South American Publishing

SAP Transport, Mobility & Society. 2026;5:350
doi: 10.62486/tms2026350

REVIEW

Children's independent mobility and school travel policies: convergences, divergences and open questions

Movilidad infantil independiente y políticas de viaje escolar: convergencias, divergencias y preguntas abiertas

Alejandra Esquivel de los Santos[1]
Yeimys Judith Diaz Herrera[2]
Jose Humberto Puente[3]

[1] Instituto Técnico en Ciencias Computacionales de Reynosa A.C., Reynosa, México
[2] Universidad de Cartagena, Colombia
[3] Universidad Pedagógica Experimental Libertador, Venezuela

Submitted: 25-06-2026 | Revised: 29-08-2026 | Accepted: 05-11-2026 | Published: 10-11-2026

Corresponding Author: Yeimys Judith Diaz Herrera

ABSTRACT

Children's independent mobility, the freedom to move about public space without adult accompaniment, has fallen across successive generations in many high-income countries, and the school journey has become a central site of policy intervention to reverse that decline. This narrative review weighs the empirical evidence on children's independent mobility and school travel policies, separating converging positions, contested positions and unresolved questions. The evidence converges on distance, child age and parental traffic-safety concern as the strongest correlates, and on modest but real associations of independent mobility and active travel with physical activity and well-being. It diverges on the effectiveness and equity of school travel policies, where evaluation designs and local implementation account for much of the disagreement. The review argues that restoring children's independence requires policies that address both the built environment and parental risk perceptions, and that equity must be measured rather than assumed.

Keywords: children's independent mobility; active school travel; walking to school; school travel policy; active transport; child health.

RESUMEN

La movilidad infantil independiente, la libertad de desplazarse por el espacio público sin acompañamiento adulto, ha disminuido entre generaciones sucesivas en muchos países de ingreso alto, y el viaje escolar se ha convertido en un lugar central de intervención política para revertir esa caída. Esta revisión narrativa pondera la evidencia empírica sobre movilidad infantil independiente y políticas de viaje escolar, separando posiciones convergentes, posiciones controvertidas y preguntas no resueltas. La evidencia converge en la distancia, la edad del niño y la preocupación parental por la seguridad vial como los correlatos más fuertes, y en asociaciones modestas pero reales de la movilidad independiente y el viaje activo con la actividad física y el bienestar. Diverge en la efectividad y equidad de las políticas de viaje escolar, donde los diseños de evaluación y la implementación local explican gran parte del desacuerdo. La revisión sostiene que restaurar la independencia infantil exige políticas que atiendan tanto el entorno construido como las percepciones parentales de riesgo, y que la equidad debe medirse, no asumirse.

Palabras clave: movilidad infantil independiente; viaje activo a la escuela; caminar a la escuela; política de transporte escolar; transporte activo; salud infantil.

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INTRODUCTION

Children's independent mobility denotes the freedom a child has to move around their neighbourhood and city without an adult escort, whether on foot, by bicycle or by public transport.

Hillman et al.(1)framed the construct in their study of English schoolchildren and tied it to a licence that parents grant children to use public space without supervision.

The concept matters because it links transport planning to child health and to the everyday autonomy of young people, and because it is routinely treated as a precondition for the physical activity, spatial knowledge and social competence children acquire as they grow.(2,3)

One position dominates the field: independent mobility has collapsed, and the collapse is a public problem.

Hillman et al.(1)reported that the share of seven- and eight-year-olds in England allowed to travel to school without an adult fell from 80 percent in 1971 to 9 percent in 1990.

Shaw et al.(4)extended the comparison to Germany and to 2010, and their international comparison of 18,303 children aged 7 to 15 across sixteen countries concluded that low independent mobility is now the norm even where walking and cycling infrastructure is strong.(5)

Kyttä et al.(6)reached a similar verdict for Finland, a country long treated as an exception, and described the cohorts they surveyed as the last free-range children.

A second position qualifies that narrative. It holds that the decline is a rational parental response to motor traffic rather than a loss of nerve, so that restoring independence depends on engineering the road environment rather than on persuading parents to tolerate more risk.(6,7)

Proponents of this reading point to the persistence of comparatively high independence in Finland, Japan and Denmark, where the decline has been slower than in English-speaking countries, and to the fact that children themselves describe traffic as the threat parents say it is.(5)

The school journey has become the arena in which these positions collide, because it is the trip children make most often and the one governments can shape most directly. School travel policies, from Safe Routes to School infrastructure and walking school buses to school streets and school travel planning, promise to restore active and independent travel, but their evidence base is contested: evaluations disagree on whether the gains are real, durable and equitably distributed.(8,9)

The stakes are not confined to transport, since the school trip carries much of the daily physical activity children obtain and much of the risk they face.(3)The two sides of the debate read the same numbers differently: one sees a public health loss to be reversed, the other a safety gain to be defended, and both can point to evidence.(2,10)

This review weighs the evidence for these positions rather than adjudicating them. Its aim is to identify where studies of children's independent mobility and school travel policies converge, where they diverge and why, and which questions remain open. Three questions guide the synthesis: how independent mobility and active school travel are conceptualized and measured; which determinants and outcomes are best supported; and what the evidence shows about the effectiveness and equity of school travel policies.

DEVELOPMENT

(Table 1) The five axes below set out the positions, the evidence and the questions that remain open, and Table 1 summarizes them. Findings are reported in the past tense as results of the cited studies, and each divergence is traced to the methodological reason that most plausibly explains it.

Concept, measurement and temporal trends

Studies converge on a definitional core. Independent mobility is measured as the licence children have to move without adult supervision, whether as a set of permissions, as destination access or as the share of unsupervised trips.(11)

Bhosale et al.(12)compared interactive mapping with destination access and licence scales in 219 children and found that the instruments correlated but captured different parts of the construct. T

he temporal finding is equally consistent: in the countries with repeated measurement, independent mobility declined across the twentieth century and has not recovered.(4,6)

Lidbe et al.(13)reported the same direction in United States school travel mode choices over recent decades, with the car share rising as walking declined.

Table 1. Synthesis of the evidence by thematic axis.

Axis	Convergent evidence	Divergent or open questions	Representative studies
Concept, measurement and trends	A generational decline in CIM where it has been measured repeatedly, against a shared definitional core	The size and current level differ by country; no standardized instrument	Hillman et al. 1990; Shaw et al. 2013, 2015; Kyttä et al. 2015; Bates et al. 2015
Determinants	Distance, child age and parental traffic-safety concern are the strongest correlates	Objective versus perceived built environment; size and origin of the sex gap	Ikeda et al. 2018, 2019; Riazi et al. 2022; Marzi et al. 2018; Villanueva et al. 2013
Outcomes	Positive associations with physical activity, development and well-being	Magnitude and mechanism; reverse causation and dose	Schoeppe et al. 2013; Ferreira et al. 2024; Stark et al. 2018; Wu et al. 2025
Policies and interventions	Engineered safety raises walking and cycling and reduces pedestrian injury	Supervised schemes show modest effects; durability and equity uncertain	McDonald et al. 2013; Buttazzoni et al. 2018; Johnson et al. 2024; Patterson et al. 2025
Equity and context	Disadvantage and disability are under-served	The socioeconomic gradient changes sign across contexts; voices rarely counted	Carver et al. 2014; Ross et al. 2018; Pojani and Boussauw 2014; Medeiros et al. 2021

The instruments behind these series differ enough to matter. Kyttä et al.(6)used a set of licences covering travel to school, leisure destinations and play, a scheme that treats independence as graded permission rather than a single threshold.

Destination-access measures count where a child may go, interactive mapping captures where they went, and licence scales record what parents say they would allow.(11)

Bhosale et al.(12)found these three only moderately correlated, which explains why studies using different instruments reach different absolute levels of independence for the same city, and why Sharmin and Kamruzzaman(14)argue for a trip-based ratio that is less dependent on parental wording.

Where studies diverge is on the size and current level of the decline.

Shaw et al.(5)placed Finland, Germany, Norway, Sweden, Japan and Denmark well above France, Israel, Sri Lanka, Brazil, Ireland, Australia, Portugal, Italy and South Africa, a spread they attributed to differences in car dominance and in national tolerance for traffic risk rather than to climate or wealth.

Carver et al.(7)likewise found lower independence in Australia than in England despite similar urban forms, which they read as evidence that cultural permission, not the built environment alone, sets the ceiling. This reading holds that the decline is a policy choice rather than a law of development.

The persistence of high independence in Japan, where young children make short solo trips to school from the first primary years, and in the Nordic countries, where winter does not suppress walking, supports the view that the ceiling is set by social norms and car restraint rather than by infrastructure alone.(5,6)

The trend data also invite a cohort interpretation. Each cross-section that reports a decline compares different children, and the licence a parent grants a seven-year-old is shaped by the mobility that parent had at the same age.(4)

The comparative studies capture this only partly, because they ask about the child's licence, not about the parent's, so the transmission of the decline across generations remains inferred rather than measured.(6)

The generational question matters for policy, because a norm that is handed down cannot be reversed by a single infrastructure grant, and the countries that have slowed the decline are those that acted on both the street and the social norm at once.(5)

The measurement problem cuts across both positions. Parent-reported licences confound permission with practice, and destination access ignores the quality and meaning of the journey.(11)

Sharmin and Kamruzzaman(14)proposed the proportion of independent to dependent trips as a measure sensitive to the built environment, but it has not been validated across settings. The temporal series rest mostly on parent report, so part of the measured decline could reflect changing reporting norms rather than changing behaviour. Until a shared instrument is adopted, the field will keep reporting country differences that are partly artefacts of method.(11)

Determinants of independent mobility and active school travel

Across designs, distance stands out as the strongest and most robust correlate of active and independent school travel, followed by child age and by parental concern about traffic.(15,16)

Mehdizadeh et al.(17)quantified walking time to school and confirmed that distance sets a hard constraint on mode choice, while Chillón et al.(18)showed that distance and parental barriers operate together in United States samples.

Kent et al.(19)reviewed the distances and durations of active school travel and showed that the threshold at which walking and cycling collapse is tight, which turns school siting and catchment policy into de facto mobility policy.

The meta-analysis of New Zealand children by Ikeda et al.(20)estimated built-environment associations from individual participant data, and their structural equation models indicated that household and individual factors act partly through parental attitudes.(21)

Riazi et al.(22)replicated the age and neighbourhood pattern in a Canadian multi-site study, and Buliung et al.(23)found the same gradient in Toronto.

Studies part company on the weight of the objective built environment relative to the perceived one.

Villanueva et al.(24)reported that neighbourhood walkability predicted independent mobility after adjusting for parental, sociocultural and individual factors, whereas Helbich et al.(25)found in a Dutch GPS study that natural and built exposures predicted active school travel only weakly once distance and household characteristics were held constant.

The divergence is methodological rather than substantive: the Melbourne estimate relies on self-reported licences, the Dutch one on objectively recorded routes, and the two quantify different things. Ozbil et al.(26)came closer to reconciling the positions by modelling perceived and objective street measures together, and Lopes et al.(27)attributed the urban-rural gradient in Portugal to motorized modes rather than to distance alone. A meta-analytic review by Sharmin and Kamruzzaman (28) found built-environment associations for independent mobility that were real but small, a result consistent with the idea that the environment acts through parental permission.

The social environment sits between these positions. Wolfe and McDonald(29)attributed independent mobility to parental perceptions of neighbours rather than to built form, and Pacilli et al.(30)tied independence in Italian children to their participation in public space.

Wilson et al.(31,32)reported from participatory mapping that children weigh sociality and nature alongside traffic, a view that surveys of parents understate.

Parental support appears to be a distinct lever: Mah et al.(33)found that support predicted active school travel after accounting for household characteristics, and van den Berg et al.(34)linked parental safety perception and satisfaction to the mood children carried into school. Norms act as a further layer, since school travel mode choice is partly explained by environmental norms and parental transport priorities.(35,36)

The direction of these associations remains open, because permission and behaviour plausibly reinforce each other and the longitudinal designs that would separate them are absent from these samples.(37,38)

Household resources set the floor beneath these gradients. Car availability, parental work schedules and the number of children compete with the child's age for influence, and the age at which parents grant the licence varies more across cultures than within them.(16,23)

Two children of the same age in the same neighbourhood can therefore hold different independence because their households run different trip chains, a pattern that aggregate models of the built environment capture only indirectly.(39)

The licence itself deserves treatment as an outcome rather than only as a mediator. Studies that measure permission separately from behaviour find that the two move together but are not the same thing, and that permission responds to neighbourhood features even when behaviour does not.(11,38)

Framing the licence as the target clarifies why two households with identical built environments reach different decisions, and it aligns the measurement agenda of the field with the outcome that parents actually control.(12)

Sex differences are reported almost universally, with boys granted more independence than girls, but their size and origin are contested.

Marzi et al.(40)reviewed the correlates separately by sex and gender and could not attribute the gap to a single environmental driver, while Ghekiere et al.(41)found that the socio-ecological correlates of independent cycling differed between boys and girls.

This reading cautions against treating gender as a control variable rather than as a mechanism, and against universal policies that ignore how girls and boys use streets differently.(42)

The built environment and sociodemographic characteristics also combine unevenly across children, so aggregate models explain less than they appear to.(39)

Health, developmental and safety outcomes

The outcome literature is the most convergent part of the field. The systematic review by Schoeppe et al.(3)concluded that children's independent mobility and active travel were positively associated with physical activity and, less consistently, with lower sedentary time and healthier weight status.

A later systematic review extended the benefit beyond energy expenditure to autonomy itself, linking independent mobility to cognitive and socio-emotional development.(43)

Longitudinal and quasi-experimental evidence supports the well-being reading: Stark et al.(44)reported better attitudes and psychological well-being among active school travellers, Ramanathan et al.(45)documented positive emotion during the journey itself, and Wu et al.(46)estimated a causal effect of active school travel on children's subjective well-being from a Chinese panel.

The developmental evidence points in the same direction. Ferreira et al.(43)concluded that autonomy itself, rather than movement alone, predicted better cognitive and socio-emotional outcomes, and Stark et al.(44)found that the psychological benefit attached to the journey rather than to the destination.

These findings locate the value of independent mobility in what children gain by finding their way alone, not only in the energy they expend, and they imply that a policy that swaps an active accompanied trip for a sedentary independent one would miss part of the benefit.

The disagreement concerns magnitude and mechanism. Weight-status associations are weak and inconsistent across studies, and Schoeppe et al.(3)themselves flagged the scarcity of intervention studies as the reason causal claims were premature.

Martin et al.(47)qualified the well-being benefit: perceived neighbourhood safety moderated the association, so that active travel improved health-related quality of life only where children felt safe. Time of day adds a further condition, since independent mobility falls sharply during dark hours and the evidence on evening travel is thin.(48)

What remains open is reverse causation and dose. Children who are already fitter and more confident may be the ones granted independence, and no study has established how much unsupervised travel is enough to matter for health. The well-being estimates are also vulnerable to the same measurement problem that affects the exposure side of the field, because independence, active travel and the outcomes are self-reported in the same instrument in many of these studies.

The safety question cuts both ways. The very traffic exposure that makes parents withhold independence is also the exposure that active travel policies seek to manage, and the studies reviewed treat the two as separate questions rather than as one trade.(47)

Independent mobility also varies across the day: the scoping review by Litsmark et al.(48) documented how sharply the licence contracts during dark hours, which means that a child judged independent in a summer questionnaire is not independent in the winter school run that the same instrument would capture.

The school trip is also a question of dose. Active school travel can contribute a substantial share of recommended daily physical activity, and parental support for the trip is one of the few modifiable determinants with consistent evidence.(3,33)

Even so, the dose depends on distance and duration, which are short for most children, so the journey alone cannot carry the whole activity burden and the health case rests on autonomy as much as on energy expenditure.(19,43)

School travel policies and interventions

(Table 2) Policy positions converge on the mechanism, which is to make the school journey safer and more attractive, but they diverge on the size of the effect. Table 2 lists the main instruments and the state of their evidence.

The strongest convergent result comes from engineered safety. The Oregon evaluation by McDonald et al. found that Safe Routes to School infrastructure and non-infrastructure investments raised walking and cycling among treated schools,(49)and a separate analysis showed the programme was associated with lower school-aged pedestrian injury.(10)

School travel planning, the Canadian and Australian model, is associated with a shift from car to active travel in several before-after cohorts,(50,51)and its influence appears to run through school policies and practices as much as through infrastructure.(52)

Buttazzoni et al.(53)reported a comparable regional pattern in elementary schools, and school-level walkability audits formalize the same logic by scoring routes and schools for intervention priority.(54)

Table 2. School travel policies and interventions, their stated mechanism and the state of evidence.

Policy instrument	Stated position or mechanism	Evidence status	Representative studies
Safe Routes to School and engineered safety	Safer crossings and lower vehicle speeds raise walking and cycling and reduce injury	Convergent, mostly quasi-experimental	McDonald et al. 2013; DiMaggio et al. 2013
School travel planning	Mobilize school and community resources to shift car trips to active modes	Convergent for mode shift, modest effect	Mammen et al. 2013, 2014; Buttazzoni et al. 2019
Walking school bus	Adult-supervised group walking to raise activity and safety	Divergent; small gains and volunteer dependence	Turner et al. 2013; Johnson et al. 2024
School streets and traffic restriction	Close or restrict vehicle access at the school gate	Promising but inconclusive; durability and equity open	Aliyas et al. 2026; Patterson et al. 2025; Alliott et al. 2026
School walkability audit	Score routes and schools to prioritize investment	Convergent as a planning tool	Lee et al. 2020

Supervised schemes such as the walking school bus tell a more qualified story. Turner et al.(55)found that walking school bus programmes were rare in United States elementary schools, which limits their reach, and a cluster randomized controlled trial detected only modest increases in physical activity that depended on sustained adult volunteers.(56)

Buttazzoni et al.(8)reviewed North American intervention methodologies and attributed the mixed results to weak designs and short follow-up rather than to failure of the instruments themselves, and their qualitative account of a regional Safe Routes to School programme identified implementation capacity as the binding constraint.(57)

An umbrella review of the correlates and interventions reached the same conclusion.(9)

The instruments do not substitute for one another. School travel planning changes the journey through engagement and low-cost fixes, engineered safety changes the road, and school streets change the space at the gate, and each reaches a different population.

The global programme reviews conclude that combined approaches outperform single instruments, and that the children least likely to benefit are those whose schools lack the staff and parent capacity that even the cheapest instruments require.(57,58)

This is a reach problem as much as an effectiveness problem, and it is why the school street, which requires no volunteer roster, has spread faster than the walking school bus it partly replaces.(59,60)

The evaluation record is constrained by the way programmes are selected for study. Schools that adopt Safe Routes to School or travel planning are self-selected, so before-after gains confound the intervention with the motivation of the schools that sought it, and spillovers to neighbouring schools dilute the comparison groups.(8,53)

The controlled and randomized designs that avoid these threats are newer and fewer, so the convergent and divergent findings on policy currently rest on different kinds of evidence and cannot yet be resolved by weighting one against the other.(56,61)

School streets and traffic restriction schemes are the fastest-growing instrument, and their evidence is still forming. Canadian School Street studies link the closures to more independent mobility and active travel,(59)and a controlled natural experiment measured the effectiveness and equity impacts of restriction schemes outside schools.(61)

Alliott et al.(62)identified the mechanisms, which include reduced vehicle speed at the gate and a changed parental calculus, and Rutberg et al.(63)showed that children themselves request the changes these schemes deliver.

Durability once novelty fades remains open, as does the question of whether the gains reach the children with the least independence.(60,61)

The global programme reviews agree that effectiveness depends on implementation context more than on the instrument chosen.(19,58)

The equity question is now explicit in the strongest designs: Patterson et al.(61)measured equity impacts alongside effectiveness, and their controlled natural experiment is the template the field has been missing, because it separates who benefits from how much the average child benefits.

Equity and context

The equity axis converges on a gap between who needs active travel and who receives it.

Children in disadvantaged areas have lower independent mobility and territorial range in Australian and Canadian samples,(22,64)and disability is systematically under-treated in both the

active school travel and the independent mobility literatures.(65)

A scoping review of ableism in school transportation reached the same conclusion for school systems.(66)

Parents in disadvantaged neighbourhoods frame the same trip in terms of risk that wealthier families report as routine, which shapes their willingness to allow independent travel.(67)

The direction of the socioeconomic gradient, however, is not universal. In Tirana, Pojani and Boussauw(68)documented high active school travel that persisted largely because car ownership was low, and Latin American surveys show high active commuting alongside income-related differences in escorting.(69)

patial analyses in Mexico City link escorting to active travel in ways that invert the high-income pattern,(70)and adolescent public transport use follows its own set of constraints.(71)

This contrasts with the English-speaking pattern and indicates that active travel can signal constraint as much as freedom.(72)

Cross-national equivalence compounds the difficulty. The instruments developed in Europe and North America assume a child who may walk or cycle, and they do not map onto cities where the dominant independent mode is public transport or where the school trip is negotiated collectively.(71)The equity claims estimated in high-income settings therefore cannot yet be transferred to the lower-income cities where active travel is highest,(68,69)and the field has no shared yardstick for deciding whether a child in Tirana and a child in Toronto hold the same independence.

The voices that are counted form a further divide. Children and adolescents describe the school journey in terms of sociality and belonging that parents report as risk,(73,74)and culturally safe options are a precondition for meaningful participation in some communities.(75)

The review of gender, socioeconomic and ethnic reporting in intervention studies concluded that most programmes neither measure nor report equity,(76)which means the field can currently say little about who benefits.

Closing that gap would require collecting the same equity variables across studies, a change that is procedural rather than costly, and it would let the effectiveness and equity questions be answered from the same designs instead of from separate literatures.

DISCUSSION

A synthesis premised on the strongest version of the decline narrative would predict that independent mobility fell everywhere, that no policy restores it, and that the outcome evidence is too weak to justify action.

The assembled literature supports a more qualified position. Independent mobility has fallen in the countries that measure it repeatedly, but the level and pace vary widely, and the decline tracks car dominance and traffic risk more than climate or wealth.(5,6)

The outcome associations are modest, yet they are consistent across designs and include a quasi-experimental estimate for well-being,(46)which is more than the strongest version of the sceptical position concedes.

The divergences in this literature are mostly methodological, and naming the method that produces each one is more useful than appealing to context. The gap between objective and perceived built environment rests on measurement: self-reported licences behave differently from GPS-recorded routes, and each is being asked to stand for independence.(24,25)

The gap on policy effectiveness rests on design: programmes evaluated with before-after cohorts report gains, while randomized and controlled designs find smaller effects, and short follow-up hides decay.(8,56)

This reading of the field implies that the next generation of evidence should measure the built environment and the licence together, and should evaluate policy with designs that can detect equity, not only average effect.(61,76)

The synthesis also reorders the field's priorities. Determinants of the licence, and especially parental traffic-safety concern, explain more of the variation than most single built-environment variables, which suggests that policy must move both levers at once.(15,16)

This contrasts with earlier reviews that treated the built environment as the primary target,(2) and it aligns with the newer finding that school streets work partly by changing the parental calculus rather than the asphalt alone.(59,62)

Where the earlier reviews and this one agree is on measurement: without a shared instrument, cross-national comparison will keep producing apparent divergences that are artefacts of method.(5,11)

Read across the axes, the equity findings are the least settled and the most consequential. The same design that makes a school street effective also determines whether its benefits reach the children who already hold the least independence, and the natural experiments now measuring that question remain the exception rather than the rule.(61,76)

The socioeconomic gradient changes sign across contexts, so equity cannot be imported from one setting to another: a policy that raises active travel in a car-dependent suburb may be irrelevant in a city where walking is already the default and the binding constraint is safety rather than access.(64,68)

The classic evaluations read differently when placed beside the newer designs. The walking school bus studies that reported activity and pedestrian-safety gains were small and often volunteer-led,(77,78)and the early school travel planning literature documented mobilization rather than durable mode shift.(79)

These are not failures: they are what the instrument can achieve under the conditions that made the pilots possible.

The cluster trial that followed found the ceiling those conditions impose,(56)and structural instruments that change the road, not the roster of volunteers, now attract the field's attention for that reason. State-level laws that codify Safe Routes to School priorities operate on the same logic, by embedding the programme in policy rather than in individual schools.(80)

The road-safety framing deserves more weight than either camp gives it. The decline of independent mobility coincided with large reductions in child road casualties, and the parental concern that drives the decline is a response to a real hazard concentrated on the routes to school rather than an irrational anxiety.(10,34)

Treating the decline as a loss of nerve misreads that evidence, while celebrating the casualty reductions as an unqualified gain obscures that they were bought partly by confining children indoors. A policy that lowers speed at the school gate attacks both sides of this trade at once, which is the mechanism the school street exploits.(59,62)

The three bodies of evidence connect through a single causal chain. Parental risk perception, built by traffic exposure and social norms, sets the licence; the licence sets how much children move and what they learn while moving; and policy acts on the first link of that chain, either by lowering the exposure through engineering or by reshaping the norm through school-level culture.(15,29,43)

The interventions that appear most effective are those that strike the first link, and the school street has advanced while exhortations to walk have not.(56,59)

For practice, the review supports three implications. First, school travel policy should be judged on whether it increases the licence, not only the mode share, because the health and developmental benefits attach to autonomy rather than to walking alone.(3,43)

Second, interventions that rely on adult volunteers have a built-in ceiling, and their modest average effects in trials should be read as a call for structural alternatives such as school streets and traffic restriction.(56,61)

Third, equity must be measured as an outcome, because the socioeconomic gradient changes sign across contexts and cannot be assumed.(64,68)

For practice, this translates into a short list of moves that are defensible on the current evidence. School siting and catchment policy should treat distance as a mobility decision, since the threshold at which walking collapses is known and tight.(19)Speed management at the gate should precede or accompany any behavioural campaign, because it addresses the parental calculus that the built-environment and social-environment literatures both identify as decisive.(15,29)

And every new school street or traffic restriction should be instrumented to report who benefits, by income and disability, so that the equity question stops being a limitation and becomes a measured outcome.(61,76)

The field needs a validated instrument that separates permission, practice and destination access, longitudinal designs that identify the direction of the health associations, and policy evaluations that report equity and durability by design.

The most tractable next step is to attach those measurements to the school street and traffic restriction programmes now expanding, so that the instrument being scaled is evaluated at the moment of scaling. The same instrumentation would deliver the dose-response and equity estimates the field lacks, and it would turn the next generation of school travel policy into a testable proposition rather than a hope.

CONCLUSIONS

Children's independent mobility has declined where it has been measured repeatedly, but the decline is uneven and tracks traffic risk more than any fixed law of development. The evidence converges on distance, child age and parental traffic-safety concern as the dominant determinants, and on modest but consistent associations of independence and active travel with physical activity and well-being.

School travel policies diverge in their measured effects, and the divergence is explained by evaluation design and implementation rather than by a failure of the instruments themselves. The licence to move without supervision, not the mode share alone, is the outcome that policy should target, and equity must be measured rather than assumed if the school journey is to become more than a daily negotiation between risk and autonomy. What the evidence offers is not a single answer but a sharper question: how to rebuild the licence to move for the children who have lost it, without asking their parents to trade safety for it.

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FUNDING

No financing

CONFLICT OF INTEREST

None

AUTHORSHIP CONTRIBUTIONS

Drafting – original draft: Alejandra Esquivel de los Santos, Yeimys Judith Diaz Herrera, Jose Humberto Puente.
Writing–review and editing: Alejandra Esquivel de los Santos, Yeimys Judith Diaz Herrera, Jose Humberto Puente.