0.46; Hedges g = 0.35
Sleep quality	1	Poor sleep ↓ CA	β = -0.31
Mindfulness /stress-mgmt.	3	Indirect ↑ CA via BPNS or identity	Mediation β= 0.27–0.34
Composite lifestyle curriculum	1	Improved CSE → ↑ CA	β = 0.41

BPNS = basic psychological-needs satisfaction; CSE = career decision self-efficacy.

(3) Where/When: Interventions ranged from 4-week app challenges to 8-week Tai Chi classes [14]. Observational studies captured habitual behaviours over one semester or one academic year [5].

(4) Why/How – mechanisms: Mechanistically, the evidence suggests that health behaviours strengthen career adaptability (CA) through four complementary pathways. First, self-determined motivation: regular physical activity nurtures autonomous regulation, which in turn elevates the control and confidence facets of CA [3]. Second, stress buffering: mindfulness-based practices satisfy students' needs for autonomy and competence, lowering perceived stress levels and thereby permitting CA to develop more robustly [19]. Third, physiological recovery: sufficient, good-quality sleep mitigates the detrimental link between chronic fatigue/burnout and CA, preserving adaptive resources [17]. Fourth, identity formation: lifestyle-oriented curricula appear to enhance professional identity and decision-making self-efficacy, which act as sequential mediators that translate healthy behaviours into higher CA scores [7]. Collectively, these pathways depict a virtuous cycle in which healthier bodies and minds foster greater vocational adaptability.

Barriers unique to Chinese academies included dormitory noise curtailing sleep and drill schedules crowding out leisure PA [9,11]. Faculty interviewees advocated embedding short mindfulness breaks into tactical skills classes [4].

4. Discussion

4.1 Principal Findings

This systematic review synthesised 13 studies examining links between health behaviours and career adaptability (CA) in judicial-police college settings. Physical activity emerged as the most consistently beneficial factor, showing medium-size positive associations with overall CA and its control and confidence dimensions [3–5,14]. Mindfulness-based practices and multicomponent curricula also promoted CA, although mainly through indirect pathways—basic psychological-needs satisfaction, vocational identity and career decision self-efficacy [7,11,19]. By contrast, empirical evidence for sleep hygiene was limited to a single cross-sectional study, yet indicated that poor sleep undermines CA and heightens burnout risk [17]. Qualitative work from Chinese academies highlighted structural barriers—dormitory noise and drill schedules

curtailing restorative sleep and leisure exercise—and suggested embedding brief mindfulness breaks into tactical classes to mitigate stress [12,13,15]. Together, these findings depict a modifiable behavioural ecosystem in which movement, recovery and self-regulation skills converge to strengthen cadets' vocational adaptability.

4.2 Practical Implications

(1) Curriculum design: Embedding structured, evidence-informed physical-activity modules (e.g., Tai Chi, circuit training) into daily timetables could yield dual dividends in operational fitness and CA. Short "mindful micro-breaks" during tactical drills, as advocated by faculty interviewees [12], may further buffer stress and support the concern and curiosity facets of CA.

(2) Campus environment: Addressing dormitory noise—through quiet-hours policies or noise-reducing infrastructure—could improve sleep quality and, by extension, CA [15,17]. Scheduling adjustments that leave protected slots for leisure exercise may also counteract the crowd-out effect of intensive drill routines [5].

(3) Student services: Integrating wellness coaching with career-guidance services may reinforce the identity-formation pathway identified in curriculum studies [7,11], fostering a virtuous cycle in which healthy habits and vocational self-efficacy co-develop.

4.3 Limitations

Evidence synthesis was limited by (i) design heterogeneity—five cross-sectional surveys, three quasi-experiments and minimal randomised trials; (ii) self-reported behaviour metrics, susceptible to recall and social-desirability bias; (iii) geographic clustering—a predominance of Chinese and Canadian samples, constraining generalisability; (iv) language and publication bias, despite bilingual searching; and (v) domain imbalance—only one dedicated sleep study and no nutrition-only investigations. These factors led to moderate-to-low GRADE certainty for most behaviour domains. Absence of pooled effect estimates further limits precision, although narrative convergence provides preliminary confidence in the direction of associations.

4.4 Directions for Future Research

(1) Rigorous intervention trials: Randomised or stepped-wedge designs testing integrated exercise-sleep-mindfulness packages could establish causality and quantify dose–response effects on CA.

(2) Objective measurement: Wearables (accelerometry, actigraphy) and ecological momentary assessment of stress would reduce reliance on self-report.

(3) Longitudinal mediation: Multi-wave models should trace how changes in health behaviour translate into CA growth via motivation, identity and physiological recovery pathways.

(4) Cross-cultural replication: Extending research to police-training institutions in Europe, Africa and the Global South will test the universality of observed mechanisms.

(5) Digital health solutions: App-based platforms (e.g., #MoveMore challenge [14]) offer scalable avenues to embed behaviour change techniques and monitor progress in real time.

(6) Nutrition and combined behaviours: Dedicated studies isolating dietary quality—and synergistic analyses of combined lifestyle factors — remain a pressing gap.

5. Conclusion

The evidence, albeit heterogeneous, converges on a clear message: healthier cadets are more adaptable cadets. Systematic integration of physical activity, adequate sleep and mindfulness practices into judicial-police curricula, coupled with supportive campus environments, could bolster the psychosocial resources new officers need to navigate an increasingly complex security landscape.

Acknowledgments

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