

European Journal of Public Health Studies

ISSN: 2668 - 1056

ISSN-L: 2668 - 1056

Available on-line at: www.oapub.org/hlt

doi: 10.5281/zenodo.3597522

Volume 1 | Issue 2 | 2019

SOCIO-ENVIRONMENTAL FACTORS AS DETERMINANTS OF SOCIAL WELLBEING OF ADOLESCENTS IN CALABAR, CROSS RIVER STATE, NIGERIA

Ibiam, A. Agwu, Bekomson, E. Munebe, Angioha, P. Unim Department of Sociology, University of Calabar, Nigeria

Abstract:

The study examines those socio-economic determinants of social wellbeing of adolescents in Calabar. The descriptive cross-sectional survey design was adopted in gathering data to determine if socio-environmental factors such as family structure and living condition influence the wellbeing of adolescents. The data was gathered from a sample of 384 from a population of 371,022 from Calabar, Cross River State, Nigeria using structured questionnaire. Gathered data was checked for appropriateness and frequency distribution, simple percentages, charts and lineal regression was used to analyses the analyze the variables under study. The hypotheses were tested at 0.05 level of significance. Results shows that Family structure and Living condition are significant determinants of the social wellbeing of adolescent in Calabar, Cross River State, Nigeria. Based on these findings, the study hereby recommends amongst others that strategies are needed by various agencies concerned to put in place proper strategies, plans and policies that will support adolescents from broken homes so that those deleterious outcomes that are obvious in the study area can be reduced drastically.

Keywords: socio-economic determinants, social wellbeing, adolescents, family structure, living condition

1. Introduction

The social and environmental wellbeing of adolescents are important factors for the development and growth of any country. A period ranked with rapid, social and emotional change, adolescents constitute 16 percent of the world population (UNICEF, 2019). Sub-Saharan Africa is home to 120 million adolescents, representing 23 percent of the region's population and this figure is expected to increase by 37 percent by 2030 (UNICEF, 2019). A period of transition from childhood to adulthood, it is a period where adolescents acquire cognitive, physical emotional resources that serve as the

foundation for social wellbeing in later life. Thus, it is also known as a period where children try to experiment with new things, become vulnerable and are exposed to new risks. It represents a period where a lot of young growing children experience a lot of life defining events, first sexual relationships, parenthood, manages etc. (Kyilleh, Tabong, & Konkan, 2018; Ukwayi, Angioha & Ojong-Ejoh, 2018).

According to the World Health Organization (2018) approximately one in every five growing children under the age of 18 go through and experience some form of emotional, behavioral and developmental problem and one adolescent in every eight experience one mental problem or the other. Other studies such as that of Brettschilder and Naul (2007) revealed that adolescent physical activities have reduced through time and this is responsible for the death of 6 percent of the world population. According to Breltsdrieider and Naul (2007), this figure represents 3.2 million deaths annually including 2.3 million in developing nations. Factor attributed to the high mortality include illicit drug use, unsafe sex, alcohol consumption, infections and parasitic diseases, crime and unintentional injuries (Gore, Bloem & Patton, 2011; Patton, Cofey & Cappa, 2012; Ukwayi, Angioha & Aniah, 2019). The odd of adolescent losing their life is two times higher in south Asian region and 4 times higher in sub-Sahara Africa (WHO, 2014).

Adolescent wellbeing is shaped by the social environment that they grow in and the daily context of such environment. In both developed and developing nations, adolescents face several common enemies that determines their future and pose problems to their wellbeing (Kabiru, Izugbara & Baguy, 2013; Ukwayi, Angioha & Nwagboso, 2018), these includes homicides, sexually transmitted diseases, substance use and abuse etc. in Nigeria. Evidence abound that adolescent wellbeing is not given priority in terms of policy formation and implementation and government programmes such that these category of the population remain in the dark about issues of their health and survival and these are transferred into adulthood, with scholarly evidence revealing that these category of the population accounts for 43 percent of the nation's population.

In Calabar, Cross River State, it is disheartening to note the amount of social vices and anti-social behavior that adolescent get involves in. According to media reports and other news outlet, never a day goes by without report of adolescents' getting involved in anti-social behaviors such as cult related crimes, arm robbery, arson, examination malpractices, homicides, promiscuity, student unrest (Etuk, Ihejiamaizu & Obaji, 2016; Ekpo & Angioha, 2019). The socio-economic and cultural settings provide for an environment that is fertile for either positive or negative influence on the society. Despite the effort by the government of the state, to restore moral rectitude and modest living in metropolis, all efforts have proved abortive as adolescent are still a problem.

These studies seek to examine the extent to which socio-economic factors such as family structure and living condition determines the social wellbeing of adolescent in Calabar, Cross River State, Nigeria.

2. Research Question

- 1) To what extent does family structure determine social wellbeing of adolescent in Calabar, Cross River State, Nigeria?
- 2) To what extent does living condition influence the social wellbeing of adolescent in Calabar, Cross River State, Nigeria?

2.1 Objective of the Study

The main objective of the study was to examine socio-environmental factors as determinants of social wellbeing of adolescents in Calabar, Cross River State, Nigeria. The study aims to specifically:

- 1) Examine the extent to which family structure determines the social wellbeing of adolescent in Calabar, Cross River State, Nigeria.
- 2) Investigate the influence of living condition on the social wellbeing of adolescent in Calabar, Cross River State, Nigeria.

2.2 Statement of Hypotheses

- 1) Family structure does not significant determine the social wellbeing of adolescent in Calabar, Cross River State, Nigeria.
- 2) Living condition does not significantly influences the social wellbeing of adolescent in Calabar, Cross River State, Nigeria.

2.3 Scope of the Study

The study seeks to examine socio-environmental factors as determinants of social wellbeing of adolescents in Calabar, Cross River State, Nigeria. The study specifically examines the social and environmental factors such as family structure and living condition and how they determine the wellbeing of adolescents. The geographical scope of the study is Calabar, Cross River State, Nigeria.

3. Literature Review and Theoretical Framework

3.1 Literature Review

3.1.1 Family Structure and Social Wellbeing of Adolescents

Empirically, evidence has shown that family structures have significant relationship with the wellbeing of adolescent. A study conducted by Bhat and Ammabhavi (2011) examined the relationship between home environment and psychosocial competence of adolescent. Results from data gathered from one hundred (100) adolescent studying in medium schools of Dharwad revealed that adolescent with high control, social isolation, rejection at home and social isolation has shown significant lower problem solving decision making, coping with emotions and over all psychosocial solving, punishment conformity is significant influence by home environment.

Another study by Mahk and Balda (2001) on the effect of family income on children's intelligence. Data was gathered from children within the age range of 8 to 9 years from Hissar city. Data gathered from interview and Wechslers intelligence scale for children. Results revealed that family income positively correlates with the intelligence of children. Ginther and Pollak (2004) study on family structure and children's educational outcome in joint family. The sample size used for the topic is 12,686 young individuals aged between 14-21 years. Peabody individual achievement test was administered on adolescent to assess their reading recognition, math abilities and comprehension. Finding revealed that crucial distinction exists between children in extended family and children reared in joint families. This study revealed that there is a significant relationship between family structure and children's educational outcome weakens substantially and is often statistically insignificant.

3.1.2 Living Condition and Social Wellbeing of Adolescents

Living conditions and housing in particular, are inextricably linked to physical and mental health of child and adolescent development. This is through direct effects such as an increased risk of accidents and spread of disease, respiratory conditions, lead and asbestos ingestion, and physical effects of overcrowding (for example on heart rate), and also through indirect effects on relationships, feeling of safety and refuge, social stations and sense of inclusion. Chartered Institute of Environmental Health (2018) provides a clear overview of housing as a gateway to health, listing the hazards and their relationship to physical and mental health outcome. As well as the physical qualities of accommodation, other important factors are the tenure of housing; housing insecurity; homelessness, and neighborhood deprivation.

A study done by Barnes, Cullinane, Scott, and Silvester (2013) found that children in poor housing are more likely to have mental health problems, respiratory problems, experience long-term ill health and disability, experience slow physical growth and have delayed cognitive development. Secure housing is not just a physical shelter but also provides a sense of stability and security, for example in allowing for continuity and stability of education. Housing tenure itself may have some implications, over and above poor conditions.

There is some evidence to show that adolescents who have lived in owner occupied houses for most of their life have better self-reported health than their peers who have lived in rented or insecure housing (Vallejo-Torres, Hale, Morris & Viner, 2014; Ojong, Iji, Angioha, 2019). Certainly, adolescent homelessness can have detrimental effects on all aspects of their life, adversely affecting their education and training prospects as well as employment prospects (Randall & Brown, 2004). Young people who become homeless are more likely to misuse drugs and alcohol, experience nutritional and infectious diseases, and experience anxiety and depression (Assari, Caldwell, & Zimmerman, 2015). In the adolescent population, high levels of crime and low perceived safety in the local neighbourhood are associated with increased levels of psychopathology cannabis use, decreased physical activity and increased body mass

index. A systematic review and meta-analysis by Johnson, and Johnson (2015) found that adolescents in rural areas have a 26% greater chance of being obese, compared to adolescents in urban areas. Overall, there are a number of direct and indirect ways housing and neighbourhood characteristics can potentially affect later health.

A longitudinal study by Assari, Caldwell and Zimmerman (2015) examined the influence of perceived neighbourhood safety during adolescence on subjective health 20 years later; and found that if female adolescents perceived their neighbourhood as unsafe, they experience subjective deterioration of health in adulthood. This effect was not seen in males.

4. Theoretical Framework

The study adopts the field theory of Kurt Lewin. The theory draws its ideas from the psychological theory that examines the interaction between humans and their environment. The theory has its roots in Gestald Psychological theory. The field theory was developed by psychologist Kurt Lewin in the mid-20th century. Kurt Lewin was the first to argue that adolescent development was linked to the interaction between their inborn predisposition and their experience in the environment they find themselves, i.e. nature and nurture (Lewin, 1938). Kurt Lewin proposition was made in the form of a mathematical equation referred to as the Lewin's Equation (B=F (P,E) (Lewin, 1951).

The theory holds that behavior is an interaction fact that comprises of the interaction between an individual's behavior and his environment which is a dynamic field. This field is made up of both the adolescent's psychological and behavioral environment known as facts that affect the thought process and behavior at a certain point (Lewin, 1951). A child's life space is mostly determined by the environment in which the adolescent finds him or herself. This might include the area he finds himself, occurring events, feelings about people and places and his thought process, as well as his goals (Lewin, 1951). The theory is best suited for this study as it argues that both natural and environmental factors determine the development of adolescents.

5. Research Methodology

5.1 Research Design

The cross-sectional survey research design was adopted for this study. Cross-sectional research design is one of the most popular research designs among other research design and which is also known as social survey design as well (Ukwayi, Angioha & Ojong-Ejoh, 2018). The design entails the collection of data on more than one case at a single point in time so as to collect data that is quantifiable and connected to two or more variables. Cross sectional research design allows researchers the ability to focus on a large number of people at a particular point in time and to use the collected data to answer and analyses the relationship between variables. Cross sectional research design

was used for this study to allow the researcher to observe two or more variables at a point in time and to describe the relationship between the variables under study.

5.2 Study Area

Calabar is the capital of Cross River state and is located in the Southern part of Nigeria between longitude 04° .57" North and 08° .21" East, of the equator (Charles & Charles, 2004; Angioha, Nwagboso, Ironbar & Ishie, 2018). With a population 328,877 and a population density of 980 human per square kilometer (Agba, Nkpoyen & Ushie, 2010). The area has a heterogeneous landscape with undulating surface that spans 427.05 square kilometer. That terminates at the Qua River located at the eastern flank.

Calabar is populated by three major ethnic group; Efik, Ejagham and Bekwara (Ewona, Osang, Obi, Udoimuk &Ushie, 2013; Attah, Iji & Angioha, 2019). With the heterogeneous nature of its population, Calabar is the largest City in Cross River State and this is owed largely to migration from the semi-urban part of the state and from other parts of the nation. For the purpose of administration, Calabar is divided into two local government areas of Calabar South and Calabar Municipality.

5.3 Population of the Study

The population of the study comprises all the residents of Calabar who are aged 18 years and above. The population of Calabar according to 2006 census is approximately 371,022 people. A breakdown of the population shows that Calabar south has a population of 191,630 and Calabar Municipality has a population of 179,392.

5.4 Sample

The sample for this study consists of 474 respondents selected from the two local government area that make up Calabar. The Survey Monkey Sample Size calculator was used to determine the sample size for the study. This was achieved by inputting the total population of each of the selected local government area into the calculator at a confidence level of 95 percent and at a margin error of 4.5 percent, the result displayed the minimum required sample size of 474 which was adopted as the sample size.

5.5 Sampling Technique

The study adopts the purposive and simple random technique in selecting the needed sample for this study. The purposive sampling technique was used to selected areas in Calabar. The areas selected are Mariam, Eta Agbor, Target, Satellite town, Anatigha, Ekpo Abasi and Mount Zion. These areas were selected because the characteristics of the population and the fact that they could provide the needed information for the study. The researcher also chose these areas because of the time frame of the study. The researcher then used the simple random sampling technique to select 59 respondents from seven of the study area and 64 from Ekpo Abasi.

5.6 Instrument of Data Collection

The main instrument used in the process of data collection is the questionnaire. The questionnaire was designed to gather information about poverty and single parenting: effect on child behavior in Calabar, Cross River State. The questionnaire used for this study is divided into three sections. Section A comprised of the demographic information. The section B comprised of questions on the variable raised from the independent variable. The section C comprised of questions on the dependent variable.

5.7 Method of Data Analysis

After gathering and collecting the questionnaires from the field, the researcher read through them to ascertain their numbers and to see whether all the items had been responded to. The appropriate statistical tool was used to analyse the variables under study. The hypotheses were tested at 0.05 level of significance. Out of the 474 questionnaires administered, only 448 were completely filled and returned, and thus used for the analysis.

6. Data Presentation and Findings

Hypothesis One: Family structure does not significant determine the social wellbeing of adolescent in Calabar, Cross River State, Nigeria.

The independent variable in this hypothesis is Family structure and it is categorized into three levels (large family, moderate family and small family) while the dependent variable is social wellbeing of adolescent. Mean score, standard deviation and One-Way Analysis of Variance (ANOVA) was used to test this hypothesis at 0.05 level of significance, and the results is presented in Table 1 while Scheffe Post Hoc test for multiple comparison among the groups is presented in Table 2.

Table 1: ANOVA of Family Structure and Social Wellbeing of Adolescent

Category	N	Mean	SD		
Small Family	132	12.12	3.58		
Moderate Family	146	13.64	4.60		
Large Family	170	18.17	6.33		
Total	448	14.76	5.39		
Source of variance	Sum of Squares	Df	Mean Square	F-value	Sig.
Between Groups	1872.674	2	936.337	19.000	.000
Within Groups	16114.890	446	49.281		
Total	17987.564	448			

*Significant at 0.05 level; df = 2, 446; critical F. =3.00

Source: Fieldwork, 2019.

Table 2: Scheffe Post Hoc test								
Awareness Level (I)	Awareness Level (J)	Mean Difference (I-J)	Std. Error	Sig.				
Small Family	Moderate	1.51	1.02	.337				
·	High	6.05*	1.10	.000				
Moderate Family	Low	1.51	1.02	.337				
	High	4.53*	0.88	.000				
Large Family	Low	6.05*	1.10	.000				
	Moderate	4.53*	0.88	.000				

^{*}The mean difference is significant at the 0.05 level.

Source: Fieldwork, 2019.

Table 1 shows the result of One-Way Analysis of Variance for Family structure (large family, moderate family and small family) and social wellbeing of adolescent. As presented in the table; there is statistical significant influence of family structure (cal F = 19.000; greater than critical F = 3.00 p < .05) with 2, 446 degrees of freedom. By this result, the null hypothesis which states that, Family structure does not significant determine the social wellbeing of adolescent in Calabar, Cross River State, Nigeria is rejected, while the alternate hypothesis is retained. Since Family structure significantly determines the social wellbeing of adolescent in Calabar, Cross River State, Nigeria, Post Hoc test was performed to establish which of the categories (small family, moderate family and large family) have more influence on the social wellbeing of adolescent, and the result is presented in Table 2.

Table 2 shows that, respondents who feels that large family structure determines the social wellbeing of adolescent significantly differ from respondents who feels that small family structure determines the social wellbeing of adolescent (MD = 6.05; p <.05). Also, respondents who feels that large family structure determines the social wellbeing of adolescent significantly differ from respondents who feels that small family structure determines the social wellbeing of adolescent (MD = 4.53; p <.05).

Hypothesis Two: Living condition does not significantly influences the social wellbeing of adolescent in Calabar, Cross River State, Nigeria.

The independent variable in this hypothesis is the Living condition, while the dependent variable is social wellbeing of adolescent. Pearson product moment correlation coefficient was used to test this hypothesis at 0.05 level of significance and the result is presented in Table 3.

Table 3: Pearson Product Moment Correlation of Living Condition and Social Wellbeing of Adolescents

Variable	N	Mean	SD	r-value	Sig.
Living Condition	448	15.41	2.22		
				0.334**	.000
Social Wellbeing of Adolescent	448	16.43	1.40		

^{*}significant at 0.05 level; df = 446 critical r value = 0.098.

Source: Fieldwork 2019.

The result in Table 3 revealed that the calculated r – value of 0.334** is greater than the critical r-value of 0.098 at 0.05 level of significance with 446 degrees of freedom. By this result, the null hypothesis which states that, living condition does not significantly influences the social wellbeing of adolescent in Calabar, Cross River State, Nigeria is rejected while the alternate hypothesis is accepted. The correlation coefficient is a standardized measure of an observed effect, it is a commonly used measure of the size of an effect and that values of \pm .1 represent a small effect, \pm .3 is a medium effect and \pm .5 is a large effect.

7. Conclusion and Recommendation

This study seeks to examine socio-environmental factors as determinants of social wellbeing of adolescents in Calabar, Cross River state, Nigeria. results from the analysis of data revealed that Family structure significant determine the social wellbeing of adolescent in Calabar, Cross River State, Nigeria. Results also revealed that Living condition significantly influences the social wellbeing of adolescent in Calabar, Cross River State, Nigeria. Based on this finding the study recommends that;

- 1) There is a need for government and its agencies to develop strategies to support children from broken homes in such a way as to reduce or avoid the deleterious outcomes reported in the literatures. There is also a need to explore effective ways for children to continue to have meaningful relationships with both of their parents especially with children from broken homes.
- 2) There is need for professionals of school-based wellbeing programs to consider adolescents a high-risk group with potentially low mental well-being and pay special attention to high schools of socio-economically disadvantaged adolescents.

References

- Angioha, P. U., Nwagboso, S. N., Ironbar, A. E. & Ishie, E. U. (2018). Underemployment: A Sociological and Policy Analysis of Workers Well-Being in Hospitality Industry in Calabar, Cross River State, Nigeria. *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, Volume 23, Issue 6, Ver. 5 (June. 2018) PP 57-66.
- Attah, F. M., Iji, M. E. & Angioha, P. U. (2019). Associate Factors Affecting the Growth of Micro Business in Calabar, Cross River State, Nigeria. *European Journal of Human Resource Management Studies*, 2 (2), 81-96.
- Bamgbose, O. (2002). Revitalizing the Nigerian adolescent: A consideration of rights and attendant responsibilities. In I. A. Nwazuoke, Y. Bamgbose, & O. A. Moronkola (Eds.), *Contemporary issues and researches on adolescents* (pp. 15—35) Ibadan: Royal People Nigeria Ltd.

- Barnes, M., Cullinane, C., Scott, S. and Silvester, H. (2013) People living in bad housing numbers and health impacts. London: NatCen Social Research.
- Bhat, A., & Aminabhavi, V. (2011). Home Environment and Psychosocial Competence of Adolescents. *Journal of Psychology* (1),57-63.
- Brettschneider W. D. & Naul, R. (2007). Obesity in Europe: young people's physical activity and sedentary lifestyles. *In: Sport Sciences International, obesity in Europe, young people's physical activity and sedentary lifestyles. Peter Lang, Germany,* pp.: 7–26.
- Ekpo, T. E. & Ajake, U. E. (2013). Family Socio-Economic Status and Delinquency among Senior Secondary School Students in Calabar South, Cross River State, Nigeria. American International Journal of Contemporary Research, 3 (4), 83-88.
- Etuk, G. R., Ihejiamaizu, G. C. & Obaji, N. O. (2016). Residents' Perception of Youth Gangsterism and Socioeconomic Life in Calabar South Local Government Area of Cross River State, Nigeria. *Journal of Social Science for Policy Implications*. 4(1), pp. 19-36.
- Gore, F. M., Bloem, P. J. N. & Patton, G. C. (2011). Global burden of disease in young people aged 10–24 years: A systematic analysis. *Lancet.*; 377:2093–2102.
- Ginther, D. K. & Pollak, R. K (2004). Family Structure and Children's Educational Outcomes: Blended Families, Stylized Facts, and Descriptive Regressions, *Demography*, Vol. 41, No. 4, (November 2004), 671-696.
- Kyilleh, J. M., Tabong, P. T. & Konlaan, B. B. (2018). Adolescents' reproductive health knowledge, choices and factors affecting reproductive health choices: a qualitative study in the West Gonja District in Northern region, Ghana. *BMC Int Health Hum Rights* **18**, 6, doi:10.1186/s12914-018-0147-5.
- Kabiru, C. W., Izugbara, C. O. & Beguy, D. (2013). The health and wellbeing of young people in sub-Saharan Africa: an under-researched area?. *BMC Int Health Hum Rights* 13, 11 doi:10.1186/1472-698X-13-11.
- Lerner, R. M., & Steinberg, L. (2004). The scientific study of adolescent development: Past, present, and future. *In R. M. Lerner & L. Steinberg (Eds.), Handbook of adolescent psychology* (pp. 1-12). Hoboken, NJ, US: John Wiley & Sons Inc
- Lewin, K. (1938). The conceptual representation and measurement of psychological forces. Durham, NC: Duke University Press.
- Lewin, K. (1951). Field theory in social science. New York: Harper.
- Malik, P. R. & Balda, S. (2006). High IQ adolescents under stress: Do they perform poor in academics, *Anthropologist*, 8(2): 61-62.
- Ojong, M. U., Iji, M. E., Angioha, P.U. (2019). Curing Socio-Economic ILLS in Obudu Local Government Area: An Assessment of Non-Governmental Agencies Activities". *Journal of Social Service and Welfare*;1(2): 38-45.
- Patton, G. C., Coffey, C. & Cappa, C. (2012). Health of the world's adolescents: A synthesis of internationally comparable data. *Lancet*. 379:1665–1675.

- Ukwayi, J. K., Angioha, P. U. & Ojong-Ejoh, M. U. (2018). Youth empowerment: A criminological approach for crime prevention and control in Cross River State, Nigeria. *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 22 (11), 73-81.
- Ukwayi J. K. (Ph.D), Angioha P. U. & Nwagboso S. N. (2018). Poverty and Insecurity: A Dangerous Threat to Business Activities and Development in Calabar South LGA, Cross River State, Nigeria. *SSRG International Journal of Humanities and Social Science* 5(2), 33-38.
- Ukwayi, J. K., Angioha, P. U. & Aniah, E. A. (2019). Associate Factor of Trafficking in Women and Children in Calabar, Cross River State, Nigeria. *European Journal of Political Science Studies* 3 (1), 1-15
- USDHHS (2013). Healthy People 2020. Public health infrastructure; Washington, DC: Available from: www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid
- World Health Organization (2010). Physical Inactivity: *A Global Public Health Problem.*World Health Organization (2014). World Health Organization; Geneva. Health for the world's adolescents. A second chance in the second decade. Available from:

http://apps.who.int/adolescent/second-decade/, Accessed November 16, 2019.

Creative Commons licensing terms

Author(s) will retain the copyright of their published articles agreeing that a Creative Commons Attribution 4.0 International License (CC BY 4.0) terms will be applied to their work. Under the terms of this license, no permission is required from the author(s) or publisher for members of the community to copy, distribute, transmit or adapt the article content, providing a proper, prominent and unambiguous attribution to the authors in a manner that makes clear that the materials are being reused under permission of a Creative Commons License. Views, opinions and conclusions expressed in this research article are views, opinions and conclusions of the author(s). Open Access Publishing Group and European Journal of Public Health Studies shall not be responsible or answerable for any loss, damage or liability caused in relation to/arising out of conflicts of interest, copyright violations and inappropriate or inaccurate use of any kind content related or integrated into the research work. All the published works are meeting the Open Access Publishing requirements and can be freely accessed, shared, modified, distributed and used in educational, commercial and non-commercial purposes under a Creative Commons Attribution 4.0 International License (CC BY 4.0).