



## Healthy Development and Neighborhood, in Adolescents of the city of Durango

Sandra Yesenia Salas-Luna<sup>1</sup>, Jaime Salvador-Moysén<sup>2\*</sup>, Edgar Felipe Lares-Bayona<sup>2</sup>, Yolanda Martínez-López<sup>2</sup>

<sup>1</sup>Emergency Laboratory, General Hospital "Santiago Ramón y Cajal" Institute of Social Security for State Workers, Durango, Mexico

<sup>2</sup>Academic Group of Public Health and Epidemiology, Institute of Scientific Research, Universidad Juárez del Estado de Durango, México

**\*Corresponding Author:** Jaime Salvador-Moysén, Academic Group of Public Health and Epidemiology, Institute of Scientific Research, Universidad Juárez del Estado de Durango, México.

**DOI:** 10.31080/ASWH.2023.05.0499

**Received:** March 17, 2023

**Published:** April 19, 2023

© All rights are reserved by **Jaime Salvador-Moysén, et al.**

### Abstract

**Objective:** To know the condition of Healthy Development in its different domains, of a group of adolescents of both genders, from 12 to 16 years of age, who attend an upper secondary educational institution in a socioeconomically disadvantaged context in the city of Durango. Mexico.

**Material and Methods:** The design of the study was descriptive, observational, cross-sectional. The study instruments used were: a sociodemographic data questionnaire, a scale to assess the perception of the Neighborhood and the Domains of Healthy Development construct. Study Group: It was made up of 193 adolescents between the ages of 12 and 16, of both genders who attended an upper secondary educational institution in the city of Durango, Mexico.

**Results:** The total number of participants said to live with relatives and more than 70% with their parents and brothers. It was observed that the perception of the conditions of their Neighborhood were satisfactory, with a positive social interaction characterized by the psychosocial support of the members of the environment, the use of free time and the clear sense of roots to their social context. With reference to the use of free time, more than 95% employ it with their family and with friends in different contexts: the street, sports centers and youth groups. The scores obtained in the different domains of the construct of healthy development, (DOHEDE.) ranged between 11.16 and 12.98 of a maximum possible of 15, with the exception of the physiological domain or self-regulation that although it showed a bit minor values were also satisfactory.

**Conclusions:** The values obtained through the application of the construct which measures the Domains of Healthy Development, showed satisfactory and uniform results in practically all the domains evaluated and in both sexes. It is important to highlight the favorable conditions of the family context of all the participants and the existing social capital in their neighborhood.

**Keywords:** Adolescent Health; Public Health, Research; Social Environment; Resilience; Social Capital

### Introduction

Adolescence is defined as the period between the ages of 10 and 19. In each of these stages there are physiological changes, structural, psychological and adaptation to cultural and/or social

changes [1]. The period of adolescence is a fundamental stage of the life trajectory of the human being, considering that during this period, the characteristics of the biopsychosocial growth and development processes of young people increase their vulnerability

to different situations of the environmental and psychosocial context of which they are a part. It has been documented that during adolescence, a series of disorders and behaviors can begin that transcend this period and that translate into an increase in morbidity and mortality in adulthood; As an example of these behaviors acquired early, smoking, alcoholism and drug use can be cited, likewise psychological disorders such as depression represent a significant burden of disease in adolescence with repercussions in adulthood [2]. It has also been documented that the establishment of friendly bonds during adolescence favors self-confidence and socialization of young people, which translates into a better emotional condition and a decrease in the occurrence of depressive problems at this stage and in adulthood [3]. The above data underline the need to address and understand the processes of the environmental and psychosocial context that favor the healthy development of adolescents, in such a way that interventions can be designed to promote said development. An integrative conceptual model for the healthy development of adolescents has been proposed [4]. This model enables research on risk, resilience and positive youth development to provide useful information from different perspectives. It points out eight domains of development.

- **Social:** Which privileges aspects related to the integration of adolescents with their community environment,
- **Emotional:** In which affective skills and self-efficacy regulation stand out, which refers to the adolescent's confidence in their own abilities to perform a successful task.
- **Behavioral:** In which the importance of the participation of young people in prosocial activities is underlined.
- **Moral:** Through which the construction of character will be achieved through promote prosocial norms.
- **Physiological:** Related to the construction of self-regulation skills.
- **Cognitive:** Domain that evaluates the assets of young people, to develop a broad awareness of what is significant.
- **Educational:** Building skills through activities that provide young people with new capabilities.
- **Structural:** Ensure safety through continuous supervision and monitoring provided by an adult.

The model combines resilience and positive youth development within a cultural-ecological transactional theoretical framework.

Overlapping contextual and cultural influences are shared domains of development and individual contextual transactions over time. Individual, family, school, and cultural factors have been included in this model and are believed to influence the entire system.

It is important to refer to the crucial importance that the neighborhood means for the healthy development of adolescents, because it represents the physical space in which the constellation of social relationships is established, which translate into essential components of social capital, such as; psychosocial support, solidarity and social cohesion. Some authors have reported that due to globalization processes, residential spaces have lost importance, which has resulted in a loss of social capital based on the relationships favored by the neighborhood, decreasing social contact between neighbors and decreasing social cohesion. Although it has also been argued that the neighborhood still represents an important source of social capital, which has effects on individual life satisfaction, on actions that favor community purposes and on strengthening the sense of identity. The importance of social capital, in addition to favoring the perception of well-being and happiness, also has a significant impact on health conditions, both physical and emotional, conditions that promote harmonious social coexistence and consequently a healthier and more with fewer diseases [6,7]. Considering the importance of the above, this research was carried out with the purpose of knowing the levels of healthy development of a group of adolescents, who reside in a disadvantaged socioeconomic context in the city of Durango, Mexico.

### Material and Methods

A descriptive, observational, cross-sectional study was carried out [8]. The group of participants was made up of 193 adolescents between the ages of 12 and 16 with a similar proportion of both genders who were studying at a secondary school located in a disadvantaged socioeconomic context in the city of Durango, Mexico.

### Sample size

The sample size was estimated by applying a formula for a finite population in descriptive studies.

Where:

$$n = \frac{N \cdot Z^2 \cdot p \cdot (1-p)}{(N-1) \cdot e^2 + Z^2 \cdot p \cdot (1-p)}$$

Z = 1.96 (95% confidence level)

P = 0.5 (Prevalence unknown)

d = 5% (Study precision error)

n = 174 + 19 (non-response rate .10)

The final sample size was 193.

Procedures for the collection of information: A meeting was held with the director, assistant director and teaching staff to publicize the research protocol and request authorization to apply the questionnaires. The questionnaires were self-administered following the instructions of one of the researchers and supervised by teachers from the school. A random selection of 75 adolescents from the first grade of high school, 60 adolescents from the 2nd grade and 58 adolescents from the third grade was carried out; the proportion of men and women was similar in each of the groups.

### Study instruments

The following instruments were applied to obtain information: A questionnaire for sociodemographic data, a scale for assessing the neighborhood developed and validated in a context of adolescents [9], which evaluates the perception that the group of participants have of various dimensions of the community; This instrument consists of 22 items with seven response options on a Likert-type scale. From this instrument, the following dimensions were evaluated: use of free time, psychosocial support, neighborhood security, social regulation and attachment to the neighborhood. Each of which represents an asset for the development of adolescents residing in the neighborhood. A construct called Domains of Healthy Development (DOHEDE) was also used to assess the following dimensions of Adolescent Development: Social, emotional, behavioral, moral, physiological or self-regulation, cognitive, educational, and structural. This construct was validated with Cronbach's alpha and exploratory factor analysis [10]. The instruments were applied the first week of May 2018.

### Ethical considerations

The authorities of the Educational Institution where the study was carried out, as well as the participants in the investigation, were informed in detail of the nature and objectives of the same. They were also informed of the confidential and anonymous nature of the data. Informed consent was obtained from the participants to carry out the study. The project was sent for review and approval to the Review Committee of the Master's Program in Public Health

of the Scientific Research Institute of the Juárez University of the State of Durango. The approving dictamen for its realization was received.

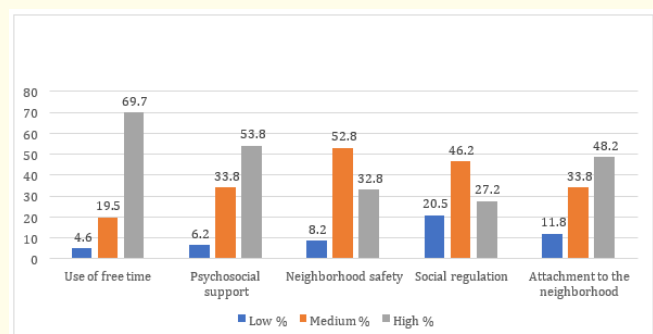
### Results

The distribution of the group of participants was as follows: The group of adolescents in the 1st grade of secondary school was made up of 40 women and 36 men, in the second grade 31 women and 29 men participated, and in the third grade 32 women and 27 men, the age range of the group of participants was from 12 to 16 years. Of the total group of participants; more than 70% live with both parents and siblings, 24% with a grandfather or grandmother, and a smaller proportion with uncles or cousins. 74% of adolescents reported living in their own home and 26% in rented or borrowed homes.

In your house you have services:	Yes		No	
	n	%	n	%
Wire	98	50.3	97	49.7
Internet	109	55.9	86	44.1
Phone	76	39	119	61
Cell phone	178	91.3	17	8.7
Television	188	96.4	7	3.6

**Table 1:** Access to technological services.

In the previous table it can be seen that, with the exception of the telephone at home, the presence of technological services related to communication is greater than 50%. The presence of cell phone and television stands out, which are greater than 90%.



**Figure 1:** Evaluation of the Neighborhood.

For the evaluation of the conditions of the neighborhood, scale was used that measures different dimensions of the same and that

make it possible to know the perception that young people have of the quality of their environment as a space for social coexistence. The dimensions that obtained a high rating (very satisfactory) were those corresponding to leisure activities, psychosocial support and attachment to the neighborhood. Safety in the neighborhood and social regulation, closely related dimensions, showed medium scores (regularly satisfactory), in any case, it should be noted that in the dimension of social regulation (referring to the intervention of adults for inappropriate behaviors) 20.5% of the group of participants rated it as poorly satisfactory. It is important to underline that 54% of the participants have lived in the same neighborhood for 6 to 15 years and 17.5% have lived in the same neighborhood for 11 to 15 years, this may explain the strong roots they refer to their neighborhood.

In the table above it can be seen that more than 95% of the study participants spend their free time at home or with groups of friends in different contexts. The street, sports centers and youth groups represent significant places in their neighborhood in which they establish their social interaction with their peer group. With reference to the use of free time, it is observed that 75% spend it watching television, going to the movies, listening to music, reading and practicing sports. 25% reported occupying it in video games and other activities.

Free-time Place of employment of leisure time:	n	%
At home	90	46.4
On the street	47	24.3
At the house of friends,	16	8.2
Sport centers, youth groups, or in the park	38	19.6
Church or other place of worship	2	1
Three or more of the above activities	1	0.5
Total	194	100
Employment of leisure time:		
Watch tv,	58	29.9
Go to the cinema, concerts or theater	3	1.5
Listen to music or reading	55	28.4
Informal sports practice	33	17.0
Video game	26	13.4
Other	17	8.8
Three or more of the above activities	2	1
Total	194	100

**Table 2:** Free-time activities of study participants.

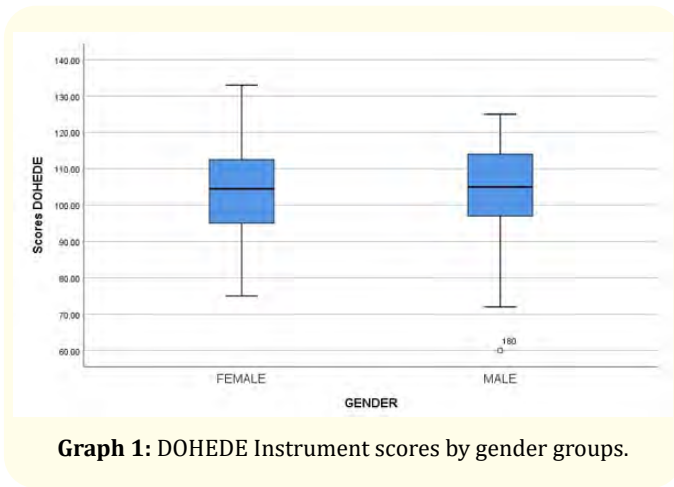
	N	Minimum	Maximum	Mean	Standard deviation
Social Domain	194	5	15	11.1692	2.19114
Emotional Domain	193	6	15	11.1347	1.95855
Behavioral Domain	193	5	15	11.3731	2.30165
Moral Domain	192	5	15	11.7969	2.15265
Physiological Domain	194	4	15	9.3196	2.26277
Cognitive Domain	192	3	15	12.6198	2.28499
Educational Domain	192	5	15	12.9896	2.13176
Structural Domain	194	12	30	23.3041	5.33201

**Table 3:** Values obtained with the DOHEDE.

In 2 questionnaires, the questions of the DOHEDE Instrument were not answered.

According to the table, the average scores of each domain of the DOHEDE and the average of the general instrument (sum), represent scores close to the maximum, which means that the

higher the score, the better the condition of healthy development in the Teen. The physiological domain is identified with a mean score of 9.31, noting that it is the minimum average when compared with the other seven domains.



DOHEDE total scores were established by gender groups, being similar between men and women (mean = 103.91, standard deviation = 11.45, mean = 103.38, standard deviation = 12.85, respectively).

The table above establishes the comparison between the male and female genders of each of the domains explored by DOHEDE; It can be seen that only in the social domain is there a statistically significant difference that favors the male gender.

Domains	Female			Male			p*
	n	Medium	sd	n	Medium	sd	
Social	96	10.73	2.28	89	11.63	1.98	.005
Behavioral	96	11.2	2.32	89	11.5	2.34	.316
Cognitive	96	12.83	2.13	89	12.35	2.44	.139
Moral	96	11.7	1.98	89	11.4	2.28	.445
Educational	96	13.23	1.81	89	12.69	2.43	.077
Physiological	96	9.30	2.41	89	9.31	2.13	.869
Emotional	96	11.0	1.75	89	11.24	2.12	.355
Structural	96	22.72	5.34	89	22.68	5.39	.112

Table 4: Comparison by gender.

Sd = Standard Deviation \*t student. In 9 questionnaires the gender data was not recorded.

Domains	Correlation	p*
Social	0.061	0.394
Behavioral	.147	.041
Moral	.158	.028
Physiological	-.025	.729
Structural	.065	.364
Emotional	.134	.044
Cognitive	-.037	.607
Educational	.040	.585

Table 5: Correlation between DOHEDE scores and age.

\* Pearson correlation.

Age was not related to the scores of the social, physiological, structural, cognitive, and educational domains, which means that there is no statistically significant evidence that relates age to the values of these domains. Although the behavioral (p = .041), moral (p = .028) and emotional (p = .044) domains did show statistically significant more favorable values in older participants.

Discussion

The importance of the neighborhood as a fundamental space for coexistence has been widely documented, which involves aspects of a physical nature, such as infrastructure and physical spaces for recreational activities and social interaction. Conditions that favor interpersonal relationships between the residents of the neighborhood and the formation of social capital within the

inhabitable geographical space, which strengthens social cohesion and the sense of belonging of the inhabitants of the place. The positive characteristics of the neighborhood offer favorable conditions for the enjoyment of a rewarding and healthy life for its inhabitants. It is important to underline the particular relevance that the neighborhood has for the healthy development of young people, who go through a stage of biopsychosocial development that implies special conditions due to the biological and psychological modifications that occur at this stage as a characteristic process. of their vital development [11,12].

It is important to mention that the majority of the members of the group of participants in this study live with relatives, and more than 70% live with their parents and siblings. This information shows the close coexistence of the study group with their family of origin. The presence of electronic means of communication, a presence that reaches 91% in mobile telephony and values over 50% on the Internet in the homes of the adolescents studied, is an objective indicator of the possibility of expanding their communication spaces beyond the geographical limits of its environment. The results of the evaluation carried out by the participants in this study, regarding the quality of their neighborhood, it is important to highlight the high values obtained in the following dimensions: leisure and free time activities, psychosocial support and attachment to the neighborhood, aspects that indicate satisfying social interaction and a clear sense of belonging.

With reference to the use of free time, more than 95% use it with their family and friends in different contexts: sports centers and youth groups, spaces that favor close coexistence and interaction with their peer groups, sharing various recreational activities. The results obtained in the average scores of each of the dimensions that make up the DOHEDE construct show values close to the maximum, which means a satisfactory development of the participants in the different domains evaluated by the applied construct. The domain in which the lowest score was obtained was physiological or self-control.

The fact that this domain -self-regulation- requires longer maturation processes which are strengthened with age; explains why the observed values are lower than those obtained in the other domains. In any case, the result in this domain can be considered satisfactory. The comparison obtained in the total score observed

between both genders showed a small statistically not significant difference that favored the male gender.

It is observed that only in the social domain, the comparison by gender between groups showed a statistically significant difference, which favors the male gender, although the values observed in the female gender are also satisfactory. The comparison in the other domains; behavioral, cognitive, moral, educational, physiological, emotional and structural did not present statistically significant differences, obtaining similar values in both genders. The importance of these findings lies in the fact that the attitudes of the participants in this study show a clear propensity for incorporation into prosocial activities, which strengthens the formation of character, a necessary condition for the construction of an awareness of what is significant that fosters favorable expectations for the future life. Correct supervision by adults in the family and school contexts is also observed. Together, the data obtained in the different domains of the applied construct express the necessary conditions to satisfactorily face the different difficulties, particularly in this stage of personal development.

Different studies have shown the importance of a favorable neighborhood for the existence of a social capital that means social cohesion and solidarity, and consequently a satisfactory life in the physical and emotional plane [13,14]. It has also been documented that the existence of unfavorable environmental contexts in the neighborhood and at school [15-18] represent environments that promote unfavorable behavioral and emotional effects, and disorders that require psychosocial and educational interventions in order to be able to psychosocially integrate adolescents affected by the adversity of their contexts [19,20]. These documented backgrounds in research from different countries is consistent with several of the findings we obtained in our study; particularly those referring to the strong attachment to the neighborhood, the presence of satisfactory social capital, healthy family relationships and positive interaction with peer groups. The disadvantaged socioeconomic conditions of the study participants did not represent a limitation for the construction of a satisfactory family and psychosocial environment within their neighborhood, expressed in the positive conditions shown with the results obtained through the application of the DOHEDE construct.

The specificity of the geographical and social space of the studied neighborhood represents a limitation of this work. It is important to carry out the exploration of different groups of young people, in a diversity of geographical, cultural and socioeconomic scenarios that allow to clarify which are the most promising conditions for the construction of positive neighborhoods that mean spaces that promote development youth from different socioeconomic and cultural backgrounds.

## Conclusions

The results obtained in this study are consistent with the findings documented in the scientific literatura, referring to the importance of positive neighborhood conditions for the favorable biopsychosocial development of adolescents. The evaluation of the different psychosocial and material dimensions of the neighborhood, as well as the application of a validated construct to evaluate the different domains of the healthy development of the adolescent, allows us to establish a tentative association between the satisfactory conditions of the neighborhood with the healthy development of the participants in the study; an association that is important to validate in an analytical epidemiological study, since ours was a descriptive study. It is important to underline the most relevant findings:

The values obtained through the application of the Healthy Development Domains construct showed uniform satisfactory results in practically all the domains evaluated.

The mean scores for each domain and the overall mean represent scores close to the maximum. The physiological domain is identified with an average score of 9.31, observing that it is the minimum average when compared with the other seven domains. In any case, the observed result can be considered satisfactory. More than 95% of the study participants spend their free time at home or with groups of friends in different contexts.

The comparison between the masculine and feminine genders of each of the domains explored by DOHEDE is established; It can be seen that only in the social domain is there a statistically significant difference that favors the male gender. Age was not related to scores in the social, physiological, structural, cognitive, and educational domains. Although the behavioral, moral and emotional domains did show statistically significant more favorable values in the older participants.

A significant finding of the study proves that although the participants in it reside in a context considered socioeconomically unfavorable, the presence of social capital expressed in solidarity and social cohesion, together with a solid family relationship, represent strengths that make it to define the neighborhood not only as a protective psychosocial element, but as a factor that favors the healthy development and resilience of the population. It is important to validate these findings in population groups from different contexts, since if similar results are obtained, they can represent a solid argument that favors the construction and application of public and social policies to improve the material and psychosocial conditions of different disadvantaged environments.

## Acknowledgements

The authors thank Dr. Ana Cristina Castañeda Márquez, the useful comments made on the manuscript.

## Conflict of Interest

The authors declare that they have no conflicts of interest of any kind.

## Bibliography

1. Ana Serapio Costa. "La adolescencia actual y su temprano comienzo". *Revista de Estudios de Juventud*. Num. 73 (2006) 11-23.
2. Sarah-Jayne Blakemore. "The art of medicine. Adolescence and mental health". *The Lancet* 393 (2019): 2030-2031.
3. Rehana A Salam., *et al.* "Adolescent Health and Well-Being: Background and Methodology for Review of Potential Interventions". *Journal of Adolescent Health* 59 (2016): S4eS10.
4. Brandy R. Maynard., *et al.* "Bullying Victimization among School-Aged Immigrant Youth in the United States". *Journal of Adolescent Health* 58 (2016): 337-344.
5. Maryam Kia-Keating., *et al.* "Protecting and Promoting: An integrative Conceptual Model for Healthy Development of adolescents". *Journal of Adolescent Health* 48 (2011): 220-228.
6. Marloes M., *et al.* "Neighborhood-Based social capital and life satisfaction: the case of Rotterdam. The Netherlands". *Urban Geography* 39.10 (2018): 1484-1509.
7. Daniel A Hackman., *et al.* "Neighborhood environments influence emotion and physiological reactivity". *Scientific Reports* 9 (2019): 9498.

8. Des Jarlais DC., *et al.* "Improving the Reporting Quality of Nonrandomized Evaluations of Behavioral and Public Health Interventions: The TREND Statement". *American Journal of Public Health* 94 (2004): 361-366.
9. Alfredo Oliva., *et al.* Barrio o Vecindario y Activos Comunitarios; en Alfredo Oliva Delgado; Eds, Activos Para el Desarrollo Positivo y la Salud Mental en la Adolescencia, Junta de Andalucía. Consejería de Salud. (2011): 260-269.
10. Lares Bayona EF, *et al.* "Validación del Instrumento Dominios de Desarrollo Saludable (DODESA) aplicado en población adolescente de la ciudad de Durango". *Revista Transdisciplinaria de Estudios Migratorios* 3 (2017): 15-26.
11. Francesca Mastorci., *et al.* "Adolescent Health: A Framework for Developing an Innovative Personalized Well Being Index". *Frontiers in Pediatrics* 8 (2020): 181.
12. Helga Bjørnøy Urke., *et al.* "Appreciation. Findings From a Prospective Study in Norway". *Frontiers in Psychology* 12 (2021): 696198.
13. Troy D Glover., *et al.* "Neighborhood Walking and Social Connectedness". *Frontiers in Sports and Active Living* 4 (2022): 825224.
14. Berkman L and Clark C. "Neighborhoods and Networks: The Construction of Safe Places and Bridges". In: Kawachi, I. and Berkman, L., Eds, Neighborhoods and Health, Oxford University Press, Oxford and New York (2003): 288-302.
15. Ana Isabel Ribeiro., *et al.* "Neighborhood Socioeconomic Deprivation and Allostatic Load: A Scoping Review". *International Journal of Environmental Research and Public Health* 15 (2018): 1092.
16. Branas C C., *et al.* "Vacant properties and violence in neighborhoods". *ISRN Public Health* (2012): 1-23.
17. Chola L., *et al.* "Association of neighbourhood and individual social capital, neighbourhood economic deprivation and self-rated health in South Africa – a multi-level analysis". *PloS One* 8 (2013): e71085.
18. Messer LC., *et al.* "The urban built environment and associations with women's psychosocial health". *Journal of Urban Health* 90 (2013): 857-871.
19. Shoshanna L Fine., *et al.* "A Multi-Country Study of Risk and Protective Factors for Emotional and Behavioral Problems Among Early Adolescents". *Journal of Adolescent Health* 71 (2022): 480-487.
20. Robert J Sampson. "Neighborhood-Level Context and Health: Lessons from Sociology". In: Kawachi, I. and Berkman, L., Eds, Neighborhoods and Health, Oxford University Press, Oxford and New York (2003): 132-146.