Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity

Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain

E-mail: v.arufe@udc.es Web: www.sportisjournal.com

ISSN-e 2386-8333

Creative Commons

Original article. Barriers and facilitators of active commuting to school: a qualitative study with families and students in south-central Chile. Vol. 12, n. º 2; p. 1-27, April 2026.
https://doi.org/10.17979/sportis.2026.12.2.12469

Barriers and facilitators of active commuting to school: a qualitative study with families and students in south-central Chile

Barreras y facilitadores del desplazamiento escolar activo: un estudio cualitativo con familias y estudiantes del centro-sur de Chile

Eugenio Merellano-Navarro[1], Antonia Morán-Toloza[2], Sergio Sepúlveda-Vallejos[3], Juan Aristegui-Mondaca[4], Mirko Aguilar-Valdés[5*]

[1] Facultad de C.C de la Actividad Física, Universidad Católica del Maule, Talca, Chile

[2] Facultad de C.C de la Educación, Universidad Católica del Maule, Talca, Chile

[3] Doctorado en Educación en Consorcio, Universidad Católica del Maule, Talca, Chile

*Correspondence Author: Mirko Aguilar-Valdés, maguilarvaldes@gmail.com

Editorial schedule: *Article received 22/07/2025 Accepted: 20/12/2025 Published: 01/04/2026*

https://doi.org/10.17979/sportis.2026.12.2.12469

To cite this article use the following reference:
Merellano-Navarro, E.; Morán-Toloza, A.; Sepúlveda-Vallejos, S.; Aristegui-Mondaca, J.; Aguilar-Valdés, M. (2026). Barriers and facilitators of active commuting to school: a qualitative study with families and students in south-central Chile. Sportis Sci J, 12 (2), 1-27 https://doi.org/10.17979/sportis.2026.12.2.12469

Author contribution: Conceptualization, E.M.-N. and M.A.-V.; methodology, E.M.-N.; M.A.-V. and S.S.-V. software, J. M.A.-V. and S.S.-V.; validation, E.M.-N; formal analysis, E.M.-N.; investigation, A.M.-T, and J.A.-M.; resources, E.M.-N. and M.A.-V..; data curation, A.M.-T, and J.A.-M.; writing—original draft preparation, E.M.-N. and P.P.-H.; writing—review and editing, E.M.-N. and A.G.-C.; visualization, S.S.-V.; A.M.-T, and J.A.-M.; supervision, M.A.-V. and S.S.-V..; project administration, E.M.-N..; funding acquisition, E.M.-N. All authors have read and agreed to the published version of the manuscript.

Funding: This work was financed by a grant from the National Research and Development Agency (in Spanish, ANID) of Chile awarded to E.M.-N., through FONDECYT (code: 11240343). M.A.-V., thanks National Agency for Research and

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

Development, for the funding granted through the National Doctoral Scholarship/2023 - Folio 21232143.

Conflict of interest: The authors declare no conflict of interest.

Ethical aspects: The study was approved by the ethics committee of Universidad Católica del Maule (Code: 27/2024).

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333

Original article. Barriers and facilitators of active commuting to school: a qualitative study with families and students in south-central Chile. Vol. 12, n. º 2; p. 1-27, April 2026.
https://doi.org/10.17979/sportis.2026.12.2.12469

Abstract
Active commuting to school has emerged as a key strategy to increase physical activity levels among school-aged children and to promote more sustainable urban environments. However, its effective implementation depends on multiple individual, family, social and structural factors. The aim of the study was to analyze the barriers and facilitators perceived by parents and their children regarding the adoption of active commuting to school in Chile. This qualitative study explored the barriers and facilitators perceived by parents and high school students regarding the use of active commuting to school in a city in south-central Chile. Through semi-structured interviews (n = 9) and focus groups (n = 3; total participants = 17), data were collected and analyzed using a reflective thematic approach with the support of Nvivo15 software. The results revealed barriers related to adverse environmental conditions, deficiencies in urban infrastructure, family sociocultural practices, economic constraints and the absence of effective public policies. On the other hand, facilitators such as social support, timetable organization, the role of families as promoters, and education in road safety and cycling were identified. These findings show the need to address active commuting to school as a complex and situated phenomenon, which requires intersectoral interventions, coherent local policies and educational strategies that promote autonomy, safety and well-being on the school route. The study provides contextualized evidence to guide future interventions and public policies in similar urban contexts in Latin America.
Keywords: physical activity; public health; health promotion; bicycling; walking.

Summary
El desplazamiento activo se ha consolidado como una estrategia clave para aumentar los niveles de actividad física en la población escolar y promover entornos urbanos más sostenibles. Sin embargo, su implementación efectiva depende de múltiples factores individuales, familiares, sociales y estructurales. El objetivo del estudio fue analizar las barreras y facilitadores percibidos por los padres y sus hijos para el desarrollo del desplazamiento activo en Chile. Este estudio cualitativo exploró las barreras y los facilitadores percibidos por los padres y los estudiantes de secundaria con respecto al uso del desplazamiento activo en una ciudad del centro-sur de Chile. A través de entrevistas semiestructuradas (n = 9) y grupos focales (n = 3; n = 17), se recopilaron y analizaron los datos utilizando un enfoque temático reflexivo con el apoyo del software Nvivo15. Los resultados identificaron barreras relacionadas con condiciones ambientales adversas, deficiencias en la infraestructura urbana, prácticas socioculturales familiares, limitaciones económicas y la ausencia de políticas públicas eficaces. Por otro lado, se reconocieron facilitadores como el apoyo social, la organización de horarios, el papel de las familias como promotoras y la formación en cultura vial y ciclismo. Estos hallazgos muestran la necesidad de abordar el desplazamiento activo como un fenómeno complejo y situado, que requiere intervenciones intersectoriales, políticas locales coherentes y estrategias educativas que promuevan la autonomía, la seguridad y el bienestar en el trayecto escolar. El estudio proporciona evidencia contextualizada para orientar futuras intervenciones y políticas públicas en contextos urbanos similares en América Latina.
Keywords: actividad física; salud pública; promoción de la salud; ciclismo; caminata.

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

Original article. Barriers and facilitators of active commuting to school: a qualitative study with families and students in south-central Chile. Vol. 12, n. º 2; p. 1-27, April 2026.
https://doi.org/10.17979/sportis.2026.12.2.12469

Introduction

In a scenario of global physical inactivity (Guthold et al., 2018), active commuting to school has emerged as an effective and economical strategy to promote physical activity at school age (stage), being considered a sustainable approach to reducing physical inactivity levels in this population (Denstel et al., 2015; Pardos-Mainer et al., 2021). Evidence in schoolchildren suggests that moving actively provides multiple benefits, including contributing 23% to 36% of daily physical activity (Martin et al., 2016), improving physical fitness (Chillón et al., 2013), reducing adiposity (Laverty et al., 2021), enhancing academic performance, and increasing happiness and overall well-being (Salvo et al., 2021). In addition, some studies have delved into the benefits of this type of commuting, emphasizing that the positive impact is not exclusive to the health of the individual, but transcends to the social environment, reducing the environmental impact by means of a sustainable means of commuting (Rojas-Rueda et al., 2016).

The problem arises when observing the low rates of active commuting among schoolchildren, a trend that has continued to decline in recent years (Pinillos-Patiño et al., 2021). Several studies have investigated the causes of this decline, focusing mainly on students' perceptions of the school environment (Merellano-Navarro et al., 2025a) and the barriers perceive towards this type of commuting (Aranda-Balboa et al., 2020; Ávila-García et al., 2023; Forman et al., 2008; González et al., 2020; Molina-García et al., 2016; Sáez-Padilla et al., 2021). Among the main barriers perceived by schoolchildren to active commuting are interpersonal factors, such as environmental perception, safety, connectivity, and accessibility (Aranda-Balboa et al., 2020; Forman et al., 2008). In addition, within this same dimension, factors such as the socioeconomic level of the nuclear family (González et al., 2020), traffic, climate, home-school distance and the built environment (neighborhood characteristics and proximity to school) (Villa-González et al., 2012). However, there are still few studies that delve into the barriers perceived by parents regarding the form of travel used by their children. This is relevant since parents play a key role in shaping their children's healthy habits, mainly during childhood (Molina et al., 2021) and adolescence (Su et al., 2022).

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

Original article. Barriers and facilitators of active commuting to school: a qualitative study with families and students in south-central Chile. Vol. 12, n. º 2; p. 1-27, April 2026.
https://doi.org/10.17979/sportis.2026.12.2.12469

A systematic review that compiled and analyzed global evidence on this topic indicates that the main barriers identified by parents to their children's active commuting are related to the built environment (neighborhood and school), road connectivity, home-school distance, road safety and student motivation (Aranda-Balboa et al., 2020). However, it is important to highlight that these types of barriers are strongly rooted in the context and vary between countries. In Latin America, findings suggest that these barriers are even more complex to address, being mainly related to environmental characteristics (urban density, distance and accessibility) and safety (Huertas-Delgado et al., 2017, 2018; Palma et al., 2020). This background is valuable as it provides an overview of what happens globally; however, considering the contextual nature of this phenomenon, it is essential to further explore parents' perceptions of their children's active commuting to school in specific settings.

The development of this type of study helps advance the design of strategies that effectively promote active movement in schoolchildren, since the support and accompaniment strategies that may arise will be adjusted to the characteristics and needs of that place. In this context, and from an ecological perspective of this problem, parents have a fundamental role in the development and promotion of physical activity (Su et al., 2022) and the type of displacement that their children have to and from school (Palma et al., 2020). Consequently, this study aimed to identify the barriers and facilitators perceived by parents and high school students related to the development of active commuting to school in a city in south-central Chile.

This study is relevant because there are few large-scale reviews that use qualitative methods and investigate how the school commuting environment influences the mode of active commuting to school (Morris et al., 2022) , so this type of methodology will deepen the perceptions of parents and students towards the development of active commuting to school, to provide more complete and integrated analysis in the context of a complex behavior as is the development of active travel is adolescent population (Buttazzoni et al., 2023). In addition, it provides contextualized evidence on the barriers and facilitators to active commuting to school in a little studied region, where in the field of physical activity, 7 out of 10 (66.2%) schoolchildren are inactive in the Maule Region

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons
Original article. Barriers and facilitators of active commuting to school: a qualitative study with families and students in south-central Chile. Vol. 12, n. º 2; p. 1-27, April 2026.
https://doi.org/10.17979/sportis.2026.12.2.12469

(MINDEP, 2025) which allows adapting future interventions to the local reality. Based on the above, the study aims to analyze the barriers and facilitators perceived by parents and their children for the development of active commuting to school in Chile.

Material and Methods

The present research is framed within an interpretive paradigm that, as Creswell and Creswell (2018) point out, allows the study of complex phenomena considering the context, culture and experience of the participating subjects (Creswell & Creswell, 2018). In turn, this study adopts a qualitative approach, with the purpose of detecting patterns or trends that contribute to a deeper understanding of the problem. This study is circumscribed to the first phase of a larger study, which seeks to determine the effect of the active commuting educational program based on the ecological model, in improving the physical and mental health of high school students. It should be noted that each of the procedures used in this study were reviewed and approved by the Scientific Ethics Committee of the Universidad Católica del Maule (CET N°27-2024).

Participants

The recruitment and selection process of participants was carried out in two stages. In the first stage, a group of parents or legal guardians was convened through non-probabilistic convenience sampling. Specifically, the inclusion criterion was to be an active representative of a secondary school student in an educational establishment in south-central Chile. In the second stage, and using the same type of sampling, we proceeded to search for and select high school students. In this case, the inclusion criterion was that the student should be enrolled in an educational establishment in south-central Chile. The final size of both samples was defined under the theoretical saturation criterion (Korstjens & Moser, 2018), that is, the recruitment of new participants was stopped when their account no longer offered new and relevant background for this study. Specifically, nine proxies participated, seven identified with the female gender and two with the male gender. The average age of the participants was 40 years old. Additionally, 17 students participated in three focus groups, consisting of seven, six, and four students,

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

respectively. Seven students identified as female and 10 as male, with a mean age of 17 years.

Data collection

Data collection involved two techniques, which were implemented in two phases consecutively. First, a semi-structured interview (Flick, 2015) was applied to the proxies. This technique was chosen because it offers a space for dialogue and trust that favors the expression of ideas by the participants and, it has a flexible character that adapts the conversation to the specific characteristics of their context and experience. In total, one of the authors of this work conducted nine individual interviews through the ZOOM platform. Each of these encounters lasted approximately 40 to 60 minutes. Second, three focus groups were conducted with five high school students each (Willemsen et al., 2023). This technique offers the possibility of inquiring into the understanding of the phenomenon studied in a space of dialogue and interaction, which favors participation and the expression of ideas; in turn, it also possesses a flexible character that adapts to the characteristics of the participants (Willemsen et al., 2023). A total of three focus groups were conducted through the ZOOM platform, two with six and one with five students. The duration of each focus group was approximately 60 minutes. In both cases, a script of questions was used to guide the conversation with three main themes: personal experience, barriers and facilitators related to active commuting to school. A digital recorder was used to record the audio. It is also important to mention that before starting the interview, each parent read and voluntarily signed an informed consent form. On the other hand, the students read and signed an assent.

Data analysis

The analysis of the data collected began immediately after the application of the first interview. This flexible and iterative procedure allows the detection of trends and guides the search for relevant background information for this study. Specifically, the first step was to transcribe each audio file verbatim into a Word document, separating each participant's intervention into individual paragraphs. In order to protect the

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

anonymity and confidentiality of the data, the following nomenclature was used to reference the participants' accounts: EA- 1: proxy interview one; EA-2 proxy interview two; etc.; or GF1E-1: focus group one student one; GF1E-2: focus group one student two; etc. Secondly, each of the files in Word format was imported into the NVivo-15 program. This computer tool developed specifically for the analysis of qualitative data optimizes, organizes and systematizes the information, which then facilitates its understanding. Specifically, the participants' accounts were subjected to a reflexive thematic analysis following the recommendations of Braun and Clarke (2021). This analysis technique allows the construction of thematic trends in this type of data and, in turn, requires the researchers to position themselves from a critical and reflective perspective that favors the codification and interpretation of the findings. To ensure the quality of this procedure, two of the authors of this paper independently read and coded the transcripts, identifying units of meaning that were relevant to this study. After this first approach to the data, the authors met to discuss the results and jointly construct the categories. This procedure broadens the interpretation of the results and mitigates the bias of an individualized analysis (Korstjens & Moser, 2018).

Results

From the analysis of the data obtained, two categories were identified: (1) barriers and (2) facilitators. Table 1 presents both categories along with their subcategories and a synthetic description of each. The content of each subcategory is then elaborated on using excerpts from the participants' narratives.

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

Original article. Barriers and facilitators of active commuting to school: a qualitative study with families and students in south-central Chile. Vol. 12, n. º 2; p. 1-27, April 2026.
https://doi.org/10.17979/sportis.2026.12.2.12469

Table 1. Matrix of categories and subcategories of proxies and students.

Category	Subcategory
1. Barriers	Environmental and everyday environment conditions. Infrastructure and urban design. Sociocultural factors. Economic factors. Institutional and regulatory factors. Social accompaniment. Time conditions.
2. Facilitators	Parental role. Road safety education. Cycling education.

Barriers - Environmental and everyday environment conditions

Weather conditions, poor lighting and inadequate schedules for walking or cycling are common barriers to active commuting to school. Both students and parents agree that these factors generate discomfort, insecurity and even risk on the usual routes to school. Weather conditions such as rain and cold were recurrently mentioned as limiting factors, since, as one student pointed out, "if you walk and it rains, you get all wet" (FGE1), which translates into physical discomfort and lack of motivation for active commuting. School schedules also affect active mobility, especially in winter, when outings take place at times of low visibility. One student points out that "when we go out it is already dark and prevents us from being able to do other activities" (FGE3), which reflects how the structure of school time conditions the possibility of taking advantage of outdoor spaces. This perception is shared by parents who note with concern that "in winter there are many neighborhoods. The infrastructure is not there for them to arrive comfortably and safely" (EA1), thus articulating the impact of the climate with the limitations of the physical environment.

Barriers - Infrastructure and urban design

The limitations of the urban infrastructure, especially the lack of bicycle paths, sidewalks in good condition and safe spaces for bicycle storage, constitute a structural barrier that affects the possibility of opting for active travel. This absence not only puts

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

those who walk or pedal at risk, but also discourages the use of non-motorized means in general in a more sustained manner over time. One student describes that "when it rains there is a dirt road... it fills with water and one has to take a gamble" (FGE3), referring to a common stretch of his school route. Although some sectors have bicycle paths, these do not connect with the schools or are in poor condition, as evidenced by another account: "The bicycle path goes all the way to Highway 5 South. From there it does not continue to here" (EA2). This disconnection reveals an urban planning that does not effectively articulate school spaces with an active commuting network. The lack of basic equipment, such as secure bike racks, is also perceived as an obstacle, although some students recognize that "at school they have a place to store bicycles" (FGE3), others express fear of theft or lack of protection, which shows that the presence of infrastructure does not always translate into confidence or effective use. As one student summarizes: "There are no bicycle lanes... it is difficult to travel by bicycle because the streets are horrible" (FGE1).

Barriers - Sociocultural factors

The culture of mobility is marked by family overprotection and the predominance of motorized transportation, which limit the possibility of students opting for active commuting, even when they are willing or interested in doing so. This phenomenon is expressed in daily decisions that reflect fears, ingrained habits and differentiated valuations of the perception of public space. For example, a student reports that "I would like to come by bicycle, but my mother is strict and tells me that something could happen to me" (FGE1), reflecting how parental fear has a direct impact on his autonomy. This attitude, while responding to legitimate concerns, tends to restrict the exploration of more active and healthy forms of mobility. Another proxy critically reflects on this pattern: "It is the parents who do not give the importance we should to active transportation" (EA9), recognizing that many times dependence on the automobile is unquestioningly reinforced, to the detriment of active commuting. The reproduction of family habits also influences the decisions of young people, a student points out "many parents are not used to walking, so neither are their children" (FGE3), illustrating how the culture of motorized transport

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

is transmitted within the family nucleus. This model is reinforced by routines focused on efficiency and protection, where, as a parent explains, "what we want is for them to get home as quickly as possible" (EA9), leaving aside the experience of the journey in terms of the speed of return.

Barriers - Economic factors

Access to active commuting to school is also conditioned by the availability of material resources. Although walking may appear to be a cost-free option, the accounts show that its viability depends on distance, time available and, in the case of bicycle use, on a series of associated expenses. The purchase of the vehicle, its maintenance and safety equipment represent concrete obstacles, especially in contexts of vulnerability. One student sums it up clearly: "Monetary access to buy a bicycle, because not everyone can afford one" (FGE2). Even those who express interest in using it, do not have access to it: "If they gave me one, I would like to come by bicycle" (FGE1). This situation does not go unnoticed among adults, who also recognize that "a bicycle is expensive and you need a suitable place to store it" (EA8), showing that even when basic infrastructure exists, the associated costs make it difficult to change habits. Likewise, the proxies mention that the clothing necessary for active commuting represents a considerable expense, especially in winter: "Buying waterproof clothing that keeps you warm is very expensive, as are shoes, which can be costly" (EA8). In this context, commuting decisions do not respond only to individual preferences, but to structural constraints that deepen inequalities in mobility conditions.

Barriers - Institutional and regulatory factors

The lack of systematic public policies, clear local regulations and support from educational institutions is perceived as a significant barrier to promoting active commuting. Parents in particular identify a gap between the official discourse on promoting healthy living and the concrete actions implemented in their territories.

One proxy raises the urgent need for more effective regulations: "There are no public policies that promote this effectively" (EA8). Another participant argues that

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

progress has been partial and not widespread: "Not all the city is set for it... it has been updated, but not massively" (EA5). Added to this is the scarce presence of road safety education in schools, which prevents the formation of competencies for safe travel, as indicated by a participant: "More citizen education is needed, more rules for all road users" (EA2).

Facilitators - Social accompaniment

Accompaniment on school trips, whether by family members or other students, is a key facilitator for active travel. This company not only increases the feeling of security, but also transforms the act of walking or cycling into a more pleasant and socially meaningful experience. Stories highlight that sharing the journey with others reduces fears and brings an affective dimension to commuting. One parent says that her daughters have developed the habit of walking thanks to the mutual company: "They walk to school four times a day, since they have classes in the morning and activities in the afternoon. They usually go together, or sometimes in groups of two" (EA8). This type of family and community organization makes it possible to sustain active commuting to school practices even in difficult contexts. Another parent emphasizes the relational value of these trips: "It is a very pleasant experience when you walk with someone, talk, listen to music" (EA6), highlighting that active mobility can also be a space for meeting, enjoyment and socialization.

Facilitators - Time conditions

School schedules, especially when they involve daytime departures or longer commuting times, are recognized as important facilitators of active commuting. Natural light and less traffic congestion favor safer and more comfortable journeys, while the time available facilitates better planning. A female proxy explains that in certain temporary conditions it is more feasible to walk: "If it is a nice day, maybe on Friday they go out at noon... with a group of classmates who live nearby they can walk and they can do it" (EA9). This situation shows that the possibility of moving around actively does not depend only on the will, but also on the schedule. A student also adds in this regard "I

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

could leave earlier if I go by bike or on foot, because it is still possible to get organized" (FGE3). Thus, planned schedules not only determine availability, but also perceived safety, especially when it comes to avoiding walking in the dark.

Facilitators - Parental role

When the role of families operates as a promoter of active commuting to school, it becomes a determining factor for habit change. The initial accompaniment, the domestic organization, the example and the trust given to the children are elements that contribute to the installation of healthier and more autonomous mobility practices. Some parents recognize the value of this formative accompaniment, stating that "The family is fundamental because it inculcates how the children transport themselves... having a bicycle at home is already an incentive to use it" (EA7). Others emphasize the value of developing skills to face environmental situations: "We always explain to them to walk with their peers, to avoid places alone... these are things that we teach them at home" (EA3). In this sense, the parental role is not limited to physical protection, but also acts as a pedagogical mediator in the process of building autonomy. From the students, it is also evident that the family disposition can act as an impulse or a brake, a participant says "I would like my parents to change their minds, because I would like to come here by bike" (FGE1), revealing that the desire for greater autonomy sometimes encounters resistance in the protective logic of the home. In this context, parental support becomes fundamental to move from individual desire to collective action.

Facilitators - Road safety education

Road safety education, understood as the set of knowledge, skills and attitudes that allow safe and conscious movement in public space, was widely valued as a facilitator of active travel. Both parents and students recognize that having the tools to identify risks, find one's way around the city and respect road rules is essential for moving around with autonomy. A proxy states this need from a formative perspective: "You have to teach them how to move around; at the beginning you have to accompany them and then teach them how to resolve these situations. But many believe that the way to solve it is to protect

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

them, instead of giving them tools" (EA8). This approach proposes that the development of autonomy is not achieved by avoiding risk, but by facing it with preparation and planning. Another participant states "It is necessary to start changing this culture and stop depending so much on the vehicle" (EA8), reinforcing the idea that road safety education should also contribute to transforming social assumptions about mobility. This education not only has individual effects, but also impacts the collective environment, promoting more respectful relationships between pedestrians, cyclists and motorists. Therefore, several parents agree that road safety education should be addressed systematically from the school system.

Facilitators - Cycling education

Specific training in the use of bicycles, ranging from technical and mechanical aspects to safety and personal care, is recognized as a fundamental facilitator to expand the use of this means of commuting among students. This education not only promotes the use of bicycles, but also provides tools to face the road environment in a safer and more confident way. A proxy reaffirms this by stating "It would be useful to educate about various aspects, such as choosing the right bicycle, its maintenance and the great benefits it offers... such as using lights, not wearing all black, using a reflective vest, helmet and sunscreen" (EA8). This vision reveals a broad understanding of what active mobility implies, it is not enough to have a bicycle, it is necessary to know how to use it in real and diverse conditions. Other participants even propose advancing in regulatory aspects and validation of knowledge "That it be something safer... like a little more active control of cyclists. Maybe there should be more regulations" (EA5). These visions show that cycling education is not only a matter of technical competence, but also of road citizenship and co-responsibility in the use of public space.

Discussion

The aim of the study was to analyze the barriers and facilitators perceived by parents and their children for the development of active commuting to school in a city in south-central Chile. The results show that the main perceived barriers are environmental

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

conditions and daily surroundings, infrastructure and urban design, sociocultural, economic and institutional and regulatory factors. On the other hand, regarding facilitators, parents and children point out that social support, time conditions, parental role, road culture and training in active mobility contribute to active commuting.

The environmental conditions and the daily surroundings emerge as the first barrier on the part of parents and their children, with extreme conditions, such as the cold and rain in winter and the heat of summer, being an impediment pointed out by parents and their children in relation to the option of choosing active commuting. According to parents and their children, this barrier acts as an agent of demotivation and loss of interest due to weather conditions, which leads them to opt for motorized travel. This result agrees with a recent study that collects the perception of chileans students on the option of walking or cycling to school, identifying the weather as a barrier towards active travel to and from school (Merellano-Navarro et al., en prensa). Along these lines, another author points out that adverse weather conditions contribute to the population performing less physical activity (Blanchette et al., 2021), affecting the maintenance of healthy habits. This coincidence can be explained by similar contextual and structural factors, as both studies were conducted in south-central Chile, where extreme weather conditions and inadequate infrastructure reinforce negative perceptions of active commuting. In contrast, in European or high-income contexts, adverse weather conditions do not significantly reduce active commuting, largely due to a well-established culture of sustainable and active mobility supported by public policies and social norms (Ek et al., 2021).

Another barrier perceived by parents and their children is the quality of the infrastructure and the general urban design of the city, being an impediment not only because of its absence, but also because of the risk generated by its use through active commuting. In addition, they point out as a difficulty the poor connection of the existing infrastructure, emphasizing that urban design should consider accessibility, quality and connection of the infrastructure to promote this type of commuting. These results coincide with studies that point out that in low and middle-income countries the accessibility of infrastructure for walking or cycling is lower (Herrador-Colmenero et al., 2014; Oliveira et al., 2020), which, in Chile, translates to few km2 of infrastructure compared to

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

countries with high economic development (Vega et al., 2024). Also, this barrier is mentioned in a recent study that analyzes the perception of the environment in the type of commuting to school, considering that accessibility, safety, aesthetics and infrastructure connection are relevant elements, being predictor variables of the type of commuting of schoolchildren (Galán et al., 2024; Merellano-Navarro et al., 2025a). This barrier can be explained by contextual and socioeconomic factors, since urban development in Chile and in many low- and middle-income countries has historically prioritized motorized transport, resulting in fragmented cities with limited investment in pedestrian and cycling infrastructure. This structural inequality disproportionately affects middle- and low-income families, who often live farther from schools and have fewer safe routes for active commuting (Ferrari et al., 2021; Merellano-Navarro et al., 2025a).

A barrier that emerges between parents and their children is the sociocultural factor, which is marked by the sense of overprotection by parents towards the use of active commuting, limiting the possibilities for adolescents to choose their means of commuting, encouraging a fast and safe means of transportation. In fact, schoolchildren show this discordant relationship, provoking arguments with their parents, who, faced with the feeling of insecurity, opt for a motorized option. A study conducted in Chile indicates that parents' negative perception of traffic is associated with lower rates of active commuting in adolescents (Palma et al., 2020).

The involvement of parents in their children's education in Latin American countries is high (Gubbins et al., 2024), it is even noted that the actions of families influence the academic performance of children (Razeto, 2016), which is positive, however, limiting the possibilities of acquiring healthy habits in their children may be a consequence (Fernández-Moyano et al., 2013; Zhang et al., 2023). This situation is a response by parents to the barriers described above, such as poor infrastructure, the climate and, above all, a feeling of insecurity. (Galán et al., 2024; Giles-Corti et al., 2010; Rodríguez López, 2017). A Chilean study has analyzed the perception of fear and they point out that there is an association in citizen participation and the use of public space (Reyes, 2021), a result that is confirmed by a work that analyzes the perception of teachers

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

towards the type of commuting performed by students (Merellano-Navarro et al., en prensa).

Another barrier pointed out by parents and their children is the economic factor, mainly associated with the lack of implements that allow bicycle travel and clothing that protects the student for walking in adverse weather conditions. This barrier has been previously studied, noting that the costs and accessibility of implements discourage a commuting option other than motorized (Palma-Leal et al., 2019). Finally, as a barrier, institutional and regulatory factors are identified, which refer to the lack of public policies that guide and promote this type of commuting, which, it has been widely studied, that a country that encourages active lifestyle habits, through a safe road design, positively impacts the perception and levels of physical activity of the population (Calahorro, 2017; de Camargo et al., 2020).

Regarding facilitators, the first category that emerges from the accounts of parents and their children is the social accompaniment offered by active commuting, which not only increases the perception of safety, but also, offers a socially positive experience. In this context, the benefits of active commuting transcend physical health, and favor happiness and well-being in adolescence (Bonet et al., 2017; Holder et al., 2009; Ruiz-Ariza et al., 2015). This is relevant, considering that doing physical activity with friends, is a factor that positively influences the maintenance of healthy habits (Pezoa-Fuentes et al., 2025), so moving actively with friends, is a positive experience towards their development. This finding is particularly relevant in Latin American contexts, where social relationships and collective experiences play a central role in adolescents' daily lives, reinforcing enjoyment and adherence to active behaviors even in the presence of environmental or structural barriers (Fridman et al., 2021). The second facilitator mentions the time conditions and from the account of parents and their children is related to the conditions offered by the change of weather, offering better conditions for walking or cycling, with more daylight hours and perceiving a more comfortable and safer commuting. This result agrees with a study that collects the perception of teachers towards the students' commuting mode, where climate is pointed out as a barrier and a facilitator (Merellano-Navarro et al., 2025b). Another study confirms this facilitator,

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

pointing out that moderate climatic conditions, facilitate the option of walking (Herazo-Beltrán et al., 2024).

Along the same lines, the parental role (as a facilitator) is associated with the barrier sociocultural factors, where the parent/child relationship is crucial in the adoption of a type of movement that provides health benefits for schoolchildren. In this sense, the accounts describe that a parental role that promotes health in every sense promotes the development of healthy, safe and autonomous practices by their children (Otero et al., 2020; Rodríguez López, 2017). This relationship of trust is sustained by the last two facilitators that emerge in this study, which are related to road safety education and active mobility training. Educating the legal regulations of the pedestrian, driver and cyclist, fosters autonomous and safe skills, and reinforces positive attitudes towards active and sustainable mobility on the part of the schoolchild and parents (Gálvez-Fernández et al., 2021; Gálvez-Fernández & Herrador-Olmenero, 2018; MINSAL, 2024).

Practical applications

This study provides key evidence to guide interventions and public policies that promote active commuting to school in Latin American urban contexts. Its findings identify critical barriers that must be addressed by local authorities and support the incorporation of educational programs on active commuting. In addition, they highlight the importance of including the perspectives of families and students in the design of more effective and contextualized intersectoral strategies.

Conclusions

In conclusion, this research provides from a qualitative perspective, a comprehensive look at the barriers and facilitators perceived by the participants to actively commute, specifically, environmental conditions and everyday surroundings, infrastructure and urban design, socio- cultural, economic and institutional and regulatory factors, constitute a barrier when opting for this type of commuting between home and school. On the other hand, they emphasize that social support, timetable conditions, parental role, road culture and training in active mobility, constitute facilitators that

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

reinforce and encourage the incorporation of this strategy in the framework of their daily experience. For an adequate interpretation of these findings, it is important to point out that the number of participants and the type of sampling used prevent their statistical generalization; therefore, it is recommended to seek their transferability based on their similarity with other similar contexts. Moreover, as a qualitative study, the findings are influenced by the particularities of the context and the subjective interpretations of the participants, reflecting the cross-sectional nature of the design.

For future research, it is suggested in methodological terms to develop studies from a mixed approach, in this way, it is possible to integrate both the perceptions of those involved and the detection of patterns or variables that allow determining and generalizing the magnitude of the problems they face to move actively, or the benefits and disadvantages it presents. In turn, the development of longitudinal studies would allow understanding the changes associated with climate, for example, since it would be possible to evaluate the different periods and/or seasons experienced within a year. Finally, this study provides a basis for discussing the implementation of strategies that address the problem from an ecological and systemic perspective, orients the design of educational awareness campaigns or programs, and demonstrates the need to look further into the search for solutions that guarantee the promotion of physical activity, and in particular, the possibility of schoolchildren being able to move around actively and safely on the school-home route.

References

Aranda-Balboa, M. J., Huertas-Delgado, F. J., Herrador-Colmenero, M., Cardon, G., & Chillón, P. (2020). Parental barriers to active transport to school: a systematic review. *International Journal of Public Health, 65*(1), 87–98. https://doi.org/10.1007/s00038-019-01313-1

Ávila-García, M., Ruiz-Alarcón, A., Medel-Carbonell, L. M., & Huertas-Delgado, F. J. (2023). Barreras del desplazamiento activo y propuesta para educación física en adolescentes. *Hacia Nuevos Estándares Educativos Para Una Educación de Calidad.,* July, 201–208. https://doi.org/10.2307/jj.8500807.26

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

Blanchette, S., Larouche, R., Tremblay, M. S., Faulkner, G., Riazi, N. A., & Trudeau, F. (2021). Influence of weather conditions on children's school travel mode and physical activity in 3 diverse regions of Canada. *Applied Physiology, Nutrition, and Metabolism, 46*(6), 552–560. https://doi.org/10.1139/apnm-2020-0277

Bonet, J., Parrado, E., & Capdevila, L. (2017). Efectos agudos del ejercicio físico sobre el estado de ánimo y la HRV. *Revista Internacional de Medicina y Ciencias de La Actividad Fisica y Del Deporte, 17*(65), 85–100. https://doi.org/10.15366/rimcafd2017.65.006

Braun, V., & Clarke, V. (2021). Thematic analysis: A practical guide. *European Journal of Psychotherapy and Counselling, 26*(3-4), 1–4. https://doi.org/10.1080/13642537.2024.2391666

Buttazzoni, A., Nelson Ferguson, K., & Gilliland, J. (2023). Barriers to and facilitators of active travel from the youth perspective: A qualitative meta-synthesis. *SSM - Population Health, 22*(February), 101369. https://doi.org/10.1016/j.ssmph.2023.101369

Calahorro, F. (2017). Patterns, Division and Guidelines of Physical Activity: The importance of physical activity at school on maximum oxygen consumption. / Patrons, fraccionament i directrius de l'activitat física: la rellevància de l'activitat física escolar sobre el consum. *Apunts: Educació Física i Esports,* 128, 149. https://shorturl.at/aLicF

Chillón, P., Martínez-Gómez, D., Ortega, F. B., Pérez-López, I. J., Díaz, L. E., Veses, A. M., Veiga, O. L., Marcos, A., & Delgado-Fernández, M. (2013). Six-year trend in active commuting to school in Spanish adolescents: The AVENA and AFINOS studies. *International Journal of Behavioral Medicine, 20*(4), 529–537. https://doi.org/10.1007/s12529-012-9267-9

Creswell., J. W., & Creswell, J. D. (2018). *Research defign: Qualitative, quantitative, and mixed methods approaches* (5° ed). SAGE Publications.

de Camargo, E. M., Santos, M. P. M., Ribeiro, A. G. P., Mota, J., & de Campos, W. (2020). Interaction of sociodemographic factors in the association between

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons

psychosocial factors and active commuting to school. *Cadernos de Saude Publica, 36*(5). https://doi.org/10.1590/0102-311X00102719

Denstel, K., Broyles, S.., Larouche, R., Sarmiento, O. L., Barreira, T. V, Chaput, J.-P., Church, T. S., Fogelholm, M., Hu, G., Kuriyan, R., Kurpad, A., Lambert, E. V, Maher, C., Maia, J., Matsudo, V., Olds, T., Onywera, V., Standage, M., Tremblay, M. S., … Katzmarzyk, P. T. (2015). Active school transport and weekday physical activity in 9–11-year-old children from 12 countries. *International Journal of Obesity Supplements, 5*(S2), 100–106. https://doi.org/10.1038/ijosup.2015.26

Ek, K., Wårell, L., & Andersson, L. (2021). Motives for walking and cycling when commuting - differences in local contexts and attitudes. *European Transport Research Review, 13*(1), 46. https://doi.org/10.1186/s12544-021-00502-5

Fernández-Moyano, J. F., Ruiz Tendero, G., Martínez Ballesteros, A., Rivas Galán, S., & Casado Manzano, R. (2013). La Influencia Parental en la Motivación y participación de los alumnos en actividades Físico- Deportivas en edad escolar. *Revista Digital de Educación Física, 4*(20), 67–78. http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:No+Title#0

Flick, U. (2015). *El diseño de investigación cualitativa*. Ediciones Morata.

Ferrari, G., Guzmán-Habinger, J., Chávez, J. L., Werneck, A. O., Silva, D. R., Kovalskys, I., Gómez, G., Rigotti, A., Cortés, L. Y., Yépez García, M. C., Pareja, R. G., Herrera-Cuenca, M., Drenowatz, C., Cristi-Montero, C., Marques, A., Peralta, M., Leme, A. C. B., & Fisberg, M. (2021). Sociodemographic inequities and active transportation in adults from Latin America: an eight-country observational study. *International Journal for Equity in Health, 20*(1), 190. https://doi.org/10.1186/s12939-021-01524-0

Forman, H., Kerr, J., Norman, G. J., Saelens, B. E., Durant, N. H., Harris, S. K., & Sallis, J. F. (2008). Reliability and validity of destination-specific barriers to walking and cycling for youth. *Preventive Medicine, 46*(4), 311–316. https://doi.org/10.1016/j.ypmed.2007.12.006

Fridman, D., Koellner, T., & Kissinger, M. (2021). Exploring global interregional food system's sustainability using the functional regions typology. *Global*

Sportis Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons

Environmental Change, 68, 102276. https://doi.org/10.1016/j.gloenvcha.2021.102276

Galán, A., Ruiz-Apilánez, B., & Macdonald, E. (2024). Built environment and active transportation to school in the west: latest evidence and research methods. *Discover Cities, 1(*1). https://doi.org/10.1007/s44327-024-00003-9

Gálvez-Fernández, P., & Herrador-olmenero, M. (2018). "Al cole sobre ruedas": Un proyecto de innovación docente. *Habilidad Motriz: Revista de Ciencias de La Actividad Física y Del Deporte, 50,* 33–42. https://doi.org/10.47197/retos.v55.103584

Gálvez-Fernández, P., Saucedo-Araujo, R. G., Campos-Garzón, P., Aranda-Balboa, M. J., Molina-Soberanes, D., Segura-Díaz, J. M., Herrador-Colmenero, M., Huertas-Delgado, F. J., Villa-González, E., Barranco-Ruiz, Y., & Chillón, P. (2021). Active commuting to school and associated health indicators: Evaluation protocol of the PACO study «Cycle and Walk to School» and its implementation in secondary school. *Retos, 2041*(39), 649–657. https://doi.org/10.47197/retos.v0i39.80906

Giles-Corti, B., Foster, S., Shilton, T., & Falconer, R. (2010). The co-benefits for health of investing in active transportation. *New South Wales Public Health Bulletin, 21*(6), 122. https://doi.org/10.1071/NB10027

González, S. A., Sarmiento, O. L., Lemoine, P. D., Larouche, R., Meisel, J. D., Tremblay, M. S., Naranjo, M., Broyles, S. T., Fogelholm, M., Holguin, G. A., Lambert, E. V., & Katzmarzyk, P. T. (2020). Active school transport among children from Canada, Colombia, Finland, South Africa, and the United States: A tale of two journeys. *International Journal of Environmental Research and Public Health, 17*(11). https://doi.org/10.3390/ijerph17113847

Gubbins, V., Coutrim, R., & Flores, P. (2024). Participación parental en educación básica latinoamericana: revisión sistemática. *Propósitos y Representaciones, 12*(March). https://doi.org/10.20511/pyr2024.v12.2000

Guthold, R., Stevens, G. A., Riley, L. M., & Bull, F. C. (2018). Worldwide trends in insufficient physical activity from 2001 to 2016: a pooled analysis of 358

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons

population-based surveys with 1·9 million participants. *The Lancet Global Health, 6*(10), e1077–e1086. https://doi.org/10.1016/S2214-109X(18)30357-7

Herazo-Beltrán, Y., Sánchez-Guette, L., González, S. A., Pahuana-Escobar, M., Berdejo-Sandoval, V., Álvarez-González, J., & Mestre-Morón, B. (2024). Environmental and social barriers to active school transport in the Colombian Caribbean region. *Revista Facultad de Medicina, 72*(1), 1–12. https://doi.org/10.15446/revfacmed.v72n1.104638

Herrador-Colmenero, M., Pérez-García, M., Ruiz, J. R., & Chillón, P. (2014). Assessing modes frequency of commuting to school in youngsters: A systematic review. *Pediatric Exercise Science, 26*(3), 291–341. https://doi.org/10.1123/pes.2013-0120

Holder, M. D., Coleman, B., & Sehn, Z. L. (2009). The Contribution of Active and Passive Leisure to Children's Well-being. *Journal of Health Psychology, 14*(3), 378–386. https://doi.org/10.1177/1359105308101676

Huertas-Delgado, F. J., Chillón, P., Barranco-Ruiz, Y., Herrador-Colmenero, M., Rodríguez-Rodríguez, F., & Villa-González, E. (2017). Which Are the Main Parental Barriers to Active Commuting to School in Ecuador? *Journal of Transport & Health, 5*(March 2019), S75–S76. https://doi.org/10.1016/j.jth.2017.05.225

Huertas-Delgado, F. J., Chillón, P., Barranco-Ruiz, Y., Herrador-Colmenero, M., Rodríguez-Rodríguez, F., & Villa-González, E. (2018). Parental perceived barriers to active commuting to school in Ecuadorian youth. *Journal of Transport & Health, 10*, 290–296. https://doi.org/10.1016/j.jth.2018.05.102

Korstjens, I., & Moser, A. (2018). Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. *European Journal of General Practice, 24*(1), 120–124. https://doi.org/10.1080/13814788.2017.1375092

Laverty, A. A., Hone, T., Goodman, A., Kelly, Y., & Millett, C. (2021). Associations of active travel with adiposity among children and socioeconomic differentials: a longitudinal study. *BMJ Open, 11*(1), 1–9. https://doi.org/10.1136/bmjopen-2019-036041

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons

Martin, A., Boyle, J., Corlett, F., Kelly, P., & Reilly, J. J. (2016). Contribution of Walking to School to Individual and Population Moderate-Vigorous Intensity Physical Activity: Systematic Review and Meta-Analysis. *Pediatric Exercise Science, 28*(3), 353–363. https://doi.org/10.1123/PES.2015-0207

Merellano-Navarro, E., Alcaino-Pedreros, J., Concha-López, O., Herrera-Pavez, C., Torres-Pérez, C., & Godoy-Cumillaf, A. (2025a). Perception of the Environment for Active Transportation in High School Students in Chile. *Cultura, Ciencia y Deporte, 20*(63). https://doi.org/10.12800/ccd.v20i63.2215

Merellano-Navarro, E., Morán-Toloza, A., Araya-Retamal, A., Herrera-Cea, O., Herrera-González, I., Martínez-Lara, B., & Aguilar-Valdés, M. (en prensa). Barreras y facilitadores percibidos por docentes de secundaria para el transporte activo en Chile. Journal of Sport an Health Research.

MINDEP. (2025). *Encuesta Nacional de Hábitos de Actividad Física y Deporte. Población de 5 años y más.* In Ministerio del Deporte, Chile. https://page-mindep.s3.amazonaws.com/sigi/files/18055_ppt_encuesta_nacional_actividad_f_sica_y_deporte_2024.pdf

Molina-García, J., Queralt, A., Estevan, I., Álvarez, O., & Castillo, I. (2016). Perceived barriers to active commuting to school: reliability and validity of a scale. *Gaceta Sanitaria, 30*(6), 426–431. https://doi.org/10.1016/j.gaceta.2016.05.006

Molina, P., Gálvez, P., Stecher, M. J., Vizcarra, M., Coloma, M. J., & Schwingel, A. (2021). Family influences on maternal feeding practices of preschool children from vulnerable families in the Metropolitan Region of Chile. *Atención Primaria, 53*(9). https://doi.org/10.1016/j.aprim.2021.102122

Morris, S., Lawlor, E. R., Foley, L., Summerbell, C., Panter, J., Adams, J., Jago, R., & Pollard, T. M. (2022). Children's experiences of the journey between home and school: A qualitative synthesis using meta-ethnography. *Health and Place, 76* (September 2021), 102819. https://doi.org/10.1016/j.healthplace.2022.102819

Oliveira, A., Lopes, L., Abreu, S., Moreira, C., Silva, P., Agostinis-Sobrinho, C., Oliveira-Santos, J., Mota, J., & Santos, R. (2020). Environmental perceptions and its associations with physical fitness and body composition in adolescents:

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
Creative Commons

Longitudinal results from the LabMed Physical Activity Study. International *Journal of Adolescent Medicine and Health, 32*(5), 1–10. https://doi.org/10.1515/ijamh-2017-0205

Otero, J., Cohen, D. D., Delgado, D. M., Camacho, P. A., Amador, M., Rueda-Quijano, S., & López-Jaramillo, P. (2020). Facilitadores y barreras percibidos en la práctica de la actividad física en adolescentes escolarizados en Piedecuesta (Santander), en 2016: análisis cualitativo. *Revista Facultad Nacional de Salud Pública, 38*(2), 1–10. https://doi.org/10.17533/udea.rfnsp.e337834

Palma-Leal, X. A., Escobar Gómez, D., Chillón, P., & Rodríguez-Rodríguez, F. (2019). Fiabilidad de un cuestionario de modos, tiempo y distancia de desplazamiento en estudiantes universitarios (Reliability of a questionnaire on commuting modes, time, and distance in university students). *Retos, 37*, 210–214. https://doi.org/10.47197/retos.v37i37.71639

Palma, X., Chillón, P., Rodríguez-Rodríguez, F., Barranco-Ruiz, Y., & Huertas-Delgado, F. J. (2020). Perceived parental barriers towards active commuting to school in Chilean children and adolescents of Valparaíso. *International Journal of Sustainable Transportation, 14*(7), 525–532. https://doi.org/10.1080/15568318.2019.1578840

Pardos-Mainer, E., Gou-Forcada, B., Sagarra-Romero, L., Morales, S. C., & Concepción, R. R. F. (2021). Obesity, school intervention, physical activity and healthy lifestyles in Spanish children. *Revista Cubana de Salud Publica, 47*(2), 1–23. https://revsaludpublica.sld.cu/index.php/spu/article/view/1096

Pezoa-Fuentes, P., Contreras-Gutierrez, B., Godoy-Valenzuela, L., Palma-Morales, C., & Merellano-Navarro, E. (2025). Influencias personales y sociales en la práctica de actividad física escolares de secundaria: el rol del género y edad. *E-Balonmano Com Journal Sports Science, 21*(2), 253–264. https://doi.org/10.17398/1885-7019.21.253

Pinillos-Patiño, Y., Herazo-Beltrán, Y., Tocora-Andrade, R., Aramendiz-Mejía, J., Botello-Montero, Y., Vilardy-Armenta, J., & Bravo-Córdoba, R. (2021). Transporte activo: distancia entre el hogar y la escuela (Active transportation:

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

distance between home and school). *Retos, 44,* 364–369. https://doi.org/10.47197/retos.v44i0.90499

Razeto, A. (2016). El Involucramiento de las familias en la educación de los niños. Cuatro reflexiones para fortalecer la relación entre familias y escuelas. *Páginas de Educación, 9*(2), 190–216. https://doi.org/10.22235/pe.v9i2.1298

Reyes, A. L. (2021). Urban insecurity, citizen participation, and neighboring care: The quest for protection in neighborhoods. *Revista INVI, 36*(102), 302–327. https://doi.org/10.4067/S0718-83582021000200302

Rodríguez López, C. (2017). *Patrones y determinantes del desplazamiento activo al centro escolar en niños y adolescentes españoles* [Programa Oficial de Doctorado en: Biomedicina]. In Universidad de Granada. Departamento de Educación Física y Deportiva (Vol. 11, Issue 1). https://shorturl.at/WYQxJ

Rojas-Rueda, D., De Nazelle, A., Andersen, Z. J., Braun-Fahrländer, C., Bruha, J., Bruhova-Foltynova, H., Desqueyroux, H., Praznoczy, C., Ragettli, M. S., Tainio, M., & Nieuwenhuijsen, M. J. (2016). Health impacts of active transportation in Europe. *PLoS ONE, 11*(3), 1–14. https://doi.org/10.1371/journal.pone.0149990

Ruiz-Ariza, A., de la Torre-Cruz, M. J., Redecillas-Peiró, M. T., & Martínez-López, E. J. (2015). Influencia del desplazamiento activo sobre la felicidad, el bienestar, la angustia psicológica y la imagen corporal en adolescentes. *Gaceta Sanitaria, 29*(6), 454–457. https://doi.org/10.1016/j.gaceta.2015.06.002

Sáez Padilla, J., Cantonero Cobos, J. M., Moreno Sánchez, E., Molina López, J., & Tornero Quiñones, I. (2021). Beneficios Beneficios y barreras del desplazamiento activo hacia el centro escolar: una revisión sistemática (Benefits and barriers of active commuting to the school center: a systematic review). *Retos, 43*, 572–578. https://doi.org/10.47197/retos.v43i0.89075

Salvo, D., Garcia, L., Reis, R. S., Stankov, I., Goel, R., Schipperijn, J., Hallal, P. C., Ding, D., & Pratt, M. (2021). Physical activity promotion and the United Nations sustainable development goals: Building synergies to maximize impact. *Journal of Physical Activity and Health, 18*(10), 1163–1180. https://doi.org/10.1123/jpah.2021-0413

Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity
Published by: Campus Educa Sportis. Collaborator: University of A Coruña
A Coruña. Spain
E-mail: v.arufe@udc.es Web: www.sportisjournal.com
ISSN-e 2386-8333
OPEN ACCESS Creative Commons

Su, D. L. Y., Tang, T. C. W., Chung, J. S. K., Lee, A. S. Y., Capio, C. M., & Chan, D. K. C. (2022). Parental Influence on Child and Adolescent Physical Activity Level: A Meta-Analysis. *International Journal of Environmental Research and Public Health, 19*(24). https://doi.org/10.3390/ijerph192416861

Vega, R., Greene, M., & Ortúzar, J. de D. (2024). Assessing the impact of cycling infrastructure: A non-linear hedonic model for Santiago de Chile. *Travel Behaviour and Society, 34*(September 2023), 100674. https://doi.org/10.1016/j.tbs.2023.100674

Villa-González, E., Rodríguez-López, C., Huertas Delgado, J., Tercedor, P., Ruiz, J., & Chillón, P. (2012). Factores personales y ambientales asociados con el desplazamiento activo al colegio de los escolares españoles. *Revista de Psicología Del Deporte, 21*(2). https://www.redalyc.org/pdf/2351/235126897014.pdf

Willemsen, R. F., Aardoom, J. J., Chavannes, N. H., & Versluis, A. (2023). Online synchronous focus group interviews: Practical considerations. *Qualitative Research, 23*(6), 1810–1820. https://doi.org/10.1177/14687941221110161

Zhang, J., Wu, Z., Tao, H., Chen, M., Yu, M., Zhou, L., Sun, M., Lv, D., Cui, G., Yi, Q., Tang, H., An, C., Liu, Z., Huang, X., & Long, Y. (2023). Profile and mental health characterization of childhood overprotection/overcontrol experiences among Chinese university students: a nationwide survey. *Frontiers in Psychiatry, 14*(October), 1–11. https://doi.org/10.3389/fpsyt.2023.123825