

Health risk of adolescents in the rural and urban environment: integrative review

Abstract

Young people have specific health risks whether they live in a rural environment or in an urban environment. It was intended with this integrative literature review to identify the specific health risks of young people in rural and urban settings. To achieve this, we carried out an integrative review of the literature on EBSCO databases, PROQUEST, Mendeley, B-ON, from February 2018 to May 2018, having the selection criteria articles published between 2002 and 2018 so that we identify recent studies that reveal actual risks. The results allowed us to identify a very varied set of risk behaviours in both rural and urban settings. Most of the studies analysed had a transversal design, anthropometric evaluations were performed to evaluate health status. Interesting findings resulted, namely young people in rural areas are exposed to additional and more varied risks than urban ones, requiring greater supervision and follow-up by health professionals. These findings can help to define practices more directed to real risks. Although health authorities are aware of some risks to which young people are subjected, studies report little or nothing has been done to protect them, so we believe that it is urgent to create health policies that are appropriate for each environment to safeguard them.

Keywords: rural health, urban health, risk behavior, adolescent

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Introduction

Studies about the risks of adolescents in rural and urban areas so far are still very rudimentary, so this integrative review is very attractive and bearing in mind that in the near future these young people will be the future of the communities. Community actions aimed at the promotion, health protection and identification of community care needs in their different dimensions require that health professionals have a proactive approach. Adolescence is a phase of life characterized by biological, physical, psychological and social transformations that can affect daily activities of life. It has been found that young people do not follow the daily recommendations of physical activity proposed by the World Health Organization (2016).

According to the World Health Organization,¹ adolescent-young is the period between 10 and 19 years of age are generally considered a healthy group. However, many teenagers die prematurely due to accidents, suicides, violence, pregnancy-related complications and other diseases that are preventable or treatable. Many more suffer from chronic diseases and disability. In addition, many serious diseases in adulthood have their roots in adolescence. For example, tobacco use, sexually transmitted infections, including HIV, eating habits, lead to an early onset of illness and in a medium to long term period to premature death. The term risk behaviours were defined by Matos & Carvalhosa² as any activity practiced by individuals, with such frequency and intensity that it leads to an increased risk of illness or injury.

According to Stanhope & Lancaster,³ health care is a priority, especially in regions where there are insufficient care providers, such as rural communities. In terms of health needs they are also very

different in rural and urban environments due to permanent problems such as poor distribution of health professionals, poverty, limited access to services, illiteracy and social isolation, make communities disadvantaged in rural areas.

To contextualize rural and urban, Stanhope & Lancaster³ point out that the two cannot be identified as opposing communities since urban areas exert a growing influence on the rural ones, they must be seen as a rural-urban continuum. Stanhope & Lancaster³ define rural as a community with less than 61 people per square kilometre, which is more than 30minutes away from an urban centre and usually has an agricultural involvement; and urban as a community with more than 61 people per square kilometre (more than 20,000 people and less than 50,000) and usually has no agricultural involvement. For Hanson⁴ rural is often defined as anything that is not urban, he adds that urban and rural are “area types,” rather than specific areas drawn on a map. He uses the term urban as a population that includes people living in metropolitan areas and places with 2500 or more residents. On the other hand, he uses the term rural to define all other people in the population.

Stanhope & Lancaster³ point out that the age distribution between the two communities is also different, being demographically bipolar in rural areas, with a higher number of young and elderly residents in rural areas, we can find a higher proportion of individuals with ages from 6-17years of age and over 65years of age living in rural areas than in more urban (urban) areas. They also add that adults in rural communities are less educated, tend to be poorer, have fewer preventive behaviours, smoke and drink more alcohol, are more obese and practice less exercise than urban adults, who seek more health care and tend to have healthier lifestyles.

We can therefore consider that rural youth need more support. Community health nurses in rural settings have an important role in providing health care by teaching them to prevent accidents by encouraging them to adopt healthier behaviours and life styles in order to reduce chronic disease. The greater challenge that nurses face in rural communities is “Rural people prefer and often seek help through their informal networks, such as neighbours, from close relatives, ... instead of seeking the care of formal health care system”.³

The question of our review is: What are the health risks for adolescents in rural and urban areas? The main objective of this article is to identify the health risks of adolescents in rural and urban environments.

Methods

In order to carry out the bibliographic research in the integrative review of the literature we used the EBSCO databases, PROQUEST, Mendeley, B-ON including scientific articles from the year 2000 to 2018, this survey was conducted from February to May. To locate

the articles, we used the MeSH terms: “adolescent”; “Urban health”; Rural health; “Risk behaviour”, in Portuguese, “adolescent”; “Urban health”; “Rural health”; “Risk behaviour” with search modifier “AND” between the descriptors. We had considered inclusion criteria studies that mention specific health risks to adolescent health, studies that report specific health risks to rural and to urban context, we excluded studies related to specific population, like population with chronic disease. The publications were pre-selected by the titles, which contained the terms “adolescent”, “rural”, “urban” and “risk behaviour” simultaneously, accompanied by reading the summary made available. Considering the inclusion criteria, we selected 10 articles and excluded the rest.

Results

The research carried out resulted in articles from Brazil, Argentina, Colombia, Venezuela, Scotland, Australia, and Portugal. At the end, only 10 articles were selected. For the analysis of the selected material, the study, year, type of study, place of research and where the journal was published were considered. The Table 1 presents the information:

Table 1 Analysis of the selected material

Study	Year	Type of study	Place of the research	Journal
Glaner ¹	2002	Correlational (descriptive)	Municipality of Saudade and Concordia in the city of Chapecó, in the west of Santa Catarina (Brazil)	São Paulo Physical Education Journal
Quine et al. ¹¹	2003	Qualitative and Exploratory	North South Wales (Austrália)	The International Electronic Journal of Rural and Remote Health research, Education Practice and Policy
Gonçalves ¹³	2004	Transversal	Braga (Portugal)	ReseachGate
Petroski et al. ⁸	2009	Transversal	West of Santa Catarina and North of Rio Grande do Sul (Brazil)	motricity
Mulassi et al. ¹⁰	2010	cross-sectional	Buenos Aires (Argentina)	Argentine archives of pediatrics
Ortega et al. ⁵	2010	descriptive	Maracaibo, Mara e Páez (Venezuela)	Clinical Research
Pelegri et al. ⁶	2010	Transversal	Chapecó, Concórdia, Saudades, Rio Grande do Sul (Brazil)	Nutrition Magazine Campinas
González-Quiñones et al. ¹⁴	2012	Observational	Bogotá (Colômbia)	Journal of Public Health
Levin ¹²	2014	Cross-Sectional and Multilevel	Escócia	Public Health Nutrition
Regis et al. ⁷	2016	Descriptive with quantitative approach	Pernambuco (Brazil)	Einstein

Risk of the rural versus urban environment

In the study by Ortega et al.⁵ “Nutritional assessment, micronutrient deficiencies and anaemia among female adolescents in an urban and a rural zone from Zulia state, Venezuela” in 2003 found in the rural adolescents a significant decrease in the mean value of weight, height, body mass index (BMI), and a high prevalence of anaemia in urban adolescents. According to the authors, the anaemia found in adolescents living in rural areas in Venezuela may be related to the fact that they have low accessibility to food rich in iron and vitamin C, according to the definition of rural, these inhabitants are far from urban centres and often have low economic power which makes travelling impossible. Another factor to consider, according to Ortega, et al.⁵ is the fact that young people in rural areas initiate the introduction of food (cereals, legumes and tubers) before the age of

six months, which are inhibitors of iron absorption.

Ortega, et al.⁵ also found in urban adolescents a decrease in vitamin A absorption, a higher percentage of overweight adolescents, compared to rural adolescents. This phenomenon is probably associated with poor eating habits in which food with a high caloric content and low nutritional content are ingested, the urban adolescents eat more “plastic food” because it is more accessible to them than it is for adolescents living in rural settings.

The study by Ortega et al.⁵ complied with International Ethics Standards for Human Research and was approved by the Scientific Committee of the Scientific and Humanistic Development Council of the University of Zulia (CONDESLUZ) and by the Scientific Committee of the National Fund for the Advancement of Science and

Technology of the Bolivarian Republic of Venezuela (FONACIT) No. 2000001904. The parents or legal representatives of the adolescents were informed of the study and oral and written informed consent was obtained for participation in the study.

Pelegriani, et al.,⁶ in their study “Nutritional status and associated factors in school children living in rural and urban areas” carried out in 2008 in the state of Santa Catarina and Rio Grande do Sul, Brazil, found higher prevalence of overweight in adolescents living in urban environments than in rural areas. This may be due to the fact that urban adolescents are less active than rural ones. Rural adolescents culturally help their parents in agricultural activities, they walk long distances to reach public transportation and school, on the other hand urban adolescents have easy access to high-calorie food. The study by Pelegriani et al.⁶ was approved by the Committee on Ethics in Research with Humans of the Federal University of Santa Catarina, protocol No. 217, on September 29, 2008. All participants involved in the study freely signed an informed consent form before data collection.

In the study by Regis et al.,⁷ “Urban versus rural lifestyle in adolescents: associations between environment, physical activity levels and sedentary behavior” observed that adolescents living in rural areas had healthier habits compared to adolescents in urban areas in relation with active leisure preference, less sitting time, less computer and/or video game exposure, less exposure to television, and higher levels of physical activity. This more active lifestyle is associated with the early onset of labour activity related to physical strength, which is practised in agricultural activities and domestic activity for females. Therefore, the insertion of rural adolescents in the labour market is an important data to justify the higher level of physical activity.

Regis et al.⁷ found that some characteristics of the urban environment, such as lack of safety, high population density and excessive involvement in intellectual activities, may contribute to the reduction of physical activity levels, greater exposure to sedentary behaviours, risk of obesity, being considered one of the major health problems of the world population, where the community health nurse should have a strong intervention in the urban environment in the promotion of physical activity in school and leisure.

The study by Regis et al.⁷ was approved by the Human Research Ethics Committee of the University of Pernambuco, under no. 159/10, CAAE: 0158.0.097. 000-10. Parents of underage students freely signed informed consent for the participation of their children, and students over the age of 18 also signed it freely.

Petroski, et al.⁸ conducted a study on “Body dissatisfaction in rural and urban adolescents” found that the prevalence of body dissatisfaction is high and similar in rural and urban adolescents, regardless of gender. Both want to reduce body size when there is excess weight and increase the silhouette when there is low weight. The factors that were associated with body dissatisfaction were nutritional status and body adiposity. Contrary to what we think young people in rural areas, are more satisfied with their body image, because they do not have as much accessibility to fast food as urban adolescents, nor are they submitted to excessive pressure by society regarding the worship of the body. We can conclude that dissatisfaction with the body image of adolescents is not associated with the environment in which they live, be it urban or rural.

We cannot fail to mention that there are still few studies on the subject related to the environments in which adolescents live, being this study the first to be carried out. In the study by Petroski et al.⁸ the procedures used respected the ethical criteria of the commission on human experimentation and the Declaration of Helsinki of 1975, with the revision of 1983. It was approved by the Research Ethics Committee of the Federal University of Santa Catarina under no. 217/2008 in this context.

In the study by Glaner,⁹ “Level of physical activity and physical fitness related to health in rural and urban boys”, performed in Brazil, there were better results of health-related physical fitness (AFRS) in rural than urban. Rural boys have significantly better motor and functional components than urban ones. It seems that the rural lifestyle contributes to their better performance. In agriculture, caloric expenditure can be considered much higher (rural activities) than in urban activities, where most of the work is characterized as sedentary.

Given the relationship between physical activity level (NAF) and health related physical fitness (AFRS), the association between NAF and AFRS is of low magnitude, concluding that the questionnaire used is not a sufficiently valid instrument to differentiate and / or to estimate the NAF in the different samples. In view of the conclusions, it is clear that there is a much larger proportion of urban boys exposed to the risk of developing chronic disease associated with low AFRS than rural ones. In this study there was no reference regarding compliance with ethical and legal principles.

Mulassi et al.¹⁰ carried out the study “Eating habits, physical activity, smoking and alcohol consumption in adolescents attending school of Buenos Aires.” And they reached the following results:

- A. Regarding physical activity, 9 out of 10 adolescents performed physical activity at least 1 hour per week. Residents in rural areas have less physical activity than urban residents.
- B. Regarding food, there were no differences according to the area of residence (rural, urban), except in the consumption of eggs in which the rural ones consume more.
- C. The study revealed adequate eating habits and physical activity in general, both in rural and urban settings.
- D. With regard to smoking, rural adolescents smoke more than urban adolescents. Female adolescents smoke more than male adolescents.
- E. Regarding alcohol consumption, no differences were observed in alcohol consumption according to gender and area of residence (rural, urban).
- F. It has been shown that alcohol and tobacco consumption are associated.

For the accomplishment of the interview permission was obtained from the municipal and local authorities, of the general inspection of schools and also the consent of the students. No informed consent was obtained from the parents, but they were informed about the existence of the interview, through the school authorities.

The study Quine et al.,¹¹ “Health and access issues among Australian adolescents: a rural-urban comparison” was conducted in New South Wales, Australia and among shared reports of urban-rural adolescents found a striking difference unique to rural adolescents

regarding suicide and pregnancy in adolescence. Adolescents report differences in access to health services (a limited number of health care providers and long waiting times), they also report having a limited range of health professionals (e.g., “there is only one doctor”). On the other hand, they show a lack of confidentiality in rural and urban areas in the search for some services (condoms in a pharmacy, venereal diseases in the doctor’s office, etc.), and there is a greater concern in rural areas. The findings suggest a structural disadvantage in rural areas (limited education, employment opportunity, recreational facilities) that have a negative impact on health outcomes and in particular on mental health, which in turn contribute to risk behaviours. It was noted that there were gender differences and was evident among urban and rural adolescents, but with more emphasis on rural ones, since the idea that the man has to be self-sufficient and should not ask for help was more expressive.

Concerning the concerns mentioned by both rural adolescents and urban adolescents, the following stand out: alcohol and illicit drug consumption, bullying, road safety, diet and body image, sexual health, stress and depression. For this reason, the authors of this study suggest that policy measures be implemented to minimize this impact and reduce the differences. Ethical approval for this study was obtained from the human research ethics committee of the West mead Children’s Hospital and the participating health services ethics committees. All participating adolescents and their parents signed informed consent.

According to Levin¹² in the study “Urban-rural differences in adolescent eating behaviour: A Multilevel Cross-Sectional study of 15-Year-Olds in Scotland” adolescents in rural areas have a healthier diet than those living in urban areas. Adolescents living in remote rural areas of Scotland had the highest consumption in terms of frequency of vegetables and lower consumption in terms of frequency of sweets and chips. Interestingly, it was not in the four major Scottish cities, but in those described as “other urban” (large cities with 10,000 to 125,000 residents) that adolescents had poorer diets. It also indicates that rurality did not influence dietary behaviour, food poverty, breakfast consumption or sharing of family meals. He also mentions that rurality does not change the school-level variance in terms of the significance of fruit and vegetable consumption and the irregular eating of breakfast. Regarding gender and age, the author reports that consumption of fruit and vegetables is more prevalent in younger girls and adolescents and reports a less prevalent ingestion of sweets and chips. He also says that adolescents who attend private schools consume fruit and vegetables more often and eat less frequently chips. Adolescents from private schools present a higher score in terms of average healthy eating compared to adolescents in public schools.

The research protocol was approved by the ethics committee of the University of Edinburgh School of Education.

According to the article by Gonçalves,¹³ “Differences of Lifestyles among young populations of Rural (Boticas) and Urban Environment (Braga)” the two realities present a very differentiated set of concepts on lifestyles, which indicates the existence of cognitive, evaluative matrices and their substantially different practices in the process of adaptation to the eco systemic environment where they operate.

Regarding sexuality: It is a taboo subject for both rural and urban youth. However, the levels of approach to the subject are more expressive in urban communities. These differences can be justified on

the basis of socio-economic factors, since young people from socially disadvantaged families and rural workers tend to be more withdrawn, have more health problems and are also more resistant to changes to healthier lifestyles and after programs for health rehabilitation and alteration of habits have a higher rate of recidivism.

Concerning free time: The activities of urban youth are organized according to a more favoured economic standard and adequate resources and infrastructure (e.g. computer and internet, sports, cinema, television, shopping malls and beauty treatment), while rural youth activities are predominantly spontaneous and unstructured (e.g. playing, watching TV, leisure/sports).

Regarding values: Rural young people express higher levels of resistance in adherence to new trends and remain in a more traditional, conservative and censorship plan to non-compliance with the norm, while urban youths are more flexible and have a higher degree of incorporation of the new.

Regarding principles: The more outward-looking achievements are more evident in the urban environment, while in the rural environment the interior is highlighted, where the determining factor is the human aspect, personalization and the search for happiness based on internal health, interpersonal knowledge, interiorization and emotion.

Relative to everyday life: It was the axis where the most significant differences were obtained. In urban youth there is a greater adherence to advertising pressure and consumer campaigns, while young rural people are less permeable to these influences.

Regarding food, hygiene and safety: There were also significant differences, which are based mainly on the circumstantial context of place, the different socioeconomic pattern of the sample and the qualification of the subjects. In rural areas the economic disadvantages, reduced employment opportunities and the lack of rewarding remuneration are the basis of the intentionality of emigrating. At the rural level, these handicaps have less repercussion on the profession and are assigned less importance as a determinant of the future. As for urban youth, the profession is an element that facilitates access to better living conditions.

Regarding love: In rural youth, their conception is predominantly based on the maternal-filial relationship and carnal-marriage relationship (family). In urban youth, the maternal-filial and altruistic/assistentialist relationship (the other) stands out, which may underlie city impersonality, in which relationships and interpersonal support are diminished.

Regarding power: Rural young people relate their lifestyles more closely to physical strength and knowledge, while urban youth make their lifestyles dependent largely on economic power.

Regarding health-related aspects: Rural youth regard drugs and food areas as being the best health can provide, while in urban areas these factors are predominantly related to activity and physical exercise.

Regarding the symbolic representation of freedom: Rural young people chose the ocean as a symbol of freedom, while the urban ones identified the mountain more. Both environments have associated freedom in the construction of lifestyles, preferentially to life not subject to norms, rules or codes.

Regarding the future: The concerns of the rural youth are focused on war and only after, at a great distance appear drugs and hunger. Concerning urban youth, there is a preponderance of drug-related aspects.

The differences between rural and urban are based on specific concepts and practices of distinct lifestyles resulting from evident economic, organizational, infrastructural, cultural, value, and political interests.

Regarding the ethical issue, this is not addressed in a direct way, only referring to a questionnaire built from scratch and respecting the methodological procedures regarding the design, validation, selection of respondents and application in the field.

According to González-Quiñones et al.¹⁴ in the study “Identifying risk factors for pregnancy amongst Colombian adolescents from urban and rural school populations” lack of knowledge is the main risk factor. Information on family planning has proved to be a key factor. Receiving information and being in doubt proved to be more dangerous than not knowing. Understanding well-planned sexuality has proven to be important in leading a responsible sexual life.

- I. There is information, but it is scarce or incorrectly exposed to the needs of young people in how to prevent pregnancy.
- II. Faced with this, it becomes fundamental to empower parents and teachers to teach sexuality.
- III. This study did not show that trust in parents makes a difference.
- IV. The second risk factor found was having a previous abortion.
- V. The way you experience your first sexual relationship seems to be a determining factor in how you plan your sex life.
- VI. Single-parents or dysfunctional families are at greater risk.

Consistently, this study shows that young people in rural areas are at higher risk of teenage pregnancy than those in urban areas.

In this study, many factors identified as risk were not evidenced as being the son of a teenage mother, presence of suicidal ideation, severe dysfunction and other dysfunctional relationships with the family. Self-esteem, relationship with parents and perception of the future were not identified as risk factors. Adolescent pregnancy seems more of an accidental situation, caused by ignorance and not related to troubled adolescents. This study does not explicitly mention ethical approval, having been presented to the management of the different schools and then these approved its application.

Discussion

Regarding eating habits, we correlated the studies of: Ortega et al.,⁵ Levin¹² and Mulassi et al.¹⁰ who refer to this issue, and identify interesting and different findings. The first identifies a more nutritious diet in urban than in rural areas. The second mentions that rural adolescents have a healthier diet than urban ones, this can be justified because *the diet in rural areas is based on traditional staple foods, while that of the urban population incorporates more modern foods.*¹⁵ The latest reports refer that there are no feeding differences between urban and rural adolescents.

Regarding overweight/obesity, this theme is analysed in the studies: of Pelegrini et al.,⁶ Ortega et al.⁵ and Regis et al.⁷ In the first

two, results show that urban adolescents have a higher prevalence of overweight than rural ones. In the last one, it refers to an increased risk of obesity due to the sedentary lifestyle in urban areas. These findings can model health interventions in order to reach equity between rural and urban areas, the results seem to point out that rural adolescents can't have, or there are some constraints and worst context related with determinants of health.

Regarding physical activity in the studies: Regis et al.,⁷ Glaner⁹ found better physical activity habits in rural adolescents compared to urban. Contrary to these findings Mulassi et al.¹⁰ identify that rural adolescents practice less physical activity than urban adolescents. The first two report that rural boys have better motor and functional components than urban ones due to participation in rural work. The study by Mulassi et al.¹⁰ identify different results probably because they had used a questionnaire based on urban leisure activities (gym, bicycle, etc.) to the detriment to physical activity associated with daily activities like occupational activities (work) or non-scheduled/controlled activities. Gonçalves¹³ correlates free time and physical activity of urban adolescents with the socioeconomic level and adapted infrastructures. While the rural ones are predominantly spontaneous.

The studies of Quine et al.¹¹ and Gonzales-Quinones et al.¹⁴ found that there is a higher risk of pregnancy in rural adolescents, this increased health risk can be related with worse health literacy of this group.

Quine et al.¹¹ states that suicide is more prevalent in rural adolescents. They found that it may be associated with the structural disadvantage found in rural areas. The same author reports that adolescents in rural areas report having less access to health services.

Mulassi et al.¹⁰ tells us that smoking is more prevalent in rural than in urban areas and that alcohol consumption is similar in rural and urban areas despite both being related.

Petroski, et al.⁸ verified that the prevalence of body dissatisfaction is an important problem, considering that the prevalence of this problem is similar in rural and urban adolescents.

Considering these findings, we can state that both rural and urban adolescents are exposed to health risks, these health risks results from a set of health determinants which exert their influence in a different way.

Conclusion

Considering the results, we highlight the pertinence of the theme, verifying that rural and urban youth are exposed to many risks. As far as we can see, this is a subject studied in several countries, some countries need more investigation revealing specific health risks in young people, both in rural and urban communities, complementing in this way, existing knowledge.

Despite the results found and risks that were identified, few actions and health promotion were reported in these studies, and we consider that it would be important to conduct another study to identify specific measures to address this problem, so that we could minimize exposure to health risks of these young people who will be the future adults of our society.

We found that rural youths are exposed to a greater amount and variety of risks than urban ones, requiring greater supervision and

follow-up by health professionals. It is urgent to create health policies that will protect young people in an accurately and directed way. In rural areas, more structures and infrastructures should be created to promote protective environments to young people and to promote more activities in order to minimize risks. Accessibility to spaces of leisure and practice of physical exercise should be improved in urban environments. The outcome in this study found that sedentarism is a problem in urban areas. Young people in urban areas should be encouraged to participate in more outdoor activities in safety.

The investment and development of health policies and programs considering health inequities associated with rural or urban environment is essential and should be a priority.

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Conflict of interest

The author declares that there is no conflict of interest.

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